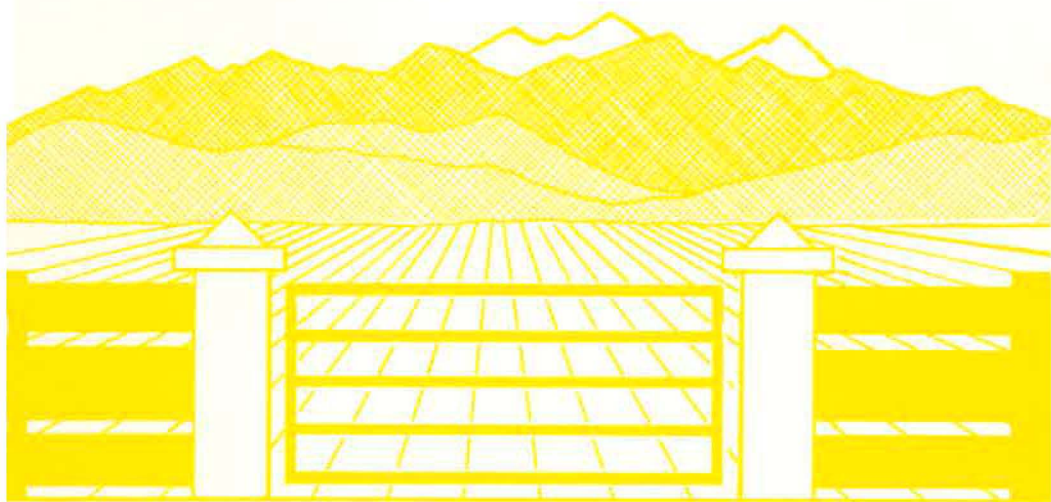


**Lincoln College**

**Farm Management and Rural Valuation Department**

# **1982 Farm Budget Manual**



## **Part 2 Financial (Volume 2)**

# **1982 FARM BUDGET MANUAL**

**Part 2: FINANCIAL**  
Volume 2      Sections 5–8

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1971-1972  
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## SECTION 5

### ENTERPRISE ANALYSIS





## 5. ENTERPRISE ANALYSIS

### 5.1 GROSS MARGIN ANALYSIS - A CRITICAL EVALUATION (Prepared by G. Tate, December 1979)

#### 5.1.1 Introduction

The farm manager is frequently faced with selecting the most appropriate production possibility from amongst several alternatives. If the alternatives or adjustments to be considered involve no significant changes in the fixed cost structure, then some form of partial budgeting can give a satisfactory guide to correct decision. Partial budgeting involves giving consideration only to those cost or income items that are directly affected by the proposed alternatives. Where the proposed change does not involve altering the requirements for a particular resource (e.g. labour), then the costs related to this resource may be regarded as fixed and thus excluded from the analysis without affecting its validity. A partial budget is merely a simplified whole farm budget in which certain fixed considerations are ignored.

The use of partial budgeting has been extended in use by the development of gross margins analysis. This system involves only the consideration of the gross contribution made by a particular enterprise in excess of the additional variable costs necessary to operate it. It assumes complete linearity, that is that each additional unit of production is worth as much as and costs as much as each preceding unit. It also assumes that the enterprise being assessed can be technically and financially isolated from other activities, and thus considered independently.

A knowledge of the gross margins of possible enterprises on the farm is a valuable guide for farmers and their advisers when making decisions on the best combination to adopt. Unfortunately, because of the mechanical and conceptual ease of this method of analysis, there has been a growing tendency for inappropriate and misleading application. The failure to appreciate the limitations of the technique can lead to faulty decision making. In a simple problem, such as the choice between growing Kopara wheat and Arawa wheat in a particular paddock, the use of gross margins analysis gives a quick and reliable answer. The only considerations are the likely yield and price for each variety together with the additional costs of harvesting where the yield differs. Other aspects such as possible marketing difficulties with Arawa can be considered outside the gross margin framework. Even in this simple example however, and as indeed with any other

method of analysis, the reliability with which the critical parameters may be assessed is of great significance to the value of the answer obtained. The critical measures in most considerations are the yield and the price obtained for the product. In general, far too much attention is paid to getting the last detail of cost correct while sweeping a broad brush over the really significant parameters of yield and price.

It is well to be aware that farmers' performance figures are not always reliably recorded and rarely include disaster years. This often means that average yields quoted are the average performance of good years not the average of all years. The significance of the last few kilograms of yields to the profitability of an enterprise is generally appreciated. Any discrepancy in this respect is likely to lead to significant errors in the choice of the most profitable alternative. Where a farmer has a well prepared set of farm accounts extending over several seasons, the extraction of performance figures from these is likely to be more reliable than relying on undocumented opinion.

The effect of not accurately establishing yield performance can be illustrated by the hypothetical example of a Canterbury light land farm where severe drought occurs one year in five, resulting in no harvest.

Wheat may yield an average of 3.5 tonnes per hectare over the four good years, but in the fifth dry season nothing. A gross margin analysis calculated on the 3.5 tonnes yield might show a return of about \$350 per hectare. However, on the true crop mean yield over the five years of 2.8 tonnes per hectare the gross margin would be reduced to about \$280 per hectare.

At all times when considering an individual farm situation, it is the performance on that farm that is relevant, not the district average or some standard obtained from elsewhere. This means that the farm adviser constructing an alternative management policy on two similar farms may well have a differing gross margin for the same crop based on the individual farmer's past experiences in the area.

Among the problems that can arise with the use of gross margins analysis, the following have all been observed by the writer and are provided here to illustrate the dangers of adopting an over-simplified approach to the consideration of farm management alternatives.

### 5.1.2 Choice of the Limiting Resource

Gross margins are customarily expressed in terms of returns per unit of land area or per head of livestock. In many farm management decisions, maximisation of returns to capital may be of greater significance. Occasionally labour is a critical constraint and maximisation of returns to this resource is the farm manager's goal. Perhaps the best known example of conflict between returns to land and to capital lies in a consideration between the alternative enterprise of cattle or sheep.

For the purpose of illustration let us assume that the gross margin per stock unit for a ewe flock is \$20. At 15 ewes per hectare the gross margin per hectare would be \$300. For a cattle policy, buying in weaners and selling prime stock, let us assume a gross margin per stock unit of \$26, or at 15 stock units per hectare \$390. On this basis of gross margin per hectare cattle look more profitable by \$90 per hectare. (\$390 compared with \$300.)

For many farmers however, capital or access to it will be the most critical constraint. If a farmer cannot get more capital then looking at a gross margin purely in terms of feed utilisation can give a completely false picture of the most desirable alternative.

Let us assume that a stock unit in sheep costs \$25 and a stock unit in cattle costs \$50 (if we assume a weaner steer being the equivalent of 3 ewes this values the weaner at about \$150 per head). With 15 stock units per hectare we find the following position:

Cattle	Gross margin per hectare	=	\$390
	<u>Livestock capital per hectare</u>		<u>\$750</u>

i.e. a 52% return to livestock capital

Sheep	Gross margin per hectare	=	\$300
	<u>Livestock capital per hectare</u>		<u>\$375</u>

i.e. an 80% return to livestock capital

Recognising capital is the limiting resource we should conduct our gross margins analysis to establish relative returns to this factor, i.e. to establish the relative gross margin per \$1 invested.

In the above example we find the following:

Cattle      \$750 invested returns \$390.  
                  i.e. a gross margin return of 52 cents per \$1  
                  invested.

Sheep        \$375 invested returns \$300.  
                  i.e. a gross margin return of \$80 per \$1  
                  invested.

The above illustrates the necessity to decide on any farm what the critical scarce resource is. If the farmer wishes to maximise his return to feed grown and can obtain additional capital cheaply then the absolute return from cattle is going to be higher than for sheep. For example

	Cattle	Sheep
Gross margin per hectare	\$390	\$300
Less interest at 10% on capital invested in livestock - approx.	\$ 75	\$ 37
Residual margin per hectare	\$315	\$263

If capital is available at 10% then the farmer on a 500 hectare property with the above figures is likely to be better off by \$26000 by running cattle. In the above example the cost of capital would have to be greater than 33% before the residual margin per hectare would favour investment in sheep rather than cattle.

If our farmer has unlimited surplus grass, but only a thousand dollars of capital available to buy livestock then, in the above example, his return to the scarce resource is going to be \$800 if he uses the capital to buy sheep but only \$520 if he used his capital to buy cattle.

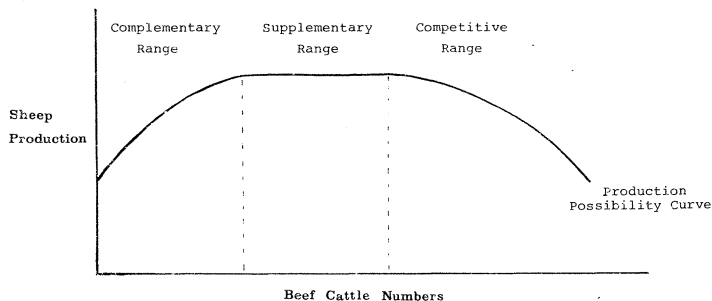
### 5.1.3 Selecting the Correct Rate of Substitution

In comparing alternative livestock practices on a gross margin basis, the rate of substitution of one animal for another is critical.

On tussock country the proposal to replace some sheep by cattle may require an entirely different rate of substitution than would be the case for a similar proposal relating to a prime lamb farm. For example, on a tussock block at present carrying sheep it may well be that the replacement of some sheep with cattle will initially give a complementary effect resulting not in a substitution but in an improvement in production by the sheep carried as well as additional production by cattle. As total stocking rate is increased there may be reached the stage of fixed production by sheep, but some addition to total

production by the extra cattle, i.e. a supplementary effect. This may be due to cattle eating different plants to the sheep.

It may only be at a third or higher stocking rate that the competitive effect between sheep and cattle comes into play and any rate of substitution for gross margin analysis is valid. On a prime lamb farm, cattle and sheep will probably be directly competitive from the outset.



A further example where the correct rate of substitution is critical to the problem to be analysed could be seen in considering two alternative enterprises such as the buying of ewe lambs for sale as two tooth ewes and the running of a conventional breeding flock. Common practice is to use the accepted rate of substitution of one hogget being equal to 0.6 breeding ewes. In this example however, there are really three periods of the year to be taken into account when considering the substitution rate in respect to feed supply. Over the winter the hogget must be fed for growth, the ewe requires only maintenance. It may well be that at this period of the year one hogget directly substitutes for one ewe. In spring the breeding ewe with a lamb at foot has a full productive requirement, the hogget has only to maintain itself with some growth. In spring the substitution rate of one ewe for two hoggets may well be applicable. Over the summer season, if good two tooth ewes are to be produced, the hogget must be well fed. The ewe at this time is back to maintenance. One could suggest that over the summer period one ewe may be equal to 0.75 hoggets.

Gross margin analysis for such a problem would require the definition of the period of feed limitation on a particular property and the use then of the appropriate substitution rate. Again it is a matter of accurately

defining the scarce resource, i.e. feed, at a particular time of the year, and using the substitution rate appropriate to that time of the year. Because the above stock policy change is likely to have quite complex effects on farm operation, gross margins analysis is unlikely to yield a satisfactory comparison. Partial or full comparative budgeting would be better methods of comparing the two systems.

Gross margins analysis is sometimes used to compare the returns from a paddock used in growing crop or in carrying livestock. The correct substitution rate to be used in deciding the sheep carrying is not the overall farm position, but the contribution that that particular paddock will make to stock carrying in the feed pinch period, i.e. the time of maximum constraint. For example, if the time of the year which limits increases in carrying capacity is the months of August and September, the correct substitution rate to impose on sheep versus crop is the potential carrying capacity of that paddock in those two months.

It could well be that a farm with an overall carrying capacity of twelve ewes per hectare may be in the position where in August each grass paddock carries 17 ewes. Seventeen ewes then is the substitution rate to be used in comparing the two enterprises, not twelve.

#### 5.1.4 Complementarity and Supplementarity of Operations

Complementary and supplementary relationships are important in planning the most profitable programme in mixed arable farming. Because many enterprises require land for widely differing periods of time, simple gross margin analysis may lead to serious errors. For example, a comparison of gross margins on a property farmed with the following rotation could be made:

Old pasture - kale seed - wheat - specialist white clover  
- wheat - peas - new grass - grass seed - white clover  
seed - grazing.

The gross margins for each crop might be:

	Gross Revenue per hectare	Direct Costs per hectare	Gross Margin per hectare
Kale seed	\$1000	\$300	\$700
Wheat	\$ 500	\$150	\$350
White Clover Specialist	\$ 600	\$250	\$350
White Clover Pasture	\$ 300	\$200	\$100
Peas	\$ 500	\$350	\$150
Ryegrass Seed	\$ 600	\$300	\$300
Grazing ewes	-	-	\$285

Looking simply at the calculated gross margins one would say that most of the farm should be in kale seed. The true position however is not so clear cut. While over a 10 year period the gross margin for kale could be justified, the price and the yields are extremely variable. Interseasonal variation and risk are very high with this crop. A farmer with all his farm in kale might well go bankrupt waiting for the correct combination of yield and price to give him that bumper year that over a long term gives such a high average gross margin. In addition kale occupies the ground over the period from December to the succeeding January. Because nothing effective can be done with the land before the following crop of wheat is shown in June, land is really tied up for 18 months and the gross margin for the crop, as expressed above, makes no allowance for this time period difference.

The specialist white clover permits the carrying of say, five ewes per hectare from May to November, increasing profitability by about \$50 per hectare. The increased nitrogen status of the soil following the white clover crop will also increase the subsequent wheat yield. The white clover in pasture permits the carrying of 15 ewes from February to November, increasing profitability by \$200 per hectare. The ryegrass permits ewe grazing from May to October producing an additional \$120 per hectare of gross margin. The peas boost the subsequent yield of ryegrass by 100 kilograms per hectare. Therefore an additional \$30 per hectare profit is earned from the ryegrass crop, as a result of following peas in the rotation.

Consideration of each enterprise merely on a gross margin basis ignoring the effects of the length of time of land use, availability of stock grazing, carry-over of fertility effect and labour requirement can lead to unsound decision making.

With mixed arable farming it is possible to establish the



revenue earning expectations of the whole rotation over its time period. This may then be compared on a yearly basis with the revenue earning capacity of alternative rotations. Consider for example any rotation 'A', which we assume yields a total gross margin return of \$1200 over its six-year time period. Consider also rotation B, which yields a gross margin return of \$1440 over its eight-year time period. Clearly, when the total revenue earned is divided by the number of years involved, rotation A returning \$200 per annum would appear more profitable than rotation B returning \$180 per annum.

By comparing the return from the total rotation, allowance can be made for complementary and supplementary effects. In this way gross margins analysis can provide a guide to the decision-maker. Unfortunately there are usually many factors in comparing alternative systems that cannot adequately be considered in gross margin analysis. A more detailed technique, such as comparative budgeting is usually advisable in these circumstances.

#### 5.1.5 The Allocation between the Variable and Fixed Costs

By definition, the gross margin is the value of production minus the variable (or direct) costs associated with the enterprise. These variable costs are those which increase or decrease proportionately to changes in the scale of the enterprise's production. Such things as veterinary fees or animal health remedies are typical variable costs in animal production.

The fixed costs are those that will stay the same no matter what the pattern of production - for example rates, insurances, accounting fees. However, this raises some problems because in one sense all costs are variable - land and equipment can be bought and sold or labour hired and fired.

Very few farm operations can be reliably considered as individual processes. For example, in a mixed livestock cropping economy, typical conceptual problems that can arise in preparing gross margin analysis between enterprises might be -

- (i) To which enterprise should the cost of new grass establishment be charged - to the cropping because it is necessary to restore structure or fertility, or to the livestock that are going to eat it?
- (ii) Should the cost of fencing maintenance be a charge against livestock?

(iii) What is the cost of a fallow and where should it be charged?

The difficulty in resolving these sorts of problems reduces the reliance that can be placed on gross margins analysis. The tendency to disregard side effects or to ignore the overall effect of a management change on the property's fixed costs can result in illogical decision making.

#### 5.1.6 Summary

Used for marginal analysis and clearly defined situations in which the results can be interpreted with a good deal of common sense, gross margins analysis provides a quick, easy means to assist in evaluating alternatives. A knowledge of the gross margins of possible enterprises on the farm is an extremely valuable guide for farmers and their advisers when making decisions on the best combination of enterprises.

Where problems are complex, or involve considerations embracing interaction between several enterprises, then the preparation of alternative budgets will give a more reliable guide to the decision-maker. Whatever the technique of analysis employed, the conclusion will only be as accurate as the initial data on which it was based. The successful application of the analysis will depend on the skill of the farmer or his adviser in recognising the limitation of the technique employed.

## 5.2 GROSS MARGINS

### 5.2.1 Introduction

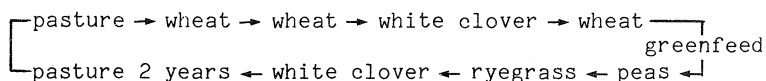
Farmers with a range of alternative crops and stocking systems have to choose which crops and stock systems are the most suitable for their situation. A series of production plans and budgets take a lot of time to show which is likely to be the most profitable plan.

An alternative approach is to first work out the profitability of each crop and system that can be undertaken on the farm. Profitability of each enterprise may be measured in terms of a Gross Margin, the difference between Gross Revenue and Gross Costs. Gross Margins are short-cut methods because they ignore fixed costs. These are taken into account later when a farm plan is budgeted, and income and costs for the whole farm are estimated.

When using the G.M. approach to determine a better farm plan, first list the alternative enterprises and estimate Gross Margins for each. Make sure that the levels of production are relative to each other. Then draw up various rotations taking into account the farmer's preferences and any constraints influenced by soils, climate, capital, etc.. The Gross Margin for each enterprise in the rotation (i.e. both crops and stock) will be added together and then averaged per hectare per year. The rotation having the highest G.M. can then be tested by drawing up the whole farm budget to confirm it is a better farm plan.

### 5.2.2 Examples of Crop and Small Seeds Gross Margins 1982

The rotation used is an example of land use possible on medium soils.



i.e. a 9 year rotation.

#### (i) 1st Wheat Crop (Kopara ex pasture):

Programme:

Cultivation:

The paddock is disced twice in March, ploughed in April, heavy harrowed, grubbed and heavy harrowed in May, drilled in late May along with 125 kg/ha of superphosphate.

Weed and Pest Control:

The crop is sprayed after the 2 leaf stage but before third joint is detectable in the wheat crop, for the control of various weeds and wild oats.

Harvesting:

The crop is headed in January using own machinery, stored in on-farm bulk silos until August. A firebreak is ploughed after the crop is harvested and the stubble is raked up and burned in late January.

Direct Costs (per hectare):

Cultivation: 5 hrs/ha @ \$6.70/hr	\$33.50
Seed: 130 kg/ha seed @ \$290/t plus treating, e.g. Baytan @ \$48.65/t (no royalty)	\$44.00
Fertiliser: 125 kg/ha super phosphate @ \$136.85/t on farm	\$17.11
Weed Control: e.g. M.C.P.A. @ 3 litres/ha @ \$5/litre plus spraying @ .33 hrs/ha @ \$6.70/hr	\$17.21
Wild oat spray (e.g. Avenge): 5 litre/ha @ \$13.00/litre plus spraying @ .33 hrs/ha @ \$6.70/hr	\$67.21
Rust Control: e.g. Bayleton @ 500 ml/ha @ \$49/litre spraying @ .33/hr @ \$6.70/hr	\$26.73
Heading: .75hrs/ha @ \$14.96/hr	\$11.22
Cartage: from field to silos @ \$2/ha	\$ 2.00
Raking and Ploughing Firebreak: \$6.70/hr	\$ 1.00
Cartage: from silo to rail (by contract) @ \$5.43/t (8 km distance)	\$21.94
TOTAL DIRECT COSTS	\$241.92

Gross Revenue:

Yield: 4.03 t/ha	
Price: \$203/t plus storage increment to August 1st of \$16.75/t	
Income: 4.03 x \$219.75/t less levy of 91c/t	\$881.93
TOTAL REVENUE	\$881.93

Thus it appears that in this example using own machinery, the costs are about \$242 and the revenue is \$882 leaving a gross margin of \$640/ha.

(ii) 2nd Wheat Crop (Kopara ex Wheat):

Programme:

Cultivation:

The paddock receives 2 grubblings in March-April and another grubbing in May. It is drilled in late May, with 125 kg/ha superphosphate.

Weed Control:

As for the first wheat crop, but with M.C.P.B. at a rate of 3.5 litres/ha.

Undersowing:

White clover is sown in August at 3.0 kg/ha with 125 kg/ha of lime reverted superphosphate.

Harvest:

The harvest programme is the same as for the first wheat crop. It is not necessary to bale the straw.

Direct Costs (per hectare):

Cultivation: 2 hrs/ha @ \$6.70/hr	\$ 20.10
Seed: 130 kg/ha seed @ \$290/t plus treating e.g. Baytan @ \$48.65/t (no royalty)	\$ 44.00
Fertiliser: 125 kg/ha superphosphate @ \$136.85/t on farm	\$ 17.11
Nitrogen: 40 kg N/ha, e.g. 250 kg/ha Ammonium Sulphate @ \$237.75/t	\$ 59.44
N.B. Undersowing costs are charged to the white clover gross margin (see later)	
Weed Control: M.C.P.B. @ 3.5 litres/ha @ \$5/litre spraying @ .33 hrs/ha @ \$6.70/ha	\$ 19.17
Wild Oat spraying, e.g. Avenge @ 5 litres/ha @ \$13/litre spraying @ .33 hrs/ha @ \$6.70/hr	\$ 67.21
Heading: .75 hrs/ha @ \$14.96/hr	\$ 11.22
Cartage: from field to silo @ \$2/ha from silo to rail (by contract) @ \$5.43/t (8 km)	\$ 20.09
TOTAL DIRECT COSTS	\$260.34

Gross Revenue:

Yield: 3.7 t/ha

Price: Same calculations as with first wheat crop.

Income:  $3.7 \times \$219.75$  less levy of  
91c/tonne \$809.71

TOTAL REVENUE \$809.71

In this example the costs are about \$260 and the revenue is almost \$810/ha, giving a gross margin of \$550/ha.

(iii) White Clover (ex wheat):

Programme:

The seed is oversown into wheat in September. Fertiliser is applied at 250 kg/ha of super-phosphate in March.

Grazing:

The paddock is lightly grazed in March and is then consistently grazed over the winter to help spread the straw. Over the spring months, the grazing pressure is about 5 s.u./ha. The paddock is closed in early October and then heavy rolled.

Weed Control:

The paddock is spot sprayed with Asulox in July for dock control. It is sprayed in August with Carbatamex and M.C.P.B. for control of annual grasses, flatweeds and suckling clover. In January, the crop is dessicated with Reglone plus Agral LN wetting agent.

Harvest:

After dessication (5-6 days), the crop is headed. The field dressed seed is then carted to a merchant to be machine dressed. Extra sacks are required for double bagging the M.D. seed (capacity of a sack is 50 kg).

# Direct Costs:

Seed: Oversowing of 3 kg/ha @ \$3/kg	\$ 9.00
plus 0.6 hr/ha @ \$6.70/hr	\$ 4.02
Fertiliser: 125 kg/ha lime reverted	
superphosphate \$113.65/t on the farm	\$ 14.20
250 kg/ha superphosphate @ \$120.85/t	\$ 30.21
Heavy Rolling: 0.6 hr/ha @ \$6.70	\$ 4.02
Weed Control: Dock Control, spot	
spraying	\$ 4.00
General weeds: e.g. M.C.P.B. 3.5 litres	
plus spraying @ .33 hrs/ha @ \$6.70/hr	\$ 19.17
Grass Removal: e.g. Carbetamix @	
\$16.28/kg	
4 kg/ha, plus spraying	\$ 67.33
Dessicating: (a growthy crop) e.g.	
Reglone @ \$12.65/litre	
3 litres/ha plus spraying costs	\$
40.16	
Mowing: 1.75 hrs/ha @ \$6.70/hr	\$ 11.73
Heading: 2.5 hrs/ha @ \$14.96	\$ 37.40
Box hire - 1 box (cartage out and in	
for dressing)	\$ 5.50
Consolidated Dressing & Store Handling	
Charge:	
500 kg/ha F.D. @ 21c/kg	\$105.00
Sacks: 14 @ 97c (350 kg double	
sacks @ 50 kg/sack)	\$ 13.58
TOTAL DIRECT COSTS	\$365.32

## Gross Revenue:

Yield: 500 kg/ha F.D.; 30% less on	
machine dressing; 350 kg/ha M.D.	
Price: \$2.50/kg for 1st Generation seed	
Income: 350 kg x \$2.50/kg	\$875.00
TOTAL REVENUE	\$875.00

In this example, the gross margin is about \$510/ha with direct costs of about \$365/ha and revenue of about \$875/ha.

To this should be added some return from the winter grazing. A gross margin of \$25.07/s.u. can be expected this season (see Sheep Gross Margins, Section 5.2.3) from the consumption of 590 kg D.M. over a 12 month period.

If one hectare produces 1500 kg D.M./ha in the winter-spring period, this represents 245% of the annual requirement of one s.u. Thus the return to be added to the above figure is:

$\$25.07 \times 2.54 = \$63.67$  which brings the total white clover gross margin to about \$574/ha.

(iv) 3rd Wheat Crop (ex white clover):

Programme:

Following the white clover harvest, the tailings are fed to sheep and the paddock cleaned up before the cultivation for wheat. The cultivation is the same as for a wheat crop ex old grass and the only additional cost could be for insect control. The paddock should also be tested for Nitrogen levels in late winter.

Direct Costs (per hectare):

As for 1st wheat crop	\$241.92
Insect Control: Systemic Aphicide, Bidrin @ 400 ml/ha @ \$16/litre plus .33 hrs/ha spraying @ \$6.70/ha	\$ 8.61
TOTAL DIRECT COSTS	\$250.53

Gross Revenue:

Yield: 3.7 t/ha	
Price: \$809.71/t including storage increment	
Income: $3.7 \times \$219.75$ /t less levy of 91c	\$809.71
TOTAL REVENUE	\$809.71

Thus the Gross Margin for this crop (using own harvesting machinery) is about \$560/ha.

(v) Greenfeed Oats (ex wheat):

Programme:

After the wheat stubble has been burnt off, the paddock is grubbed 3 times in February and the crop is drilled at the end of February. Amuri oats are used at the rate of 90 kg/ha. Nitrogen superphosphate is applied at 250 kg/ha.



Grazing:

The paddock is grazed during June and July.

Direct Costs:

Cultivation: 2.5 hrs/ha @ \$6.70/hr	\$ 16.75
Seed: 90 kg/ha @ \$250/t	\$ 22.50
Fertiliser: 250 kg/ha nitrogen super-phosphate @ \$176/t on farm	\$ 44.00
TOTAL DIRECT COSTS	\$ 83.25

Gross Revenue:

If stock consume 590 kg D.M./year, and one hectare produces 3500 kg D.M./ha it would support 6 s.u.-ha.

The revenue contribution of these 6 stock units at \$25.07/s.u. is therefore:

\$19.40 x 6	\$150.42
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TOTAL REVENUE	\$150.42
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Thus the gross margin is about \$67/ha.

(vi) Field Peas (Blue Rondo ex Greenfeed Oats):

Programme:

The paddock is disced twice at the end of July and then ploughed, heavy harrowed, vibratillered to mix in Treflan, rolled and drilled at the end of August. 250 kg/ha of peas are sown with 250 kg/ha of Mo superphosphate.

Weed Control:

The paddock is sprayed with Pre-emergence herbicide, e.g. Treflan in July at 2.5 litres/ha.

Harvesting:

The crop is direct headed in February into sacks and then carted to a merchant for machine dressing. The pea straw is raked and baled and sold in the paddock.

Direct Costs (per hectare):

Cultivation: 4 hrs/ha @ \$6.70/hr	\$ 26.80
Seed: 250 kg/ha Blue Rondo @ \$250/t (Contract price includes treating and sacks)	\$ 87.50
Fertiliser: 250 kg/ha molybdate super @ \$145.40/t	\$ 36.35
Weed Control: 2.5 litres/ha Pre- emergence herbicide, e.g. Treflan @ \$8.90/litre plus .33 hrs/ha @ \$6.70	\$ 24.48
Harvesting: 1.75 hrs/ha @ \$14.96/hr	\$ 26.18
Sacks: 36 sacks/ha (75 kg/sack) @ \$1.16	\$ 41.76
Cartage: 2.7 tonnes 2.5 boxes to store (own cartage).	\$ 2.20
Box hire: 2.5 boxes @ \$5.50/box	\$ 13.75
Consolidated Dressing & Store Handling Charge:	
2.7 tonnes @ \$35.00/t	\$ 94.50
Raking pea straw (own machinery): .5 hr/ha @ \$6.70/hr	\$ 3.35
Baling pea straw (contract): 90 bales/ha @ 50c/bale	\$ 45.00
TOTAL DIRECT COSTS	\$401.87

Gross Revenue:

Yield: 2.7 t/ha	
Price: contract \$250/tonne	
Income: 2.7 t x \$250/tonne	\$675.00
Pea Straw: 90 bales/ha @ 75c/bale	\$ 67.50
TOTAL REVENUE	\$742.50

With costs approximating \$402/ha and revenue in the vicinity of \$743 the gross margin in this example becomes \$341/ha.

(vii) New Grass for Nui Seed (ex peas)

Programme:

Following the pea harvest in February, the paddock receives two grubblings and lime is worked into the soil. To sustain a rotation of this nature, the pH should be brought up to 6.2 at this stage which means 2.47 tonnes of lime per hectare if the pH following peas is about 5.7. Cultivation follows a programme of grub, harrow and roll in sequence

three times to achieve effective weed control. New pasture is drilled with a mixture of 23 kg/ha Ariki ryegrass and 3 kg/ha white clover sown with 250 kg/ha of superphosphate.

#### Grazing:

This new grass is given a light first grazing in May and is lightly grazed over the winter to allow light into the clover seedlings. Then although the paddock is not available for the whole spring period, the equivalent spring grazing rate is 6 s.u./ha. The paddock is closed from grazing in the middle of September and at the end of September receives either 125 kg/ha of urea or 250 kg/ha of sulphate of ammonia.

#### Harvesting:

In early January the crop is mown and left for 5-6 days before being headed. The field-dressed seed is then carted in sacks to the merchant for dressing and sale.

#### Direct Costs (per hectare):

Seed Bed Preparation: 6.5 hrs/ha	
@ \$6.70/hr	\$ 43.55
Seed: 23 kg/ha Basic Nui ryegrass	
@ \$3/kg	\$ 69.00
3 kg/ha Huia white clover @ \$3/kg	\$ 9.00
Fertiliser: Lime 2.47 t/ha @	
\$15.70/t (includes cartage	
and spreading)	\$ 38.78
250 kg/ha superphosphate	
@ \$136.85/tonne	\$ 34.21
250 kg/ha sulphate of ammonia at	
\$237.75/tonne	\$ 59.44
Harvesting: Mowing 1.5 hrs/ha @	
\$6.70/hr	\$ 10.05
Heading 2.25 hrs/ha @ \$14.96/hr	\$ 33.66
Sacks: 14 sacks @ \$1.16 each	\$ 16.24
Box hire: 1.5 boxes @ \$5.50	\$ 8.25
Consolidated Dressing and Handling	
Charge:	
7.5c/kg F.D. weight x 900 kg/ha	\$ 67.50
Raking ryegrass straw (own	
machinery): 0.3 hr/ha @ \$6.70/ha	\$ 2.01
Baling ryegrass straw (contract):	
100 bales/ha @ 45c/bale	\$ 45.00
TOTAL DIRECT COSTS	\$436.69

#### GROSS REVENUE:

YIELD: 900 kg/ha F.D.; 25% loss on machine dressing. Thus yield becomes 675 kg/ha M.D.  
Price: 1st Generation Nui @ \$1.50/kg  
Income: 675 kg x \$1.50 \$1,012.50  
Ryegrass straw: 100 bales/ha sold in the paddock at 70c/bale \$ 70.00  
  
TOTAL REVENUE \$1,082.50

This example suggests a gross revenue of \$1,083/ha with direct costs of \$437/ha, giving a gross margin of \$646/ha. Some recognition in terms of income should also be attributed to the grazing provided by the paddock during the winter-spring period.

With an estimated feed production of 2200 kg/ha over the grazing period, representing an annual grazing equivalent of 3.7 s.u./ha, then the gross margin contribution is:  
 $3.7 \times \$25.07 = \$92.75$ , which brings the G.M. to \$738. Without the liming charge, the gross margin would be about \$40/ha extra.

#### (viii) 2nd Year of New Grass for White Clover Seed:

##### Programme:

Following the ryegrass harvest, the paddock is grazed consistently until being closed in early October. The autumn application is 250 kg/ha of superphosphate. The programme is very similar to the earlier white clover crop (example (iii)), except that no weed spraying is done and there is more likelihood of a case bearer problem. The crop is dessicated with Reglone 5-6 days prior to mowing.

##### Direct Costs (per hectare):

Fertiliser: 250 kg/ha superphosphate  
@ \$136.85/tonne \$ 34.21  
Heavy Rolling: 0.6 hr/ha @ \$6.70/hr \$ 4.02  
Pest Control: Case bearer sprayed  
twice @ \$15.00/ha \$ 30.00  
Crop Dessication: Dessicating a  
growthy crop \$ 47.30  
Heading and Mowing: as before \$ 49.13  
Box hire: 1 box (cartage in and out) \$ 5.50

Consolidated Dressing and Store

Handling Charge:

9 @ 97c (double sacks)	\$ 8.73
21c/kg F.D. weight x 340 kg/ha	\$ 71.40

TOTAL DIRECT COSTS	\$299.42
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Gross Revenue:

Yield: 340 kg/ha F.D. (4-5 sacks/ha);

30% loss on machine dressing

Thus yield becomes 225 kg/ha M.D.

Price: White clover @ \$2.50/ha

Income: 225 kg/ha x \$2.50/kg	\$562.50
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TOTAL REVENUE	\$562.50
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Thus with gross revenue of \$563/ha and direct costs of about \$299/ha, the gross margin becomes about \$264/ha. Again the grazing contribution should be added to this figure. The estimated feed produced over the grazing period is 2700 kg/ha or an annual grazing equivalent of 4.6 s.u./ha which means a gross margin contribution of:

$4.6 \times 25.07 = \$115.32$

Thus the white clover gross margin now becomes about \$379/ha.

(ix) Pasture (2 years grazing):

Programme:

The pasture is grazed, and hay is made in the summer. Fertiliser is applied in the autumn.

Direct Costs (per hectare):

Fertiliser: 250 kg/ha superphosphate	
@ \$120.85/tonne	\$ 30.20
Hay making: Mowing and raking	
@ 1 hr/ha @ \$6.70/hr x 0.2	\$ 1.84
Baling: 140 bales/ha @ 45c/bale	
x 0.2 (contract rates)	\$ 12.60
Cartage: 140 bales/ha @ 45c/bale	
x 0.2 (contract rates)	\$ 12.60
TOTAL DIRECT COSTS	\$ 56.74

## Gross Revenue:

The estimated utilised feed during the grazing period is 8250 kg/ha D.M., which at 590 kg D.M./s.u. means a stocking rate of 14 s.u./ha. At \$25.07/s.u. the gross revenue becomes 14 x \$25.07.

TOTAL REVENUE	\$350.90
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NOTE: Regarding the haymaking charges, the cost has been assessed as that of providing the 14 s.u./ha with 2 bales of hay per s.u. for wintering, i.e. 28 bales/ha required. This represents 20% of the normal hay crop of 140 bales/ha.

Thus with gross revenue of about \$351 and direct costs of about \$57/ha the gross margin for pasture is \$294/ha.

## (x) Summary

The gross margin per hectare has been assessed for each crop in the rotation given one set of parameters. Certain anomalies exist, such as the liming charge in the Nui ryegrass direct costs, which, in actual fact should be shared by each crop. Similarly, the seed and cultivation charges for the ryegrass crop should be apportioned over the pasture's life for a more accurate picture of the individual crop's contribution. Given that such anomalies exist, a summary of gross margins for the chosen rotation is presented below:

Year	Crop	Gross Margin \$/ha
1	Wheat	640
2	Wheat	550
3	White Clover (sp.)	574
4	Wheat	560
5	Oats, greenfeed	67
	Field Peas	341
6	Nui Ryegrass	646
7	White Clover	563
8	Pasture	294
9	Pasture	294
Total for 9 years		4,529

The average annual gross margin is therefore \$503/ha/year.

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Following this procedure and by comparing various rotations, a best rotation can be established, which then enables the formulation of a better farm plan.

The above analysis can be carried a stage further to the annual budget where fixed costs are then deducted from the gross margin total for the farm.

An illustration of the effect of varying a critical parameter, is given below:

Enterprise	Yield/ ha	Price	Gross Revenue	Direct Costs	Gross Margin
Wheat	4.0 t	215	860	200	680
	5.0 t	215	1,075	205	870
Barley	4.5 t	140	630	170	460
	4.5 t	185	832	170	662
	5.5 t	150	825	185	640
	5.5 t	200	1,100	185	915
Field Peas	2.7 t	250*	720	400	320
	2.7 t	325*	925	400	525
Vining Peas	3.5 t	180*	630	260	370
	5.0 t	180*	900	260	640
Garden Peas	2.0 t	250*	500	280	220
	3.0 t	250*	750	290	460
White Clover	350 kg	2.00	700	370	330
	550 kg	3.00	1,650	435	1,215
Ryegrass	675 kg	1.00	675	440	230
	550 kg	1.50	825	430	395
	800 kg	1.50	1,200	460	740
Cocksfoot	340	2.00	680	340	340
	340	3.00	1,020	340	680
	240	3.00	720	300	420
	240	3.50	840	300	540
Pasture	14SU	\$15 GM			210
	14SU	\$20 GM			280
	18SU	\$25 GM			450

\* plus hay/straw

Other Selected Examples of Crop Gross Margins for 1981:

(xi) Vining Peas:

Direct Costs (per hectare):

Cultivation: 6 hrs @ \$6.70/hr	\$ 40.20
Seed: 300 kg/ha @ \$17.75/50 kg	\$ 95.80
Fertiliser: 250 kg/ha. Potash molybdate super @ \$168.85/tonne	\$ 38.30
Spraying: 5 litres weed spray applied	\$ 36.20
Irrigation: 2 irrigations @ \$15/ha/ irrigation	\$ 30.00
Baling: 45 bales @ 45c/bale (contract)	\$ 20.25
TOTAL DIRECT COSTS	\$266.70

Gross Revenue:

Yield: 5.0 t/ha	
Price: \$18c/kg @ average tenderometer reading of 110.	
Income: 5.0 x \$145.50	\$727.50
Plus 45 bales pea straw @ \$2.50/bale	\$112.50
TOTAL REVENUE	\$840.00
GROSS MARGIN (approximately)	\$580/ha

(xii) Garden Peas (William Massey contract):

Direct Costs: (per hectare)

Cultivation: 5.5 hrs @ \$6.70/hr	\$ 36.85
Seed: 270 kg/ha @ \$360/tonne	\$ 97.20
Fertiliser: 250 kg/ha Mo super- phosphate @ \$145.40	\$ 36.35
Spraying: M.C.P.B. @ 4.5 litres/ha	\$ 30.20
Heading: 2.25 hrs @ \$14.96	\$ 33.66
Irrigation: 2 irrigations @ \$15.00/ha/irrigation	\$ 30.00
Cartage: 3 boxes out and in. Own truck	\$ 12.00
Box Hire: \$5.50/box	\$ 16.50
TOTAL DIRECT COSTS	\$292.80



Gross Revenue:

Yield: 3.0 t/ha	
Price: \$250/tonne (in boxes)	
Income: 3.0 t x \$250	\$750.00
Plus 86 bales of pea straw	
@ 75c/bale	\$ 74.50
 TOTAL REVENUE	 \$814.50
GROSS MARGIN (approximately)	\$521/ha

(xiii) Spring Wheat (Oroua)

Direct Costs (per hectare):

Cultivation: 6.5 hrs @ \$6.70/hr	\$ 43.55
Seed: 170 kg/ha Certified 1st	
Generation @ \$290/t plus	
royalty \$25/t plus treating, e.g.	
Baytan @ \$48.65/t	\$ 61.82
Fertiliser: 200 kg/ha superphosphate	
@ \$136.85/t applied	\$ 27.37
Heading: .75 hrs/ha @ \$14.96/hr	\$ 11.21
Raking and Ploughing Firebreak:	\$ .20
Cartage: from field to silos @ \$2/ha	\$ 2.00
from silo to rail @ \$5.43/t	\$ 21.72
 TOTAL DIRECT COSTS	 \$161.00

Gross Revenue:

Yield: 4.0 t/ha	
Price: \$203 plus storage (Aug.)	
\$16.75 less levies 91c/tonne	
Income: 4.0 t x \$219.75	\$864.44
 TOTAL REVENUE	 \$864.44
GROSS MARGIN (approximately)	\$703.44

(xiv) Barley (malting):

Direct Costs (per hectare):

Cultivation: 6.5 hrs @ \$6.70/hr	\$ 43.55
Seed: 130 kg/ha @ \$360/t	\$ 46.80
Fertiliser: 200 kg/ha superphosphate	
@ \$136.85/t	\$ 27.37
Weed Spray: M.C.P.A. applied	\$ 21.20
Heading: 1.25 hrs/ha @ \$14.96/hr	\$ 18.69

Cartage: 4.5 t, 20 km	\$ 7.86
Firebreak:	\$ .25
TOTAL DIRECT COSTS	\$165.72
Gross Revenue:	
Yield: 4.5 t/ha	
Price: \$135/tonne (South Island)	
Income: 4.5 t x \$185	\$832.50
TOTAL REVENUE	\$832.50
GROSS MARGIN (approximately)	\$667.00

(xv) Lucerne:

Establishment Costs (per hectare):

Cultivation: 13 hrs/ha @ \$6.70	\$ 87.10
Seed: 5 kg/ha @ \$6.50/kg	\$ 32.50
Fertiliser: 250 kg/ha lime reverted superphosphate @ \$129.50/t (including cartage and spreading)	\$ 32.38
Lime: 2.5 t/ha @ \$14.50/t on the ground	\$ 36.25
Seed Innoculation: 5 kg	\$ 3.00
TOTAL ESTABLISHMENT COSTS	\$191.23

(a) Dryland - Stand life = 9 years	
Therefore Annual Establishment Costs =	\$ 21.25
Annual Costs:	
Fertiliser: 250 kg/ha lucerne fertiliser @ \$155.00/t (including cartage and spreading)	\$ 38.73
Heavy Roll: 0.6 hr/ha @ \$6.70/hr	\$ 4.02
Weed Spray: 2, 4-DB @ 4 litres/ha @ \$3.94/litre	\$ 15.76
plus .33 hr/ha @ \$6.70/hr (spraying)	\$ 2.23
TOTAL ANNUAL COSTS (including establishment)	\$ 81.99

Annual Revenue:

Yield: 6000 kg/D.M./ha/year =  
11.54 s.u./ha

Income: \$25.07/s.u. x 11.54 s.u./ha \$289.30

TOTAL ANNUAL REVENUE \$289.30

GROSS MARGIN (approximately) \$207.00

(b) Irrigated (for Dehydration) -

Stand life = 4 years

Therefore Annual Establishment

Costs = \$ 47.80

Annual Costs:

Fertiliser: 500 kg 30% Potash

Boron Super @ \$170.95/t (including  
cartage and spreading) \$ 85.50

Irrigation: 6 irrigations @ \$15/ha/  
irrigation \$ 90.00

TOTAL ANNUAL COSTS

(including establishment) \$223.30

Annual Revenue:

Yield: 1300 kg/ha (4 cuts)

Price: \$65/t dehydration contract

Income: 13 t x \$65/t \$845.00

TOTAL ANNUAL REVENUE \$845.00

GROSS MARGIN (approximately) \$622.00

(xvi) Cocksfoot Seed:

Direct Costs (per hectare):

Average Renewal/hectare \$ 40.00

Fertiliser: 375 kg/ha sulphate of  
ammonia @ \$255/t (including cartage  
and spreading) \$ 95.62

Windrowing: \$50/ha (contract) \$ 50.00

Heading: 1.25 hrs/ha @ \$14.96/hr \$ 18.70

Sacks: 10 sacks @ \$1.41 each \$ 14.10

Cartage: Box hire plus cartage out  
and in \$ 7.50

Consolidated Dressing and Handling  
Charge:

450 kg F.D. @ 25c/kg \$112.50

TOTAL DIRECT COSTS \$338.42

Gross Revenue:

Yield: 450 kg/ha F.D.; 25% dressing loss; 340 kg/ha M.D. Price: \$3.00/kg M.D. Income: 340 kg x \$3/kg	\$1,020.00
TOTAL REVENUE	\$1,020.00
GROSS MARGIN (approximately)	\$682.00

(xvii) Lupins:

Direct Costs:

Cultivation: 4 hrs @ \$6.70/hr	\$ 26.80
Seed: 100 kg/ha (Uniharvest) @ \$250/tonne	\$ 25.00
Fertiliser: 125 kg/ha reverted superphosphate @ \$129.65/t	\$ 16.21
Weed Control: e.g. M.C.P.B. @ 5.6 litres/ha @ \$5/litre	\$ 28.00
plus .33 hr/ha spraying @ \$6.70/hr	\$ 2.23
Pest Control: e.g. Metasystox 25 EC (Demeton-S-methyl 25% a.i.) 2 litres/ha @ \$13.50/litre (including spraying)	\$ 27.00
Irrigation: 2 irrigations @ \$15/ha/ irrigation	\$ 30.00
Heading: 2.5 hrs/ha @ \$14.96/hr	\$ 37.40
Box Hire: 2.04 boxes (1.225 tonnes/ box) @ 5.50/box	\$ 11.20
Cartage: Own truck	\$ 12.00
TOTAL DIRECT COSTS	\$215.84

Gross Revenue:

2.5 tonnes/ha @ \$250/tonne	\$625.00
TOTAL REVENUE	\$625.00

With gross revenue of approximately \$625 and direct costs of approximately \$216 the gross margin of this crop is about \$409/ha.

(xviii) Main Crop Potatoes:

Revenue:

3 t seed @ \$ 95/t	\$ 265.00
27 t table @ \$120/t	\$3,240.00
30 t TOTAL	\$3,505.00

Expenditure:

Cultivation: 10 hours @ \$7/hour	\$ 70.00
Seed: 2.5 tonnes @ \$220/t	\$ 550.00
Cutting & dipping: 2.5 t @ \$5/t	\$ 12.50
Planting: 3.5 hours/ha @ \$25/hour (contract)	\$ 87.50
Fertiliser: 125 kg/ha Nitrophoska @ \$1,050/t applied	\$ 131.00
Weed Control: e.g. Metribusin 1 kg/ha @ \$61.25/kg plus application \$2.85/ha	\$ 64.10
Light harrowing: 2 ha/hr @ \$7/hr	\$ 3.50
2 interrow grubblings 1.5 ha/hr @ \$7/hr	\$ 9.30
Moulding (ridging): 3 hrs/ha @ \$7/hr	\$ 21.00
Pest Control: Aphids (e.g. Metasystox) 200 mls/ha @ \$13/l plus applications @ \$2.85/ha	\$ 5.40
Blight (e.g. Ridomil) 2 l/ha @ \$39/l plus application @ \$2.85/ha	\$ 80.50
Roguing: \$28/ha (contract)	\$ 28.00
Haulm Destruction: (e.g. Reglone) 1.5 l/ha @ \$14/l applied	\$ 21.00
Digging and Picking: 85c/bag (contract) 14 bags/t (30t)	\$ 357.00
Grading: (table only) 27 t - 378 bags (14 bags/t) 65c/bag	\$ 245.00
Sacks: 420 x \$1.20	\$ 504.00
Cartage: 420 sacks 32 km @ 76c/sack	\$ 360.00
Registration: \$8/ha	\$ 8.00
Levies: 90c/t (table only)	\$ 24.00

TOTAL EXPENDITURE \$2,581.70

Dryland - GM = \$823.30/ha

Irrigated GM

Cost increase of 4 irrigations - approx. \$40.00

Yield of 50 tonnes:  
 Increase variable costs \$49 (approx.)  
 per tonne \$ 980.00  
 \$1,020.00

Income increases by:

18 t @ \$120	=	2,160
2 t @ \$ 95	=	<u>180</u>
		2,340
	-	1,020
		1,320
	+	<u>923</u>
		<u>2,243</u>

(xix) Early Potatoes

Gross Returns:  
 3.75t @ \$750/t 2,810

Variable Production Costs:	
Seed: 900 kg/ha @ 50c/kg	110
Fertiliser: base and side dressings	50
Sprays: Gusathion, copper oxychloride, prometryn	15
Cultivation and fertiliser application, 3 hours	15
Planting, 2 hours	10
Spraying, 4 hours	20
Weed cultivation, 5 hours	<u>25</u>

Total Variable Production Costs: 245

Variable Marketing and Harvesting Costs:	
210 x 18 kg bags @ 50c	105
Harvesting: 4 hours	20
Freight: 4 trips @ 60c/km	130
Commission @ 10%	<u>280</u>

Total Variable Marketing and Harvesting Costs: 525

TOTAL COSTS: 780

Gross Margin: 2,030

(xx) Beans

Gross Returns:  
3t @ 90c/kg/\$900/t 2,700

Variable Production Costs:  
Seed: 60 kg/ha @ \$4.50/kg 70  
Fertiliser: base plus side dressing 25  
Sprays: Metasystox, benomyl, propineb x 2 applications 30  
Cultivation and fertiliser application - 2 hours 10  
Sowing - 1 hour 5  
Weeding and spraying - 5 hours 25

Total Variable Production Costs: 170

Variable Marketing and Harvesting Costs:  
170 x 18 kg apple cases @ \$1.50 300  
Freight: 3 trips @ 60c/km 100  
Commission @ 10% 270

Total Variable Marketing and Harvesting Costs: 670

TOTAL COSTS 840

Gross Margin: 1,860

(xxi) Carrots

Gross Returns:  
5.5t @ 75c/kg/\$750/t 4,125

Variable Production Costs:  
Seed: 3 kg/ha @ \$44/kg 35  
Fertiliser: base dressing 25  
Sprays: disolphoton, copper oxychloride, prometryn 15  
Cultivation, fertiliser application and sowing - 2 hrs 10  
Spraying: 3 hours 15

Total Variable Production Costs: 105

Variable Marketing and Harvesting Costs:  
310 x 18 kg bags @ 50c 155  
Ploughing up carrots - 1 hour 5  
Freight: 5 trips @ 60c/km 165  
Commission: 10% 410

Total Variable Marketing and Harvesting Costs:		735
TOTAL COSTS		<u>840</u>
Gross Margin:		<u>3,285</u>
(xxii)	Late Tomatoes	
Gross Returns:		
8t @ \$2200/t		<u>17,600</u>
Variable Production Costs:		
Seed:	1 kg/ha \$660/t	165
Fertiliser:	base and side dressing	80
Sprays:	Carbaryl, Metasystox, propineb x 3	15
Cultivation and fertiliser	application - 2 hours	10
Sowing	- 1 hour	5
Spraying	- 5 hours	25
Weed Cultivation	- 5 hours	25
Total Variable Production Costs:		325
Marketing and Harvesting Costs:		
1,800 x 4.5 kg tomato boxes plus liners, \$400/1,000		600
Freight/cartage: 5 trips @ 60c/km		165
Commission @ 10%		<u>1,760</u>
Total Variable Marketing and Harvesting Costs:		2,525
TOTAL COSTS		<u>2,850</u>
Gross Margin:		<u>14,750</u>
(xxiii)	Onions	
Gross Returns:		
5.5t @ 95c/kg, \$950/t		5,225
Variable Production Costs:		
Seed:	5 kg/ha @ \$100/kg	125
Fertiliser:	base and side dressings	60
Sprays:	Metasystox, zineb, prometryn	15



Cultivation, fertiliser application and sowing,	
3 hours	15
Spraying, 3 hours	15
Cultivation - weeding: mechanical and spraying - 4 hours	<u>20</u>

Total Variable Production Costs:	250
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Variable Marketing and Harvesting Costs:	
310 x 18 kg plastic bags @ 50c	155
Harvesting: lifting and under-cutting, 2 hours	10
Freight: 5 trips	165
Commission	<u>520</u>

Total Variable Marketing and Harvesting Costs:	850
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TOTAL COSTS	<u>1,100</u>
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Gross Margin:	<u>4,125</u>
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(xxiv) Whangaparoa Crown Pumpkins

Gross Returns:	
10t @ \$700/t	<u>7,000</u>

Variable Production Costs:	
Seed: 3 kg/ha @ \$28/kg	20
Fertiliser: base and side dressings	25
Sprays: Malathion, Mancozeb x 2	10
Cultivation, fertiliser application and sowing - 5 hours	25
Cultivation for weed control, 4 hours	20
Spraying, 2 hours	<u>10</u>

Total Variable Production Costs:	110
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Variable Marketing and Harvesting Costs:	
560 x 18 kg plastic bags @ 50c	280
Freight/cartage: 5 trips	165
Commission	<u>700</u>

Total Variable Marketing and Harvesting Costs:	1,145
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TOTAL COSTS	<u>1,255</u>
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Gross Margin:	<u>5,745</u>
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(xxv) Buttercup Squash

Gross Returns:	
5t @ \$1,250/t	<u>6,250</u>
Variable Production Costs:	
Seed: 3 kg/ha @ \$110/kg	330
Fertiliser: base and side dressings	25
Sprays: Malathion, Mancozeb, x 2	10
Cultivation, fertiliser application and sowing, 5 hours	25
Cultivation for weed control, 4 hours	20
Spraying, 2 hours	<u>10</u>
Total Variable Production Costs:	420
Variable Marketing and Harvesting Costs:	
1,000 x 5kg bags @ 40c	400
Freight/cartage - 2 trips	65
Commission	<u>625</u>
Total Variable Marketing and Harvesting Costs:	1,090
TOTAL COSTS	<u>1,510</u>
Gross Margins:	<u>4,740</u>

(xxvi) Sweet Corn

Gross Returns:	
25,000 cobs @ \$0.10	<u>2,500</u>
Variable Production Costs:	
Seed: 10 kg/ha @ \$4/kg	10
Fertiliser: base and side dressings	47
Sprays: pesticide and fungicide x 2 applications	20
Cultivation, sowing, fertiliser application: tractor hours = 2 hours	10
Weeding and cultivation: tractor hours = 2 hours	<u>10</u>
Total Variable Production Costs:	100

Variable Marketing and Harvesting Costs:	
170 x 18 kg apple cases @ \$1.50	250
Freight @ \$0.60c/km, 3 trips	100
Commission - 10%	<u>250</u>

Total Variable Marketing and Harvesting Costs	600
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TOTAL COSTS	<u>700</u>
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Gross Margin:	<u>1,800</u>
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(xxvii) Garlic

Gross returns:	
55t/ha @ \$1.44/kg (average)	<u>7,920</u>
N.B. per tonne harvested:	
.625 t for export	
.375 @ \$1.50 per kg	
.25 @ \$1.80 per kg	
.187 t local market @ \$2.00 per kg	
.188 t processing @ \$0.30 per kg	

Variable Production Costs:

Seed bed preparation:

Grubbing 2 x @ \$15 per ha	30
Cultivation @ \$15 per ha	<u>15</u>
	45

Seed: 865 kg per ha @ \$1.90 per kg	1,643
Clove division : 150 hours @ \$4.50 per hour	600

Planting costs : (planter and three persons)	
2.52 hours @ \$25 per hour	63
Sprays: Treflan 2 l @ \$8.50 per kg	17
Preglone \$10.22 per kg	15
Totrill 2.5 l per ha (2-3 x) @ \$18 per kg	90

Fertilisers - side dressing of sulphate of ammonia 2 x 150 kg per ha (300 kg)	57
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Spray and fertiliser application	
Spraying \$10 per ha (4 x)	40
Fertiliser \$20 per ha (2 x)	40
Inter row cultivation \$25	25
Irrigation	137

Variable Marketing Costs:

Harvesting:

Repairs and maintenance	137
Labour 75 hours per ha	
@ \$4 per hour	300
Grading 20c per kg (average)	1,100
Materials (twine, bags, boxes)	
8c per kg	440

TOTAL VARIABLE COSTS 4,149

Gross Margin: 3,771

5.2.3 Sheep Gross Margins

(Prepared by M.J. McGregor, December 1981)

Introduction

The following two examples show relativity between the same breed of sheep (Corriedale) but under different management policies. It must be stressed that the prices and costs used approximate those ruling at 22 December 1981.

The gross margins should therefore be adjusted as policies, prices and cost parameters, change.

Note: Gross margins are calculated for 1000 ewes. This allows flock composition, deaths, sales and purchases to be shown as whole numbers. The gross margins calculated only apply to small changes in stock numbers as changes in the order of 1000 ewes would require additional labour, feed, etc.

Example 1.

This example gross margin is for a Corriedale 2 year flock system, buying 5 year old ewes annually, which are all mated to an export lamb sire.

Production Parameters:

110% lambing (survival to sale); 10% first year ewes culled; death rate 6%; ewes clip 4.0 kg wool per head; lambs not shorn.

Sheep Reconciliation:

# SHEEP RECONCILIATION

Stock Units Opening Rate 1/7/81	Class of Stock Breed	Opening Nos. @ 1/7/81	Nat. Incr.	Killed	Deaths and Losses	Sales	Purch- ases	Closing Nos. @ 30/6/82	Class of Stock	Closing s.u.'s 30/6/82
	Ewes									
	Lambs		550							
0	Unmated Hgts	0				550		0	Unmated Hgts	0
	Mated Hgts								Mated Hgts	
	Ewes: 2th								Ewes: 2th	
	4th								4th	
	6th								6th	
	4yr								4yr	
543	5yr	543					543	543	5yr	543
457	6yr	457		10	32	32		457	6yr	457
	Aged				27	420		0	Aged	
1000	TOTAL EWES	1000						1000	TOTAL EWES	1000
	Wethers - m.s. and wether Lambs		550	10						
6	Hgts	10		10		530		10	Hgts	6
	2th							0	2th	
	Aged								Aged	
6	TOTAL WETHERS	10						10	TOTAL WETHERS	6
	Rams									
	Lambs									
	Hgts								Hgts	
4	2ths	5					5	5	2ths	4
12	Aged	15		4	1			15	M.Age	12
16	TOTAL RAMS	20						20	TOTAL RAMS	16
1022	TOTAL SHEEP	1030	1100	34	60	1554	548	1030	TOTAL SHEEP	1022
	(a)	(b)	(c)	(d)	(e)	(f)	(g)			

LAMBING PERFORMANCE (Based on Ewes to Ram)

Tailing = NA % Survival to Sale = 110 %

DEATH RATES

Ewes = 6 % Hgts = NA % Lambs = NA Rams = 5 % Total (1) must = Total (2)

CULLING RATES

Ewes = 10%

Rams = 25%

RECONCILIATION

(1) Totals a + b + f = 2678

(2) Totals c + d + e + g = 2678

Gross Revenue (per 1000 ewes):	\$ c
Lamb sales - 1,080 prime lambs @ \$20.88 (13.5 kg lamb meat @ 145c/kg = \$19.58 plus skin and 0.75 kg woolpull @ \$1.30)	22550.40
Cull ewe sales - 474 cull ewes to works @ \$12.04 (22.5 kg ewe meat @ 50c/kg = \$11.25 plus skin and 0.5 kg woolpull @ \$0.79)	5706.96
Wool sales - 4000 kg @ \$2.87 per kg net (1000 sheep @ 4.0 kg allowing for deaths. Wool price is gross less 33c/kg)	<u>11480.00</u>
GROSS REVENUE	\$39737.36
Direct Costs (per 1000 ewes):	
Replacement purchase - 543 @ \$18.00	9774.00
Shearing (shearers only) - 1000 sheep @ \$60/100	600.00
Tup crutch - 457 sheep @ \$20/100	91.40
Main crutch - 1015 sheep @ \$28/100	284.20
Drenching - 2 drenches @ 12c/dose for 1015 Sheep (ewes are drenched once before tupping and again before lambing) - 1100 lambs : 50% drenched once, 30% drenched twice, lamb drench 5.7c/dose	243.60
Vaccination - triple vaccine, 980 ewes @ 11.75 c/sheep	50.16
Eartags, footrot and docking	115.15
Dipping - purchased ewes have been dipped, 457 ewes @ 22c/sheep	410.00
Woolshed expenses - including woolpacks, twine, glue, emery paper and shearing plant expenses approximate cost = 25c/head	100.54
Ram costs - 2 per 100, 4 year life, 5 @ \$100/ram	250.00
Cartage - prime lambs to works, 1080 @ \$0.55 each	500.00
- cull ewes to works, 474 @ \$0.69 each	594.00
- replacement ewes from North Canterbury, 543 @ \$1.26 each	327.06
- wool, 4000 kg @ 2.2c/kg	88.00
(Note: All cartage based on 32 km travel except for replacement ewes, 80 km)	
TOTAL DIRECT COSTS	\$14112.29
GROSS MARGIN PER 1000 EWES	\$25625.07
GROSS MARGIN PER EWES (÷ 1000)	\$25.63
GROSS MARGIN PER STOCK UNIT (÷ 1022)	\$25.07

### Summary:

With a gross revenue of approximately \$39.75 per ewe and expenses of about \$14.10 per ewe, the gross margin is in the vicinity of \$25.65 per ewe for a prime lamb 2 year flock system. The direct costs per ewe (excluding replacement cost) are approximately \$4.34.

The gross margin per stock unit is calculated by dividing the gross margin (per 1000 ewes) by the total stock units (1022 stock units). This gives a value of \$25.07 per stock unit.

### Example 2.

This example gross margin is for a Corriedale flock, selling genuine 5 year old ewes and breeding own replacements. Ewes are on hand for 4 lambings. All ewes are mated to a Corriedale ram. Hoggets are culled as two tooth (20%). Surplus ewe lambs are sold store. 80% of the wether lambs are sold prime for export, the remainder (20%) being sold as stores. Lambs are not shorn but hoggets are.

### Production parameters:-

93% lambing; 5% ewe culling; 20% two tooth culling; death rate 4%; ewes clip 4.1 kg of wool as do the hoggets.

### Sheep Reconciliation:-

# SHEEP RECONCILIATION

Stock Units Opening Rate 1/7/81	Class of Stock Breed	Opening Nos. @ 1/7/81	Nat. Incr.	Killed	Deaths and Losses	Sales	Purch- ases	Closing Nos. @ 30/6/82	Class of Stock	Closing s.u.'s 30/6/82
	Ewes									
	Lambs		465							
226	0.6 Unmated Hgts	376				89		376	Unmated Hgts	226
	Mated Hgts				15	75			Mated Hgts	
286	1.0 Ewes: 2th	286						286	Ewes: 2th	286
261	1.0 4th	261			11	14		261	4th	261
237	1.0 6th	237			11	13		237	6th	237
216	1.0 4yr	216			9	12		216	4yr	216
0	1.0 5yr	0		7	9	200		0	5yr	0
	6yr								6yr	
	Aged TOTAL EWES	1000						1000	Aged TOTAL EWES	1000
	Wethers - m.s.									
	Lambs		465							
6	0.6 Hgts	10		10		455		10	Hgts	6
0	0.8 2th	0						0	2th	
	Aged TOTAL WETHERS	10						10	Aged TOTAL WETHERS	6
	Rams									
	Lambs									
	Hgts								Hgts	
4	0.8 2ths	5				5		5	2ths	4
12	7.8 Aged	15		4	1			15	M. Age	12
16	TOTAL RAMS	20						20	TOTAL RAMS	16
1248	TOTAL SHEEP	1406	930	21	56	858	5	1406	TOTAL SHEEP	1248
		(a)	(b)	(c)	(d)	(e)	(f)	(g)		

LAMBING PERFORMANCE (Based on Ewes to Ram)

Tailing = NA % Survival to Sale = 93 %

DEATH RATES

Ewes = 4 % Hgts = 4 % Lambs = NA % Rams = 5 % Total (1) must = Total (2)

CULLING RATES

Ewes= 5 % Hgts = 20% Lambs = NA% Rams =25%

RECONCILIATION

(1) Totals a + b + f = 2341

(2) Totals c + d + e + g = 2341



Gross Revenue (per 1000 ewes):-	\$	c
Lamb sales - 364 prime lambs @ \$20.88		
(13.5 kg lamb meat @ 145c/kg = \$19.58		
plus skin and 0.75 kg woolpull @ \$1.30)	7600.32	
- 180 store lambs @ \$13.00	2340.00	
Cull ewe sales - 75 two tooths @ \$28.00	2100.00	
- 189 five year olds in		
yards @ \$18.00	3402.00	
- 50 cull ewes to works		
@ \$12.04	602.00	
(22.5 kg ewe meat @ 50c/kg = \$11.25		
plus skin and 0.5 kg woolpull @ \$0.79)		
Wool sales - 4100 kg @ \$2.87 per kg net		
(1000 sheep @ 4.1 kg allowing for deaths.		
Wool price is gross less 33c/kg)	11767.00	
- 1558 kg @ \$2.87 per kg net	4471.46	
(380 hoggets @ 4.1 kg allowing for deaths)		
GROSS REVENUE	\$32282.78	

Direct Costs (per 1000 ewes):-

Shearing (shearers only) - 1000 sheep @ \$60/100	600.00
- 380 hoggets @ "	228.00
Tup crutch - 990 ewes @ \$20/100	198.00
Main crutch - 990 ewes @ \$28/100	277.20
Drenching - 2 drenches @ 12c/dose for 1015	
sheep (ewes are drenched once before	
tupping and again before lambing)	121.80
- lambs, 1850 doses @ 5.7c/dose	
(replacements drenched 3 times, stores	
twice, and primes once)	105.45
Vaccination - triple vaccine, 980 ewes	
@ 11.75c/sheep	115.15
- triple vaccine, 370 hoggets	
@ 11.75c/sheep	43.48
Eartags, footrot and docking	410.00
Dipping - 990 ewes @ 22c/head	217.80
- 376 hoggets @ 22c/head	82.72
- 660 lambs @ 22c/head	145.20
Woolshed expenses - including woolpacks,	
twine, glue, emery paper and shearing	
plant expenses, approximate cost	
= 25c/ewe and 14c/hogget	303.20
Ram costs - 2 per 100, 4 year life,	
5 @ \$100/ram	500.00

Cartage - prime lambs to works, 364 @ \$99 ea.	360.36
- store lambs to yards, 180 @ \$0.90 ea.	162.00
- cull two toothed and five year old to yards, 264 @ \$1.44 each	380.16
- cull ewes to works, 50 @ \$1.44 ea.	72.00
- wool, 5658 kg @ 4.8c/kg	271.58

(Note: All cartage rates are based on 97 km travel, the distance from North Canterbury to Christchurch.)

Selling charges - Yard fees, 444 sheep @ 26c/sheep	115.44
- Commission, \$7842 @ 4.75%	372.50

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TOTAL DIRECT COSTS	\$5082.04
GROSS MARGIN PER 1000 EWES	\$27200.74
GROSS MARGIN PER EWE ( $\div$ 1000)	\$27.20
GROSS MARGIN PER STOCK UNIT ( $\div$ 1248)	\$21.80

#### Summary:

The gross margin per stock unit for a breeding own replacement flock is \$3.27 less than that of an export lamb policy. The factors having the greatest effect on the two examples presented are:

- (i) Lambing percentage
- (ii) Lamb sale price
- (iii) Wool clip per head
- (iv) Wool price
- (v) Cull ewe price

It is stressed that the example gross margins use one set of price and production parameters and when used in practice some account must be taken of likely variations to give a range of expectations.

It is interesting to note the comparison with past years:

Gross Margin Per Stock Unit				
	1979/80	1980/81	1981/82	% Change (from last year)
Two year flock	18.17	19.40	25.07	+ 29.2%
Breed own replacements	19.86	18.85	21.80	+15.6%

The breeding own replacements policy shows wider fluctuations in the gross margin than the two year flock policy. The two year flock farmer is able to work on a margin for purchase and sale of ewes where as the store sheep farmer has no such margin available.

Again, it must be stressed that these gross margins are examples only. As the price, cost, and production parameters change throughout the season, the gross margins must be revised.

#### 5.2.4 Beef Cattle Gross Margins

(Revised by R.H. Shelton, January 1982)

##### (i) Introduction:

The livestock market in New Zealand is divided into three main sections. These are:

- (a) Store sales between farmers of breeding and fattening stock,
- (b) Schedule sales of stock to freezing companies for export to world markets, and;
- (c) Local trade sales of prime quality stock to butchers for sale to New Zealand consumers.

Each of these main markets, though operating on different supply and demand schedules, is related to the other and tends, even if for only short periods, to be influenced by demand from the other sections of the market.

##### (ii) Factors Influencing Store Sales:

Though sale values fluctuate from sale to sale and between districts for the same class of stock, in general values tend to follow broad trends over periods of 2-3 years. Factors influencing prices paid are:

- (a) General profitability of finishing or breeding from the class of stock concerned at the current schedule or local trade price levels. In cases of forward stock, export schedule values can virtually under-write the sale, setting minimum price levels.
- (b) Trend of schedule or local trade prices and the effect of probable changes on forecasting

profit margins.

- (c) Availability of feed, and effect of climatic conditions on feed. Generally New Zealand does not experience prolonged periods of drought or feed shortage, and depression of stock prices tends to be transitory frequently affecting sale values for only a part of the season.
- (d) Availability of finance and credit.
- (e) The level of confidence for say beef, sheep or dairying by the farming community and the people who service agriculture.

(iii) Factors Influencing Schedule Values:

Schedule prices are assessed by exporters who sell to world wholesale markets. These companies follow world market prices, particularly U.K., U.S.A., Japan and the Middle East (Iran and Iraq) and assess the level at which they can set their prices to attract prime stock from farmers, meet all costs and attain a profit. Factors which influence price levels are:

- (a) World Market conditions - supply and demand and price trends.
- (b) Tariffs and quotas.
- (c) Shipping and killing charges.
- (d) Time and place of sale.
- (e) Industrial unrest and effect of stoppages.
- (f) To a limited extent competition between local trade and exporters for prime stock may for short periods inflate schedule values. In general during the winter and early spring little or no prime cattle are sold for export.
- (g) The Supplementary Minimum Prices (S.M.P.) guaranteed by the government.

At times, local trade may purchase prime sheep and cattle through the yards at below schedule value due to the inability of exporters to process certain classes of stock because of industrial unrest or limited works capacity.

(iv) Factors Influencing Local Trade Values:

Approximately 30% of all beef slaughtered is consumed in New Zealand. In the South Island, because of the lower cattle population relative to people, about 50% of all cattle slaughtered are used for local trade. It is suggested, however, that up to 60% of all prime beef is consumed within New Zealand. Most of this stock is bought by buyers for butchers either on the farm or in the prime pens at sale yards, i.e. about 50% of the Christchurch beef requirement is bought through Addington with the remainder bought privately on farms or supplied to the Freezing Company.

In some instances, exporting companies buy stock for wholesale to butchers. In periods of shortage of prime cattle, practically all prime quality beef is bought for local consumption at values above export schedule. Thus the supply demand schedule for local trade works independent to the export schedule. Practically all prime stock in winter and early spring are bought for the local trade with peak prices usually in October. Once feed supplies ease and most farmers are able to produce prime stock, the supply exceeds local trade requirements and price levels fall to export schedule values.

The influence of local trade buying is greatly affected by seasonal conditions. In general, local trade begins to have an effect on prime stock prices in May, but in periods of shortage may begin in March or conversely as late as July. October appears to be the peak month with demand influence falling rapidly in November and December. Local trade values usually range from 10 cents/kilogram of carcass above schedule for winter months to 15-20 cents/kilogram above schedule in September-October. Usually stock are bought by eye assessment of weight and it is an advantage to know actual live weight when selling in the paddock. A further point to note is that abattoir weights are taken when the carcass is hot, and includes the channel fats which can increase the killing out percentage by 2% over export weight.

Prices for beef in the 1981 season have varied considerably as indicated by Table 1 which provides a summary of the monthly trends. The influence of the Supplementary Minimum Price can be clearly

seen. The SMPs became operative from 1st October 1981.

(v) Forecasting of Future Beef Cattle Values for Budgetary Purposes:

Forecasting the future outcome of events still to occur must be undertaken with reservation. However, for those who trade goods or livestock, the future course of prices is of paramount interest. For budgetary purposes, conservative prices with high probability of realisation are usually adopted. The purpose of the following illustrations is to endeavour to assist in a greater understanding to the influence of changing export schedule values upon cattle prices at various stages of livestock production.

Table 1

SCHEDULE MOVEMENTS IN THE SOUTH ISLAND  
Steer P1 220.5 - 270 kg (220.5 - 245 kg in 1979)  
(cents/kilogram)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
January	71	74	29	55	62	57	105	127	120
February	73	72	29	55	67	59.5	111.5	133	120.5
March	80	65	29	55	63	60.5	131.5	114.5	120.5
April	73	54	39	55	59	69.5	144.5	109	120
May	71	51	39	55	59	69.5	134.5	108	120
June	69	41	-	55	57.5	74.5	127.5	109	120
July	-	45	-	55	57.5	79.5	106.5	109	120
August	-	45	-	55	57.5	79.5	111.5	125	120
September	-	39	-	55	57.5	84.5	121.5	125	120
October	-	38	55	55	57	87.5	126.5	120	143
November	76	35	55	55	57	87.5	136.5	127	143
December	78	31	55	56	57	95.0	141.5	127	143

NOTE: 1973 figures are for GAQ; 1974 figures are for Chiller Grade.

A brief examination of the price movement for the P1 grade steer over the last four years indicates changes from 57c to 143c per kg of carcase, with substantial movement within each year. Such major changes in the schedule have a significant effect upon the value of store cattle, and buyers need to take these changes into account when assessing cattle for purchase.

One technique which can be used to study the effect of changing schedules in the "schedule equivalent" approach. This assumes that the assessed carcass weight of an animal at various stages of growth is worth a particular schedule price which gives an indication of the value of the animal at that stage, and the margin in values between stages.

Table 2 illustrates this technique using four assumed schedule levels ranging from \$50 to \$200 per 100 kg and expressing the effect of this on the value of a beast as a weaner, yearling and at final slaughter at 20 months. Killing out percentage is assumed to be 50% for weaner and yearlings, and 53% at 20 months.

Table 2

The Effect of Four Different Schedule Levels on the Value Margin of a Steer using the Schedule Equivalent approach (S.E.)

Schedule Value per 100 kg	S.E. Value of Animal			Margin Between Stages		
	Weaner	Yearling	20 mth	Weaner	Yearling	Weaner
	L.W. 200	L.W. 300	L.W. 434	to	to	to
	kg	kg	kg	Yearling	20 mth	20 mth
	C.W. 100	C.W. 150	C.W. 230			
\$50	50	75	115	25	40	65
100	100	150	230	50	80	130
150	150	225	345	75	120	195
200	200	300	460	100	160	260

Market Premium, Discount, Appreciation, Depreciation. In practice however, the schedule equivalent approach needs to consider the effect of Market premium, discount, Market appreciation and depreciation.

1. Market premium, occurs where buyers, particularly in years of high demand, pay more than the schedule equivalent price to breeders for weaners and yearlings in order to obtain stock. This premium varies from year to year as indicated in tables 3 to 6, with premiums of up to one third of the assessed margin using the schedule equivalent, i.e. a purchaser operating on a \$100 schedule with a schedule equivalent margin from weaner to 20 months of \$130 per head, may pay one third of this margin or approximately \$40 as a premium for weaners, pay \$140 per head or 140c per kg of carcass.

2. Market discount is the reverse of the premium. This occurs as a result of poor trading due to lack of demand or where farmers have a pessimistic outlook for prime cattle prices, and buyers pay less than Market schedule.
3. Market appreciation occurs when the schedule moves above the purchase price, and a bonus return is received, i.e. where cattle are bought for \$100 per 100 kg and sold for \$130, a bonus of \$30 per 100 kg on the original weight is achieved.
4. Market depreciation applies when the schedule falls below the purchase price, on a kg basis. This also applies when a market premium has been paid, i.e. when a weaner on a \$100 schedule is bought for \$140 or 40c per kg above the schedule of final sale. This loss can only be offset from the income earned by adding carcase weight to the animal.

The questions which a forecaster will ask himself are:

1. What is the likely schedule value for the season, and what does the average buyer expect it to be?
2. How much profit did cattle finishers make last year, and what will they expect this coming year?
3. Will the S.M.P. remain in force, and what is the guaranteed S.M.P. for next season.

A useful indication can be obtained by following sales and calculating the value per kg of carcase actually paid by purchasers.

To assess likely prices for store cattle, one needs to consider both the effect of schedule prices and the likelihood of the sharing of the growth increment. For 1982 the position is likely to be as follows:

(a)	Value of weaner 100 kg carcase @ \$1.43	\$143.00
	Growth Increment range Nil - \$40 say	30.00
	Price for Average Weaner Steer (200 kg L.W.) = 86.5c kg L.W. or 173c kg carcase	\$173.00
(b)	Value of yearling 160 kg carcase @ \$1.43	\$228.80
	Growth Increment - Nil \$40 say	\$ 20.00
	Price for Average yearling 320 kg L.W. = 77.50c kg L.W. or \$1.55c kg carcase	\$248.00
(c)	Value of 20 month steer	
	230 kg carcase @ \$1.43	\$328.90



**Summary:****Margin:**

Price to store breeder	\$173.00	\$75 for winter
Price as yearling	\$328.00	\$80 for summer

**NOTE**

I have assumed the S.M.P. will maintain the schedule price at \$1.43/kg.

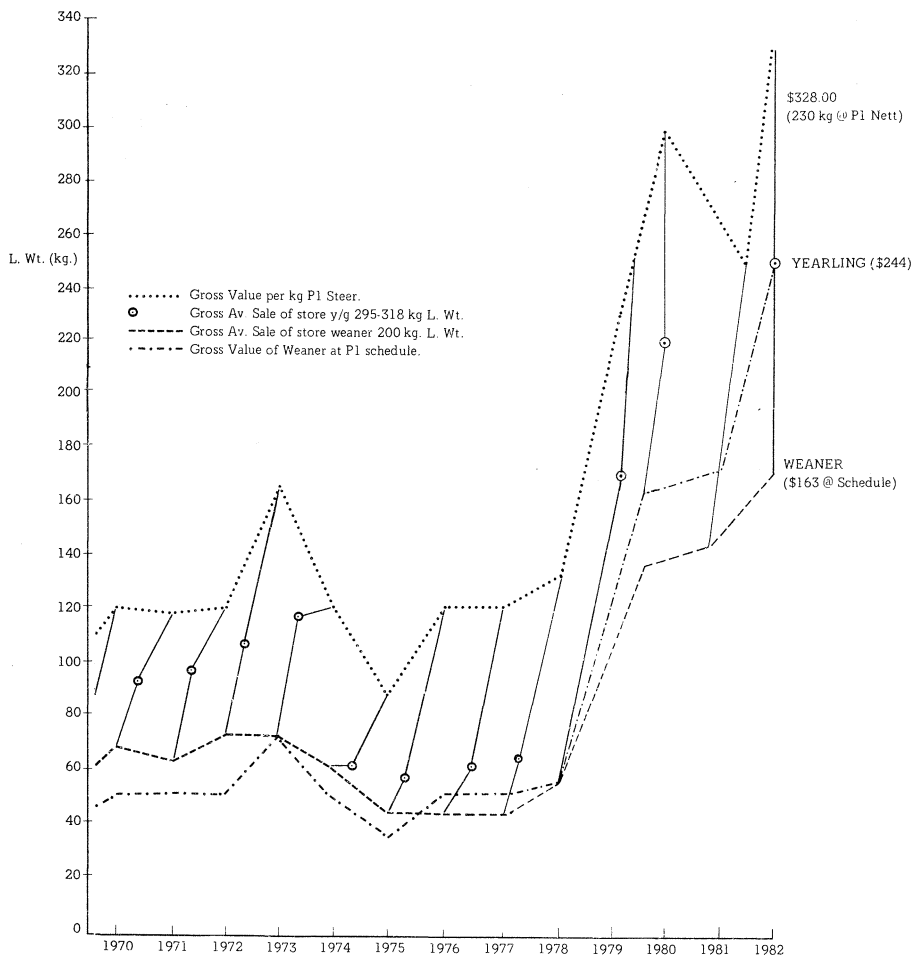


Fig. 3 THE GENERALISED HISTORICAL TREND OF GROWTH INCOME FOR AVERAGE WEANER STEERS TO SUBSEQUENT SLAUGHTER ON SCHEDULE P1 GRADE AT 20 MONTHS AS SHARED BETWEEN BREEDERS; WINTERERS AND SUMMER FATTENERS.

# STORE CATTLE VALUES AT ADDINGTON SALEYARDS

Table 3 Weaner Steers (April)

Year	Good \$/head	Medium \$/head	Small \$/head	Av. Price Per Carcase kg	Differential to PI Schedule
1966	61	-	49	44c	+\$11 (31.30)
1967	58	-	48	41c	+\$12 (31.90)
1968	64	-	50	67c	+\$10 (37.40)
1969	58	-	44	41c	+\$ 6 (41.80)
1970	80	70	50	67c	+\$16 (54.30)
1971	75	65	54	61c	+\$ 9 (54.00)
1972	90	75	60	75c	+\$22 (53.00)
1973	90	75	60	79c	+\$ 0 (74.80)
1974	75	63	40	60c	+\$ 9 (54.00)
					Chiller Grade
1975	55	45	30	43c	+\$ 6 (39.00)
					Chiller Grade
1976	55	45	30	43c	-\$12 (55.00)
					P1
1977	55	40	25	40c	-\$17.50 (57.50)
1978	65	55	30	50c	-\$12.50 (67.50)
1979	190	160	120	160c	+\$50 (110.00)
1980	200	165	120	165c	+\$56 (109.00)
1981	120	120	80	120c	\$ 0 (120.00)

NOTE: Figures shown in brackets are differential values in cents/kg. The Differential is based on 200 kg L.W. with carcase at 50%. The 1978 and 1981 differential shows the effect of the serious autumn drought in Canterbury in both these years.

Table 4 Weaner Heifers (April)

Year	Good \$/head	Medium \$/head	Small \$/head	Av. Price per Carcase kg	Differential to PI Schedule
1966	55	-	39	46c	+\$15
1967	43	-	35	37c	+\$ 5
1968	57	-	46	42c	+\$ 4
1969	45	-	33	36c	-\$ 6
1970	65	55	35	53c	Nil
1971	67	57	42	57c	+\$ 4
1972	80	70	50	68c	+\$18
1973	75	60	45	66c	+\$ 6
1974	60	50	35	53c	-\$ 2
					Chiller Grade
1975	40	30	15	31c	-\$ 8
					Chiller Grade
1976	40	30	15	31c	-\$14
					P1 Grade
1977	40	25	15	31c	-\$14
1978	50	30	15	31c	-\$22
1979	165	140	104	147c	+\$42
1980	160	125	90	125c	+\$17
1981	120	100	80	105c	-\$12 (118)

NOTE: The differential is based on 190 kg L.W. with carcase at 50%.

Table 5 Yearling Steers (October)

Year	Good \$/head	Medium \$/head	Small \$/head	Av. Price per Carcase kg	Differential to PI Schedule
1966	68	-	48	37c	+\$ 9 (31.00)
1967	65	-	50	37c	+\$17 (28.00)
1968	90	70	65	50c	+\$15 (40.00)
1969	82	-	60	48c	Nil (48.00)
1970	120	95	80	64c	+\$22 (49.00)
1971	120	100	85	68c	+\$23 (53.00)
1972	125	110	95	70c	+\$23 (56.00)
1973	140	120	100	82c	+\$ 9 (76.00)
1974	85	67	45	43c	+\$ 6 (38.00)
					Chiller Grade
1975	75	60	40	39c	-\$15 (55.00)
					Chiller Grade
1976	80	60	40	39c	-\$15 (55.00)
					P1 grade
1977	85	65	45	42c	-\$23 (57.00)
1978	170	145	120	93c	+\$10 (87.50)
1979	250	220	180	142c	+\$34 (120.00)
1980	210	165	140	106c	-\$ 4 (109.00)
1981	240	220	180	143	+\$ 0 (143.00) SMP

NOTE: The differential is based on 310 kg L.W. with carcass at 50%. Figures shown in brackets are differential values in cents/kilogram.

Table 6 Yearling Heifers (October)

Year	Good \$/head	Medium \$/head	Small \$/head	Av. Price per Carcase kg	Differential to PI Schedule
1966	64	-	49	44c	+\$15
1967	55	-	47	40c	+\$18
1968	64	-	52	44c	+\$ 5
1969	66	-	53	46c	-\$ 2
1970	110	100	75	75c	+\$35
1971	111	100	77	75c	+\$30
1972	110	95	70	76c	+\$24
1973	110	90	60	69c	+\$ 6
1974	55	45	35	35c	+\$ 2
1975	55	40	30	31c	-\$31
1976	70	50	40	38c	-\$12
1977	70	50	40	38c	-\$22
1978	140	110	70	84c	+\$ 4
1979	220	180	160	116c	+\$ 6
1980	190	140	95	107c	-\$ 2
1981	220	190	120	140c	-\$ 4

NOTE: The differential is based on 260kg L.W. with carcass at 50%.

Table 7 Range of Values for Heifers and Cows

	Unmated Heifers		Cows	
	18 mth (April) \$	2 Yr (Oct) \$	April \$	Oct. \$
1966	52- 62	72- 93	70- 79	- 61
1967	60- 70	69- 74	60- 77	75- 80
1968	67- 74	70-106	78- 92	- 82
1969	54- 62	84-110	58- 70	- 71
1970	80- 85	85-110	84-117	-110
1971	80- 90	110-150	85-130	100-130
1972	80- 90	90-145	90-140	116-120
1973	100-140	120-165	110-180	120-150
1974	65-120	60-110	65-140	50- 90
1975	55- 65	45- 70	25- 60	40- 60
1976	60- 65	70-110	50- 80	70-110
1977	50- 65	70-100	40- 60	70-100
1978	80-100	150-200	80-100	180-220
1979	180-200	190-270	250-290	240-310
1980	240-270	230-270	200-240	220-250
1981	180-230	220-300	200-250	220-280 (Drought)

Table 8 Estimated Average Gross Profit in rearing steers, purchased at weaner and yearling for fattening with sale at P1 export schedule during the subsequent autumn carcase weight 230 kilograms.

Year	Av. Weaner Purchase	Av. Yearling Purchase	20 mth at P1	Gross Profit from Weaner	Gross Profit from Yearling
1966	55	58	72	17	14
1967	54	58	85	31	27
1967	57	70	95	38	25
1969	51	71	124	73	53
1970	70	95	120	50	25
1971	65	100	122	57	22
1972	75	110	168	93	58
1973	75	120	124	49	4
1974	63	65	90	27	25
1975	45	60	126	81	66
1976	45	60	126	81	66
1977	40	65	130	90	65
1978	55	145	230	175	85
1979	160	220	287	127	67
1980	165	165	276	111	111 (Drought)
1981	120	140	330	208	190 (Drought)

NOTE: (a) Though valuation and estimates of sales are given in discreet figures, it should be appreciated that a range of prices will be paid for equivalent beasts, within any sale and that gross profit will vary accordingly.

- (b) 1965-1973 values are based on the GAQ grade.  
1974 and 1975 values are based on the Chiller Grade.  
After 1976 values are based on the P1 grade and are taken at the subsequent autumn to weaner and yearling sales.
- (c) Due to variable weather affecting food supply, cattle values have fluctuated markedly between the autumn and spring, particularly during the 1978 season.
- (d) Value of 20 month at P1 assumes a net value after the skin has been removed.
- (e) The SMPs have greatly affected returns after October 1981.

(vi) Beef Gross Margins:

The following examples are put forward to illustrate a technique of deriving a gross margin for two beef enterprises and will not necessarily reflect the margin derived by these policies in all situations, or as prices and costs change.

Further, costs for interest and supplementary feeds will not be included but will be discussed separately. To compare beef cattle with sheep or crop margins, it is essential to ensure that all direct costs, applicable to the situation are included, and further, that the comparison is made according to the most limiting resource which may be either capital or land. For this reason, the examples will express the margin in terms of return to Capital invested in stock, per hectare and per stock unit. It is convenient to compare sheep policies with cattle by means of the Stock Unit technique but care should be taken to ensure that the feed supply is adequate for both classes of stock due to the different requirements of cattle to sheep throughout the year.

Example 1

This policy involves breeding from cows and 14 month heifers. All weaners, except replacements, are sold as store cattle in April.

## Production Parameters:

Calving, 95% in cows, 80% in heifers; 2% death rate.

## Capital Stock:

	No.	Total	S.U.	Total
Cows	128 at \$300 =	\$38,400	6	768
In-calf heifers	24 at \$300 =	\$ 7,200	5	120
Weaner heifers	25 at \$150 =	\$ 3,750	3.5	88
Bulls	4 at \$700 =	\$ 2,800	6	24

181                      \$52,150                      1,000 SU

Value per Stock Unit \$52.15

## Income:

70 weaner steers	at \$160 =	\$11,200
46 weaner heifers	at \$120 =	\$ 5,520
5 2-year heifers	at \$240 =	\$ 1,200
16 cull cows	at \$220 =	\$ 3,520
1 bull	at \$350 =	\$ 350

TOTAL INCOME    \$21,790

## Expenditure:

### Animal Health-

Drench 25 weaners @ 50c/dose	\$ 13	
Spray 181 cattle @ 50 cents	\$ 90	
Pregnancy test 128 cows @ \$1	\$128	\$ 231

### Commission on Sale Stock-

4.25% of \$17,920	\$ 762
Freight - sale stock	\$ 800
Yard fees - 121 cattle @ \$1 per head	\$ 121
Bull purchase - landed @ \$1,000	\$1,000

TOTAL DIRECT COSTS    \$ 2,914

GROSS MARGIN (before feed costs and interest)    \$18,876

Gross Margin per Stock Unit    \$18.87

Gross Margin per hectare  
(at 10 S.U./ha)    \$188.7

Gross Margin as % of Capital Stock    36.19%



## Example 2

This policy involves the purchase of medium weaner steers in April, which are then sold at 20 months of age at an average carcase weight of 230 kilograms. Death rate = 2%.

### Capital Stock:

	S.U.	Total
Weaner Steers 250 at \$165 = \$41,250	4	1,000 SU
Value per Stock Unit = \$41.25		

### Income:

245 steers at 330 (230 kg at 1.43/kg) = \$80,850

TOTAL INCOME	\$80,850
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### Expenditure:

#### Animal health-

Drench 250 steers at 50c dose	\$ 125
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Spray 250 cattle at 30c	\$ 150
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Bloat control	\$ 100
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Freight - sale stock at \$6/head	\$ 1,470
-------------------------------------	----------

Stock Purchase - 250 weaners at \$165 landed	\$41,250
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TOTAL DIRECT COSTS	\$43,095
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GROSS MARGIN (before feed costs and interest)	\$37,755
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Gross Margin per Stock Unit	\$37.75
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Gross Margin per hectare (at 10 SU/ha)	\$377.5
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Gross Margin as % of Capital Stock	91.52%
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### (vii) Partial Budgeting for Beef:

#### Interest and Feed Costs.

For comparison with gross margin analysis of sheep or crop alternatives in the same property, and when interest has been excluded from these analyses, it is necessary to exclude interest from beef analysis also in order to retain relativity.

However, due to the high capital requirements and the fact that in most instances borrowed capital is involved necessitating loan servicing (15%

compounded if on current account with the stock firm) a partial budget approach is normally adopted, and includes estimates of interest and feed costs in order to provide a more accurate indication of actual returns.

Feed costs can be ignored where there is no change in the supplementary feed required to implement a cattle policy in place of a sheep alternative. Where there is a change however, all additional supplementary feed costs, should be included. There is a trend towards greater supplementing of beef cattle with hay, grain and green feeds and co-operative ventures involving grazing contracts. It should be noted that the opportunity to improve supplementary feed beef profitability increases with the increase in price per kilogram of carcase. Of the variable costs related to beef enterprises, the most variable excluding the purchase price of replacement stock, and frequently the most critical cost is feed cost. Following are partial budget examples of Examples 1 and 2 including interest at 15% and feed costs. However, as interest rates increase the effect on profitability is interesting to note.

#### Example 1

Gross margin before interest and feed cost		\$18,876
Less: Interest on capital in stock at 15% on \$52,150 for 1 year	\$ 7,822	
Feed Costs:		
152 cows and heifers, hay 1 bale to 5 for 120 days - 1600 bales.		
25 weaner heifers, hay 1 bale to 7 for 120 days - 370 bales.		
Total hay including bulk reg. say 2000 bales at 70c	\$ 1,400	\$ 9,222
Gross margin after interest and feed		\$ 9,654
Return per S.U.		\$ 9.65
per hectare @ 10 S.U.		\$96.54
As % of Capital in stock		18.51%

## Winter Feeding Costs.

### North Island:

Grass wintering - 5 weaners per hectare of A.S.P. + 1 bale hay to 10 weaners per day for 60 days = 6 bales per head. Kale - 15-18 weaners per hectare plus some hay - up to 1 bale to 10 weaners per day. Cows - pad feeding beef cows 1 bale to 4 cows meadow hay per day as a complete ration. Grazing charges vary from season to season depending on availability of surplus roughage. Surplus years - 50 cents per head per week. Good grazing - \$1.50 per head per week. Winters following drought - \$1.50-\$3.00 depending on quality and availability.

### South Island:

Hay and grain feeding for 100 days.  
Weaner steers - full hay ration, 5 kg (1 bale to 7 weaners),  
- hay, 4 kg (1 bale to 9 weaners (plus 2 kg grain),  
- turnips (18 beasts per hectare),  
hay, 3.5 kg (1 bale to 10 weaners) and 2 kg grain.

## Winter Growth Rates.

Great variability has been experienced in winter growth rate from year to year. Apart from parasitic effects, factors such as pre-weaning competition with cows for available grass can check calf growth which appears to create a period of slow recovery. The farmer's intuition of paddock shifts and timing and some paddocks of soft grass can slow or check growth. Cold, late springs will continue the winter slow growth period into September and delay the rapid spring growth phase.

In order to assess the various costs of wintering, the following rates of growth have been selected as being the most likely expectation.

### North Island:

All grass or grass plus hay	0.2-0.4 kg per day
Kale	0.2-0.25kg per day

South Island:

5 kg medium meadow hay	
plus some grass	0.2-0.25kg per day
4 kg medium meadow hay plus	
2 kg grain	0.4-0.7 kg per day
Ad lib turnips plus 2 kg hay,	
1.5 kg grain	0.4-0.7 kg per day

To assess feed requirements and likely growth rates derived from food stuffs refer to "Livestock Production from Pasture", Section 10 in Lincoln College Farm Budget Manual - Part 1 Technical.

Example 2.

Gross margin before interest and feed cost		\$37,755
Less: Interest on capital 15% of \$41,250	\$ 6,187	
Interest on capital in grain silos, roller and feedlot \$2,000 @ 12%	\$ 240	
Feed Costs		
250 weaners and 1 bale hay to 8 for 120 days = 3,760 bales @ \$1	\$ 3,760	
Grain at 2 kg each per day for 100 days = 50 tonnes @ \$140	\$ 7,000	\$17,187
Gross Margin after interest and feed		\$20,568
Return per S.U.	\$ 20.56	
" per hectare @ 1034	\$205.60	
as % of capital in stock	\$ 49.86	

Examples of Feed Costing per day for weaners:

Assessed cost of feed -	
Hay 1 bale @ 30 kg @ 60 cents	2.0c/kg
Grain - barley	21.0c/kg
Turnips at	1c/day

Ration	Cost/ Day	Growth/ Day	Carcase/ Day	Income/Day at		
				140c	150c	160c
5 kg of hay	10c	.25 kg	.12 kg	+ 6c	+ 8c	+ 9c
4 kg hay,						
2 kg grain	50c	.25 kg	.13 kg	-31c	-30c	-29c
4 kg hay,						
1.5 kg grain						
+ turnips	40c	.25 kg	.13 kg	-21c	-20c	-19c

Example of assessing actual value of carcase growth in purchased cattle to time of sale.

	Weaner	Yearling	20 mth	Growth Increment (kg)	
				Weaner	Yearling
L.W. in kilograms	210	310	400	190	90
Carcase wgt in kilograms	105	155	230	125	75

	Value of animal on sale			Net Increment Value per kg	
	Weaner	Yearling	20 mth	Weaner	Yearling
1970/71	\$ 70	\$ 95	\$120	40c	33c
1971/72	\$ 65	\$100	\$130	52c	40c
1972/73	\$ 75	\$110	\$174	79c	85c
1973/74	\$ 75	\$120	\$130	44c	13c
1974/75	\$ 63	\$ 70	\$ 90	20c	27c
1975/76	\$ 45	\$ 60	\$126	65c	88c
1976/77	\$ 45	\$ 60	\$126	65c	88c
1977/78	\$ 40	\$ 65	\$131	73c	88c
1978/79	\$110	\$170	\$230	96c	80c
1979/80	\$160	\$220	\$285	\$1.00	86c
1980/81	\$165	\$165	\$292	\$1.01	\$1.69
1981/82	\$180	\$230	\$330	\$1.20	\$1.33

#### 5.2.5 Pig Gross Margin Analysis

(Prepared by T.C. Jones, February 1982)

Gross Margins are frequently used when assessing the profitability of various production parameters. It should be noted that Gross Margins are not sufficient for comparing different types of pig enterprises as the fixed capital involved in plant and buildings will differ.

This section contains 3 gross margins which give some indication of the cash surplus for each enterprise.

Firstly, there are some physical and financial assumptions that must be considered.

(i) Physical

- (a) Sow productivity = 15 pigs weaned per sow per year.
- (b) Average weight of weaners = 18 kg L.W.
- (c) F.C.R. Bacon = 3.3 : 1 to 82 kg L.W.  
Pork = 3.0 : 1 to 53 kg L.W.
- (d) Dressing-out percentage = 75%.
- (e) Post-weaning mortality = 3%.
- (f) Grading Prime = 30%.  
Choice = 60%.  
Standard = 10%.
- (g) Stock Replacement = 33% sows per annum.
- (h) Sow/Boar ratio = 25 : 1.

(ii) Financial

- (a) Pig meat returns at current schedule rates - see Section 3.8, Financial Manual.
- (b) Feed Cost - Breeder Meal = \$234.30 per tonne.  
Creep Meal = \$434.10 per tonne.  
Grower Meal = \$261.90 per tonne.

(iii) Gross Margins

(a) Weaner Production -

Returns:	\$
Sale of 15 weaners @ \$36	540.00
Less breeding stock	<u>80.00</u>
TOTAL RETURNS	460.00
Variable Costs:	
Food - sow (inc. boar at service)	
1.2 tonnes of breeder meal	281.16
Creep meal @ 16 kg/piglet	6.95
Veterinary expenses and medicines	15.12
Repairs and Maintenance	37.30

Miscellaneous expenses (e.g. electricity)	27.00
TOTAL VARIABLE COSTS	367.53
Gross Margin per sow	92.47
Gross Margin per weaner	6.16
(b) Pork Production -	
Returns:	
Sale of 38 kg pigmeat at 281c/kg	106.78
Less weaner	36.00
Less cartage and levy	6.86
Mortality @ 2%	<u>2.28</u>
TOTAL RETURNS	61.64
Variable Costs:	
Food - 35 kg gain at 3.0 : 1	
@ 3.0 : @ 26.19c/kg	27.50
Veterinary expenses and medicines	3.13
Repairs and Maintenance	3.85
Miscellaneous expenses	2.71
TOTAL VARIABLE COSTS	37.19
Gross Margin per porker	24.45
(c) Bacon Production -	
Returns:	
Sale of 62 kg pigmeat	
@ 230c/kg	142.60
Less weaner	36.00
Less levy and transport	7.20
Mortality @ 3%	3.96
TOTAL RETURNS	95.44
Variable Costs:	
Food - 65 kg gain	
@ 3.3 : 1 @ 26.19c/kg	56.18
Veterinary expenses and medicines	3.70
Repairs and Maintenance	3.96
Miscellaneous expenses	<u>2.91</u>
TOTAL VARIABLE COSTS	66.75
Gross Margin per baconer	<u>28.69</u>

(iv) Factors Affecting Profitability

The factors which affect profitability are, in order of importance:

(a) Pig Meat Prices -

Returns for pig meats are presently influenced by the minimum price set by the Pork Marketing board. Various other buyers and the fresh meat trade offer higher prices. Selling at the most profitable carcase weight will also affect returns.

(b) Feed Costs -

Feed is the most significant cost in pig meat production. Cost can be reduced by contract buying grain and home milling and mixing. However, it is essential that the quality of feed is not reduced particularly in protein content, as this will affect the Feed Conversion Ratio (FCR).

(c) Feed Conversion Ratio (FCR) -

Economy of gain of pigs from weaning to slaughter weight may be improved by the following methods:

- (i) Correct feed formulation.
- (ii) Controlled environmental conditions.
- (iii) Use of genetically superior breeding stock.
- (iv) Accuracy of feeding.
- (v) Good pig health.

(d) Breeding Performance -

This is the area in which most improvement can be made. As the cost of maintaining a sow remains relatively constant regardless of the number of weaners she produces, the margin per weaner will increase when more weaners are produced per sow per year. Factors influencing sow productivity are:

- (i) Age of weaning.
- (ii) Number of days from weaning to first service.
- (iii) Number of pigs per litter.
- (iv) Mortality of pigs to weaning.



(e) Grading -

Most buyers make differential payments within grades to encourage the production of carcasses preferred by the consumer. The grading profile can be influenced by:

- (i) Breeding.
- (ii) Feed ration.
- (iii) Feeding rate per day.

(f) Average Daily Gain -

This parameter has virtually no effect on gross margins but will influence the return on capital.

The return for pig meat is the single most important factor, but unfortunately the producer has little control of the meat prices, nor over feed costs. Therefore, it is better to concentrate on breeding performance and F.C.R. to increase the profitability of a pig enterprise.

(v) Weighing Procedures at Abattoirs

According to the Ministry of Agriculture and Fisheries, pig carcasses must be in a clean condition on leaving the work-up area at an abattoir. The regulations do not however specify the procedures that should be followed when weighing pig carcasses. In many instances, the ears and cheeks are removed, presumably to expedite the presentation of clean carcasses. But this does reduce the weight of the carcass, at some loss to the producer. Cleaning of the external ear canals and dehairing the cheeks would overcome this problem, but an increase in killing charges would no doubt follow.

A further weight loss occurs with shrinkage deductions. These vary from zero to 4.5% depending on the district.

The following lists show the different payment systems for the abattoirs throughout the country.

(a) Baconers -

Auckland	Hot weight: 3% deduction
Hellabys'	Hot weight
Gisborne	Hot weight: 4% deduction
Wellington	Hot weight
Ashburton	Hot weight
Timaru	Hot weight: 4.5% deduction
Longburn	Hot weight
Southland	
Frozen Meat	Hot weight

(b) Porkers -

Whangarei	Hot weight
Auckland	Hot weight: 3% deduction
Hellabys'	Hot weight
Gisborne	Hot weight: 4% deduction
Hawera	Hot weight: 2.5% deduction
Wellington	Hot weight
Ashburton	Hot weight
Timaru	Hot weight: 4.5% deduction
Westport,	
Motueka	Hot weight
Christchurch	Hot weight: 3% deduction
Longburn	Hot weight
Southland	
Frozen Meat	Hot weight

(c) Choppers -

Auckland	Skin on: 3% deduction
Hellabys'	Skin on
Gisborne	Skinned: 3% deduction
Wellington	Skinned: 3% deduction
Wanganui	Skinned: Head removed
Ashburton	Skinned
Westport	Skin on
Motueka	Skinned
Longburn	Skin on
Southland	
Frozen Meat	Skin on

SOURCE: "Pork Industry Gazette", October 1978, New Zealand Pork Industry Council.

### 5.2.6 Deer Gross Margins

(Prepared by M.J. McGregor, December 1981)

The popularity of deer farming has increased greatly over the last few years. New Zealand is establishing markets overseas for venison, velvet and other deer by-products.

Many farmers are attracted to deer farming, either as a sideline to an existing operation or as a specialised venture. Until recently, most deer farmers in New Zealand have been in the velvet business as the returns have been very lucrative. With the low prices currently received for velvet the emphasis is now moving to venison production.

The first herds were based on animals captured in the wild. Since 1970 when the first deer farming licence was issued, the number of deer farms have increased to over 1,680 and the number of animals carried is in excess of 104,359 (November 1980, Source Aglink FPP 259). When the first live deer auction was held in 1977 an average price of \$417 was obtained, with the top price being about \$800. By the end of 1979 prices had escalated rapidly from the 1977 levels with hinds costing about \$3,000, breeding stags about \$4-\$4,500, yearling hinds about \$2,000, and yearling stags \$1,200-\$1,600. In 1980/81 there was a decrease in demand for live deer and prices dropped dramatically. At that time hinds were sold for \$850, breeding stags about \$300-\$450, yearling hinds about \$650, and yearling stags \$220-\$230. It is estimated that hinds would now cost up to \$1,500, breeding stags between \$2,000 and \$3,000, yearling hinds about \$900-\$1,200, and spikers \$300.

Deer by-products include antler velvet, skins, tails, sinews, tusks, hearts, livers, tongues, kidneys, feet and blood. By-products are exported for manufacture into jewelery, leather products, oriental medicines and specialty meat preparations. The following two examples show the difference between two entirely different management and stocking policies. It must be stressed that the prices and costs used approximate those ruling at 18 December 1981.

The following physical parameters are common to both examples:

Breeding and velveting life = 10 years.  
 Fawning percentage (hinds fawn as 2 year olds) = 85%.  
 Death rate - adults = 4%.  
                   - yearlings = 5%.

Stag: hind ratio = 1:20.

Dressed weight - cull stag = 90 kg  
                           - C.F.A. stag = 75 kg.  
                           - cull hind = 60 kg

Velvet yields - 1 year old = 0.6 kg  
                           - 2 year old = 1.1 kg  
                           - 3 year old = 1.8 kg  
                           - 4-9 year old = 2.0 kg  
                           - 10-12 year old = 1.8 kg

Velvet price -

Grade	%	Price (\$/kg)
A	78	95
B	14	65
C	5	25
D	4	12

Example 1.

This example gross margin is for a policy of live sales of yearling hinds and stags with cull hinds and stags processed as venison.

No. on Hand (1 July)	Stock Units	Capital Value (\$)
100 breeding hinds	150	165,000
16 yearling hinds	16	16,000
<u>5 stags</u>	<u>7</u>	<u>17,500</u>
<u>121</u>	<u>173</u>	<u>198,500</u>
Purchases	Deaths	
Breeding stag		
(Half cost only)	5.5	
Natural Increase	Sales	
42 hinds	2 cull hinds	
43 stags	10 C.F.A. hinds	
	25 yearling hinds	
	<u>43 yearling stags</u>	
<u>85.5</u>	<u>85.5</u>	

Gross Revenue (per 100 hinds):	
Cull hinds - 2 @ \$223	
(60 kg venison @ \$3.50/kg plus	
by-products @ \$13)	\$ 446.00
C.F.A. hinds - 10 @ \$223 each	\$ 2,230.00
Yearling hinds (sold on farm)	
- 25 @ \$1,100	\$27,500.00
Yearling stags (sold on farm)	
- 43 @ \$250	\$10,750.00
Velvet - 5 stags, 2 kg/head	
@ \$84.93/kg (av.)	<u>849.30</u>
GROSS REVENUE	<u>\$41,775.30</u>

Direct Costs (per 100 hinds):	
Animal health - @ \$3/head	\$ 363.00
Freight - culled hinds and replacement	
stag, @ \$5 per head	\$ 65.00
Supplementary feed - hay 2 bales per	
head @ \$3 per bale	\$ 726.00
- concentrates,	
100 kg nuts to adult stags and 50 kg	
to all other stock @ \$288.60/tonne	\$ 1,818.18
Velvet harvesting - vet, etc. @ \$14/stag	\$ 70.00
Commission - @38,250 @ 7.25%	\$ 2,773.12
Stock purchase - half stag @ \$2,500	<u>\$ 1,250.00</u>
TOTAL DIRECT COSTS	<u>\$ 7,065.30</u>

GROSS MARGIN PER 100 HINDS	\$34,710
GROSS MARGIN PER HIND (+ 100)	\$ 347
GROSS MARGIN PER STOCK UNIT (+ 173)	\$ 200

Example 2.

This example gross margin is for a policy of running velveting stags and buying replacements. Cull animals are processed as venison.

No. on Hand (1 July)	Stock Units	Capital Value (\$)
100 Mixed aged stags	150	67,500
<u>15 yearling stags</u>	<u>15</u>	<u>3,750</u>
115	165	71,250
Purchases	Deaths	
15 weaner stags	5	
	Sales	
	2 cull stags	
	<u>8 C.F.A. stags</u>	
<u>15</u>	<u>15</u>	

GROSS REVENUE (per 100 stags):	
Cull stags - 2 @ \$345.00	
(90 kg dressed @ \$3.50/kg = \$315,	
plus by-products @ \$30.00)	\$ 690.00
C.F.A. stags - 8 @ \$345.00	\$ 2,760.00
Velvet - 100 stags, 2 kg/head	
@ \$84.93/kg (av.)	\$16,986.00
- 15 yearlings, 0.6 kg/head	
@ \$12/kg	<u>\$ 108.00</u>

GROSS REVENUE	<u>\$20,544.00</u>
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Direct Costs (per 100 stags):	
Animal health - at \$3/head	\$ 345.00
Freight - culled stags plus purchased	
replacements @ \$5/head	\$ 125.00
Supplementary feed - hay, 2 bales per	
head @ \$3/bale	\$ 690.00
- concentrates, 100 kg	
nuts to adult stags and 50 kg to all young	
stock @ \$288.60/tonne	\$ 3,102.45
Velvet harvesting - vet, etc. @ \$14/stag	\$ 1,610.00
Stock purchase - 15 weaner stags @ \$200 each	<u>\$ 3,000.00</u>

TOTAL DIRECT COSTS	<u>\$ 8,872.45</u>
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GROSS MARGIN PER 100 STAGS	\$11,671.55
GROSS MARGIN PER STAG ( $\div$ 100)	\$ 117.00
GROSS MARGIN PER STOCK UNIT ( $\div$ 165)	\$ 71.00

#### Summary:

The gross margin per stock unit for a breeding policy is \$129 higher than that of velvetting policy.

It should be noted that the prices for deer products are subject to wide variation, particularly velvet and live animals. In early 1980 the price paid for good quality velvet full to approximately \$150 per kilogram, a drop of almost \$100 from the previous month's price. The December 1981 average price of \$100 per kilogram is a reflection of a downturn in the South Korean economy and the increase in availability of velvet from other sources e.g. China and the Soviet Union. There is no real degree of certainty associated with deer product marketing and the price of velvet could increase as 1982 progresses.

This highlights the fact, that when calculating any gross margin, check on the up to date prices for revenue and expenditure items.

### 5.2.7 Chicken Gross Margin Analysis

Two gross margins for different enterprises are included in this section, the first for meat chickens, and the second for layers. They are intended as a rough guide only, as the size of the enterprise, and whether or not the operator is working within a contract system (meat, chicken system only) affects the costing greatly.

#### (i) Physical and Financial Parameters

##### (a) Meat Chickens

- 1 to 2.5% Mortality.
- 1.5 to 2.0 kg liveweight when killed.
- Dressing out percentage 67 to 73%.
- Average 43-44 days from hatch to maturity.
- 2.0 to 2.4 feed/liveweight conversion.
- Assume \$1.12 kg liveweight.

##### (b) Layers

- 7 to 15% mortality.
  - 12 month laying period.
  - 220 to 260 eggs per bird.
  - Feed conversion of 1.7 to 3.0 kg feed per dozen eggs.
  - Eggs 112c/dozen.
- However, entitlement and various other levies are imposed and the final returns are likely to be 103.91c (N.I.) and 103.03c (S.I.).
- Cull bird meat, 40c per kg (average bird 2.0 kg).

#### (ii) Meat Chicken Gross Margin

(per 1,000 birds - as at 2 February 1982)

For the meat chicken gross margin two different costings are given based on:

- (a) A small or part time chicken operator with 1 - 3,000 birds per batch.
- (b) A full time meat chicken operator with 20 - 30,000 birds per batch. This is normally a contract operation in which the contracting firm pays for feed, day old chicks, litter, and most health costs and deducts these costs from the payout.

Physical Parameters.  
 1.5% mortality.  
 1.75 kg liveweight.  
 70% dressing out.  
 47 days hatch to maturity.  
 2.2 feed/liveweight conversion.

Expenditure:

	(a)	(b)
Day old chicks @ 37-42c ea.	\$ 420.00	\$ 370.00
Feed 3.85kg/bird @ 32c/kg (bulk)	\$1,232.00	\$1,232.00
Sawdust or shavings 1.5c/bird	\$ 15.00	\$ 15.00
Animal Health 1.5c/bird	\$ 15.00	\$ 15.00
Electricity 7-10c/bird	\$ 100.00	\$ 70.00
Repairs and Maintenance 1.3-1.5c/bird	\$ 15.00	\$ 13.00
TOTAL EXPENDITURE	\$1,797.00	\$1,715.00

Revenue:

985 birds @ 1.75 kg liveweight @ \$1.12/kg	\$1,930.60	\$1,930.60
TOTAL REVENUE	\$1,930.60	\$1,930.60

With total revenue being about \$1,930 in each case, this gives a gross margin of \$134 per thousand birds in the case of (a) and of \$215 in the case of (b). These are very variable however. An independent operator may decide to have his birds processed (at a cost of approx. 60c per bird) and market them himself increasing the gross margin markedly.

E.g. for case (a)

Total revenue becomes \$3,368 (985 birds at 1.2 kg dressed out weight at \$2.85 per kg) and total expenses are \$2,388 (\$591 processing plus \$1,797) giving a gross margin of \$980 per thousand birds.

N.B. This extra margin will be partially offset by extra costs involved, e.g. marketing labour and overheads - costs which are not usually included in gross margin analysis.



(iii) Layer Chicken Gross Margin  
(per 1000 birds)

Physical Parameters

15% mortality.

12 month lay 235 eggs per bird.

Feed conversion 2.1 kg feed per dozen eggs.

Eggs 103.03c per dozen net of levy (South Island prices).

Cull birds 40c/kg - average bird 2.0 kg at end of lay.

Average unit has 8,000 birds.

Expenditure:

Stock (layer pullets) at \$3.98 each	\$ 3,980.00
Feed 41 kg/bird @ 25.1c/kg (bulk)	\$10,291.00
Animal health 6c/bird	\$ 60.00
Electricity 31.6c/bird	\$ 316.00
Repairs and Maintenance 3c/bird	\$ 30.00
Freight 1.5c per dozen	\$ 291.00
 TOTAL EXPENDITURE	 \$14,968.00

Revenue:

19.5 dozen eggs per bird @ 103.03c per dozen (net of levy)	\$20,090.85
 850 cull birds @ 2.0 kg @ 40c/kg	 \$ 680.00
 TOTAL REVENUE	 \$20,770.85

With total revenue about \$20,770 and total expenditure of \$14,968 we have a gross margin for this enterprise of \$5,802 per thousand birds.

### 5.3 CASH FLOWS FOR LONG TERM CROPS

#### 5.3.1 Blackcurrants (Based on 1 ha)

##### Establishment.    Year 1.

Materials		
Cuttings - 39,200 @ 6c (1.7m x 15cm)	2,352	
Plastic - 6,000m @ \$33/1,000	198	
Clover - 11 kg (red and white)	25	
Fertiliser - Nitrophoska 0.5t @ \$297/t	148	
Spray Materials	89	
Electricity (irrigation)	55	
 TOTAL MATERIALS		2,867
 Machinery		
Soil preparation	25	
Plastic laying	14	
Fertilising	2	
Seed sowing	2	
Mowing	24	
Spraying	12	
	79	hours
 79 hours @ \$5/hour		395
 Labour		
Planting costs	150	
Machine hours	79	
Irrigation laying	40	
Plastic laying	56	
Sundry	32	
	357	hours
 357 hours @ \$4/hour		1,428
 TOTAL ESTABLISHMENT COSTS		4,690

CASH FLOW. 1 ha Blackcurrants : 7 years

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Gross Income \$900/t	-	2,007 (2.23t)	6,588 (7.32t)	7,101 (7.89t)	9,243 (10.27t)	2,331 (2.59t)	2,763 (3.07t)
Less Harvest- ing \$13/hr	-	264	442	442	420	420	264
Income Net of Harvest- ing	-	1,743	6,146	6,659	8,823	1,911	2,499
Less Packing Freezing and Transport \$135/t	-	301	988	1,065	1,386	350	414
Income Net of Harvest- ing and Marketing	-	1,442	5,158	5,594	7,437	1,561	2,085
Less Product'n Costs	4,690	773	1,014	1,014	1,014	1,014	695
Income Net of Product'n Harvest- ing and Marketing Costs	-4,690	+ 669	4,144	4,580	6,423	547	1,390

### 5.3.2 Boysenberries

(Summary of Costs and Returns for 1 ha block)

	Year			
	1	2	3	4
Establishment Costs (\$)				
Ground Prep.	31			
Shelter	155			
Boysenberry Plants	646			
Fencing	3,044			
Irrigation (trickle)	941			
Labour				
- ground prep.	30			
- planting	196			
- fencing	292			
- irrigation installation	105			
Production Costs (\$)				
Weed Control	50	211	211	211
Fertiliser	273	286	286	286
Berryfruit Levy	34	34	34	34
Pest & Disease Control	61	763	990	1,353
Pruning/tying				
materials		92	115	115
Desuckering		72	72	72
Irrigation operating costs	115	115	115	115
Labour				
- pruning & tying		1,509	2,272	2,803
- harvesting @ 28c/kg (includes transport)		1,437	2,875	4,312
- other activities	34	89	89	89
- packhouse shares		230	230	230
TOTAL COSTS (\$)	6,007	5,088	7,289	9,620
Returns (@ \$1.14/kg) (net of packing and freezing charges)		5,720	11,440	17,940
NET RETURN (\$)	-6,007	+ 632	4,151	8,320

### 5.3.3 Strawberries

#### (i) Tioga Variety

- annual cropping, Auckland region.
- assumed yield 45 t/ha
- sold 15% PYO (after Christmas)
- before Christmas; .33 export, .33 bulk, .33 local market.
- major cost is harvesting labour.
- fresh export raises income considerably.

Materials: (per hectare)

Plants -  
double rows, 280mm apart, 81,500 pl/ha @ \$45/1,000  
Plastic -  
10,000m x 900mm, 50um thick, 20 rolls @ \$45/500m  
Chloropicrin -  
3 cc every 30cm on row (3rd year on)  
Fertiliser - 5 t @ \$300/t  
100 kg sulphate ammonia  
400 kg blood and bone  
350 kg superphosphate  
125 kg sulphate of potash  
5 t lime @ \$30/t  
Straw -  
300 bales @ \$1.50 ea

Pest Sprays:

Pre-flowering -  
Copper oxychloride 50% 500 g/100 l  
Metasystox 100ml (600mls/ha)  
Flowering -  
Fuparen 5x 2 kg/ha  
Post-flowering -  
Thiram 80% 500g/100 l  
Plictran  
Phosdrin 300 ml/ha  
Benlate .35 kg/ha  
Thiodan WP 100 g/100 l  
During harvest -  
Thiram 80% 250 g/100 l  
Plus Carbaryl 80% 150 g  
Plus Plictran  
Plus Phosdrin 300 ml/ha  
Herbicides -  
Simazine 50% a.i. 2-3.2 kg/ha  
Preglone 3 l/ha

# Machinery:

## Cultivation -

Subsoil, plough, rotavate	38 hours
Ridging and plastic laying	8 hours
Spraying	15 hours

## Labour:

### Non-harvest -

Planting	600/hour
Mulching	50 hours/ha
Tidy up	40 hours (June)
Deblossom	80 hours (August, Sept.)
Irrigate	30 hours
Spraying	15 hours
Other	<u>200</u> hours

TOTAL 575 hrs @ \$3.50

### Harvest -

Piece rate picking	20 c/chip
or	\$1.50/5 k bucket
Hourly equivalents calculated:	
Picking	4,371 hrs/ha
Supervision and packing	285 hrs/ha

## Marketing:

Export chips and bulk packs supplied free by  
market firms.

### Local market -

Chips and trays	\$100/1,000
Commission 10%	
PYO costs (estimated)	

## Returns:

	Prices			Revenue		
	Low	Med.	High	Low	Med.	High
Export - per chip						
51,000 250g chips	60c	70c	80c	30,600	35,700	40,800
Bulk - per kilo						
5 kilo packs	80c	\$1.00	1.20	10,200	12,750	15,200
Local - per chip						
25,500 500g chips	66c	75c	83c	17,000	19,125	21,250
PYO -						
(own containers)	\$1.10	\$1.30kg	1.50	7,425	8,775	10,125
				<u>65,225</u>	<u>76,350</u>	<u>87,475</u>

Capital:

Plastic laying machine	\$ 500
Harvesting equipment	500
Tractor implements	1,000
Irrigation equipment	1,500
Coolstore	<u>4,500</u>
	<u>\$8,000</u>

Between say, 4 ha = \$2,000/ha

STRAWBERRY CASH FLOW: Tioga - Auckland (\$/ha) 1980/81

Year	1	2	3
Income	65,225	65,225	65,225
less Harvesting and Marketing costs	<u>-18,746</u>	<u>-18,746</u>	<u>-18,546</u>
	46,479	46,477	46,679
Working costs			
Materials	-6,973	-6,923	-7,123
Machinery	-400	-400	-400
Labour	-2,012	-2,012	-2,212
Capital costs	-2,000		
Total Costs	-11,385	-9,335	-9,735
Net Cash Flow	35,094	37,142	36,944
Accumulated cash flow	35,094	72,236	109,180
Total net present value (NPV)			

(ii) Red Gauntlet Variety

- three year cropping in Canterbury.
- assumed yields 5 t/ha year 1, 25 t/ha year 2, 15 t/ha year 3.
- sold 50% bulk, 40% fresh export chips.
- yields, returns and costs are all lower than for annual cropping in Auckland.

Materials:	Year 1	Year 2	Year 3
Plants-			
May	48,000		
Plastic-			
May 30mm x 75cm	12,000		
Fertiliser-			
August Nitrophoska			
yellow	2 t/ha	600 kg	
Pesticides-			
Dormant (August)			
Cuprox kg/ha	2.5 kg/ha	10%	
Universal oil	11.2 l/ha	more	
Pre-flowering (Sept)		sprays	
Metasystox	600 ml		
Flowering (October)			
Euparen	2.25 kg		
Post-flowering			
Vapona*	250 ml		
Phosdrin*	300 ml		
Benlate*	.25 kg		
Carbaryl	1.25 kg		
* applied fortnightly mid October-April 13 times.			
Herbicides-			
(August)			
Simazine	2.25 kg	same	
Preglone	5.5 l		
Straw-			
(June)		same	
Irrigation-			
(December/January)			

#### Machinery:

Tractor-			
Cultivation and ridging	50 hrs		
Plastic laying	10 hrs		
Straw mulching	20 hrs		
Mowing verges	4 hrs		
Spraying	30 hrs		
Fertiliser spreading	10 hrs		
	<hr/> 114 hrs	70 hrs	

#### Capital:

Buy some in year 1 and some in year 3 for replanting work  
year 4 (contract before then) or hire.



Plastic layer		\$500
Harvesting equipment	\$500	
Tractor implements		\$2,000
Irrigation	\$2,500	
Coolstore	\$4,500	
TOTAL	<u>\$7,500</u>	<u>\$2,500</u>

Plant 4 ha, per hectare.

#### Labour:

Non-harvest -			
Planting	200 hrs		
Cultivating and			
ridging	40 hrs		
Plastic laying	30 hrs		
Straw mulching	100 hrs	60 hrs	60 hrs
Mowing	4 hrs	4 hrs	4 hrs
Irrigation	18 hrs	8 hrs	8 hrs
Spraying	40 hrs	40 hrs	40 hrs
Fertiliser spreading	10 hrs	10 hrs	10 hrs
Sundry	180 hrs		
TOTAL	<u>622 hrs</u>	<u>122 hrs</u>	<u>122 hrs</u>

#### Harvest-

##### Piece rates:

Picking	45c/kg
Supervision	7c/kg
Packing	4.5c/kg

Yields (t/ha)	5	25	25
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##### Hourly equivalents @ \$3.50/hr

Picking	642 hrs	3,214 hrs	1,928 hrs
Supervision	100 hrs	500 hrs	300 hrs
Packing	64 hrs	321 hrs	192 hrs
TOTAL	<u>806 hrs</u>	<u>4,035 hrs</u>	<u>2,420 hrs</u>

#### Marketing:

Berries are distributed 40% fresh export  
60% bulk

Freight and freezer charge	\$55/t	\$165	\$825	\$495
Bulk cartons and	15 kg			
liners at	\$50/100	\$100	\$500	\$300

Export chips supplied free

Commission not applicable  
(sell at 'firm' price)

Returns:

Bulk	at \$1/kg	\$3,000	\$15,000	\$9,000
Export	at .70c/chip	5,600	28,000	16,800
	4,000 chips/t			
TOTAL		<u>\$8,600</u>	<u>\$43,000</u>	<u>\$25,800</u>

STRAWBERRY CASH FLOW: Red Gauntlet - Canterbury \$/ha 1980/81  
3 year crop

Year	1	2	3
Income	8,600	43,000	25,800
less Harvesting and Marketing costs	-2,619	-15,908	-9,374
	<u>5,981</u>	<u>27,092</u>	<u>16,426</u>
Working Costs			
Materials	-4,646	-1,104	-1,104
Machinery	-400	-250	-250
Labour	-648	-427	-427
Capital costs	-1,875	-	-625
	<u>-7,069</u>	<u>-1,781</u>	<u>-2,581</u>
TOTAL COSTS	-7,069	-1,781	-2,581
Net Cash Flow	-1,088	25,311	13,845
Accumulated Cash Flow	-1,088	24,223	+38,068
Total Net Present Value (NPV)			

### 5.3.4 Blueberries

Income - No. of plants = 2,778

Year	Kg/plant	Total Crop (kg)	Local Income \$1.50/kg	Export Income \$3.00/kg	TOTAL
3	1.3	3,612	2,709	5,418	8,127
4	2.2	6,112	4,584	9,168	13,752
5	3.8	10,556	7,917	15,834	23,751
6	5.4	15,001	11,251	22,501	33,752
7	7.0	19,446	14,584	29,169	43,753

(Assume half the total crop export, half local)

#### Working Costs

##### Year 2

Cultivation	30	
Roundup	150	
Sawdust mulch	450	
	—	630

##### Year 3

Irrigation and frost control	300	
Mowing (including labour)	300	
Fertiliser	175	
Sprays	300	
Pruning	500	
Repairs and Maintenance	500	
	—	2,075

#### Capital Costs

##### Year 1

Cost of plants 2,778 @ \$3/plant	8,340	
Irrigation (overhead)	5,000	
	—	13,340

##### Year 3

Framework and netting		10,600
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# BLUEBERRIES CASH FLOW \$/ha

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	...	Year 12
Income				8,127	13,752	23,751	33,752	43,753	...	43,753
Harvesting & Marketing Costs				2,616	4,298	7,195	10,212	13,229	...	13,229
Working Costs		630	2,075	2,075	2,075	2,075	2,075	2,075	...	2,075
Capital Costs	13,340			10,600						
Total Costs	13,340	630	2,075	15,291	6,363	9,270	12,287	15,304	...	15,304
Net Cash Flow	-13,340	-630	-2,075	-7,164	7,379	14,481	21,465	28,449	...	28,449
Accumulated Cash Flow	-13,340	-13,970	-16,045	-23,209	-15,830	-1,349	20,116	48,565		

### 5.3.5 Kiwifruit

(1 ha Hayward Variety - costing for Bay of Plenty area)

#### Harvesting:

Year	4	5	6	7	8	9	10
Labour @ \$4/hr	120	320	480	690	850	1,050	1,240
Tractor @ \$1.50/hr	2	6	10	15	20	25	30
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	122	326	490	705	870	1,075	1,270

#### Marketing:

Yield: (t/ha) %							
export trays (90%)			4	6	10	15	18
Therefore total #							
export trays			1,030	1,545	2,570	3,855	4,630
NB: 1 tray 3.5 kg							
Packhouse Charge: (grading and packing) \$2.25/tray			2,318	3,476	5,782	8,674	10,420
Transport to packing store \$2/bin			63	95	158	237	285
			<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL			3,411	5,116	8,510	12,766	15,335

#### Returns:

Export trays @ \$8/tray	8,240	12,360	20,560	30,840	37,040
Processed (10%) @ 70c/kg	280	420	700	1,050	1,260
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	8,520	12,780	21,260	31,890	38,300

#### Establishment Costs:

Irrigation (trickle) for shelter		107**
Shelter belt (Year 1)		
Ripping	1 hr @ \$10/hr	10
Lely - roterra	2 hrs @ \$15/hr	30
Plants (Cryptomeria)	@ 2.5m spacing = 160 trees	
	@ \$75/100)	120
Labour for above	17.5 hrs @ \$4/hr	70

TOTAL YEAR 1 230

Preparation and planting (year 3)		
Irrigation (trickle for vines)		511**
Ripping	2 hrs @ \$10/hr	
Lely - roterra	6 hrs @ \$15/hr	
Marking out	Labour 15 hrs @ \$4/hr (string 200m plus 15 pegs = \$20)	
Fence construction	T-bar with box sectioned assembly 2.75m 2 founds spaced 6m intra-row, 45m inter-row	1,850
Plants (bought Year 2)	4.5 x 6m spacing, 335 @ \$1/plant	335*
Grafting and planting out	170 hrs (year 3) * 7 hrs (year 4 replace)	708
Base fertiliser	(allowance made, i.e. based on MAF's. test)	100
TOTAL YEAR 3		2,658

Production Costs:

Year	1	2	3	4	5	6	7	8	9	10
Mowing: 18 hrs/yr, man & mower	150	150	150	150	150	150	150	150	150	150
Weed spraying: (Roundup 1:100) 24088/1	100	100	100	100	100	100	100	100	100	100
Handwork: - vines (tying-up) \$4/hr				120						
- shelter \$4/hr	20	20	20	20						
Fertiliser: (see schedule)	85	45	165	150	130	130	130	130	130	130
Pest control: (see schedule)			80	150	210	350	490	490	490	490
Training and Pruning: @ \$4/hr			655	450	500	550	600	600	600	600
Bees: 5 hives/ha @ \$40/hive						200	200	200	200	200
TOTALS	355	315	1300	1020	1090	1480	1670	1670	1670	1670

- \* Establishment charge made in Year 2.
- \*\* Irrigation charged as a capital cost (not establishment)  
as follows:

NB: Only crop related costings (no capital costs of pump, filter etc.)

#### Shelter:

Year 1	-	400 m lateral (13 mm Ø) @ \$18/100 m	72.00
		160 m microjets @ \$21.78/100 m	35.00
			<hr/>
			\$107.00/ha

#### Vines:

Year 2	-	2,200 m lateral (13 mm Ø)	
		@ \$18/100 m	396.00
		100 m submain (32 mm Ø)	
		@ \$42.50/100 m	42.50
		335 microjets @ \$21.78/100 m	72.96
			<hr/>
			\$511.46/ha

CASH FLOW: KIWIFRUIT 'HAYWARD'  
1 ha in the Bay of Plenty over 10 years (T-bar fencing) Beginning 1981

Year:	0	1	2	3	4	5	6	7	8	9	10
Income					350	1,400	8,520	12,780	21,260	31,890	38,300
- marketing and harvesting costs					122	326	3,901	5,821	9,380	13,841	16,605
Net Return					228	1,074	4,619	6,959	11,880	18,049	21,695
Establishment Costs		230	335	2,658							
Production Costs		355	315	1,300	1,020	1,090	1,480	1,670	1,670	1,670	1,670
Capital Costs	25,000	107		511							
TOTAL COSTS	25,000	692	650	4,469	1,020	1,090	1,480	1,670	1,670	1,670	1,670
Net Cash Flow	-25,000	-692	-650	-4,469	-792	-16	3,139	5,289	10,219	16,379	20,025
Accumulated Cash Flow	-25,000	-25,692	-26,342	-30,811	-31,603	-31,619	-28,480	-23,191	-12,972	3,407	23,432

THE EFFECT OF YIELD AND PRICE VARIATIONS OF GROSS RETURNS TO KIWIFRUIT  
'HAYWARD' AT 90% EXPORT  
(no account of process fruit)

Yield t/ha trays/ha 90% exp.	6		7		8		9		10						
Returns (\$/tray)															
7.50	2,888	7,725	11,588	7,725	11,588	16,383	15,428	19,275	24,112	24,112	28,928	32,775	29,888	34,710	38,588
8.00	3,080	8,240	12,360	8,240	12,360	17,480	16,456	20,560	25,720	25,720	30,840	34,960	31,880	37,040	41,160
8.50	3,272	8,755	13,132	8,755	13,132	18,572	17,485	21,845	27,327	27,327	32,785	37,145	33,872	39,338	43,732



5.3.6 Grapes  
(for wine production in Canterbury)

Income

- The price received is \$350/tonne.
- The crop is mechanically harvested by contract at a cost of \$40/tonne.

Yields	Year					
	1	2	3	4	5	6
Tonne/hectare			6	12	18	18
Harvest cost			\$240	\$480	\$720	\$720
Annual returns			\$2,100	\$4,200	\$6,300	\$6,300
Returns - harvest cost			\$1,860	\$3,720	\$5,580	\$5,580

ESTIMATED COSTS OF ESTABLISHMENT YEAR 1:

Growing Costs	No. hours or x Quantity/ha	Equipment	Unit Rate	Total Cost/ Hectare
Cultivation				
Plough	1 2 hours	LTE	17.00	34.00
Discing	2 1.5 hours	LTE	17.00	51.00
Rotary hoe	1 2 hours	LTRH	19.00	38.00
Planting				
Marking out	1.5	LT	15.00	22.50
Cuttings	2,260		0.50	1,130.00
Planting	1 16 hours	L*	4.00	64.00
Weed spray	1 3 l/ha over .33 ha	Simazine	10.00	10.00
Labour	1 hour	LTS	22.00	22.00
Inter-row cultivation	2 2.5 hours	LTRH	19.00	95.00
Hand weeding	1 5 hours	L*	4.00	20.00
TOTAL COSTS				1,486.50

## KEY:

Hourly rate \$

L	- Labour	5.00
L*	- Labour	4.00
T	- Tractor	10.00
LT	-	15.00
E	- Equipment	2.00
RH	- Rotary hoe	4.00
S	- Sprayer	7.00

## ESTIMATED COSTS OF ESTABLISHMENT YEAR 2:

Growing Costs	No.	Hours or x Quantity/ha	Equipment/ Materials	Unit Rate	Total Cost/ Hectare
Pruning	1	20 hours	L*	4.00	80.00
Trellis Erection:					
Cartage/layout		7 hours	LT	15.00	105.00
Driving posts		620 posts		1.00	620.00
Assembly		80 hours	L*	4.00	320.00
Posts		620 p, 2.7m		6.90	4,278.00
Wire	37	(coils), 24,200m	12 gauge ht	25.00	925.00
Staples	620	(x2) 114/kg		1.60/kg	17.40
Nails	620	(x4) 43/kg	galv. 2"	3.50/kg	202.00
Strainers		3/row,		1.50/kg	90.00
Replants 8% labour	200	4.0 hours	Cuttings L*	.50 4.00	100.00 16.00
Tying and Disbudding	2	22 hours	L*	4.00	176.00
String		0.6 m/plant		\$20/3,000m	10.00
Training		60 hours	L*	4.00	240.00
Weeds spray		3 ha over .33 ar.	Simazine	10.00	10.00
		2.5 hours	LTS (both)	22.00	55.00
		3 l/ha over .33 ar.	Preglone	9.00	10.00
Inter-row cultiv.	4	2.5 hours	LTRH	19.00	190.00
Hand weeding	1	5 hours	L	4.00	20.00
Sprays		See over page.			50.00

TOTAL GROWING COSTS

\$7,434.40

## ESTIMATED COST OF PRODUCTION YEAR 3:

Growing Costs	No. x	Hours/ Quantity/ Hectare	Equipment/ Materials	Unit Rate	Total Cost/ Hectare
Pruning		88 hours	L*	4.00	352.00
Replants (2%)		53 cuttings		0.5	27.00
		2 hours	L*	4.00	8.00
Vine Control:					
Tucking in		20 hours	L*	4.00	80.00
Tying Down		15 hours	L*	4.00	60.00
Debudding		14 hours	L*	4.00	56.00
Weeds spray		Same as 2nd year			87.50
Cultivation	4	2.5	LTRH	19.00	190.00
Hand weeding	1	5	L*	4.00	20.00
Sprays		See over page.			199.00
Labour	6	1.5	LTS	22.00	198.00
TOTAL GROWING COSTS					1,277.50

# SPRAY PROGRAMME

Spraying commences in the year after planting. A full programme is followed from the third year onwards.

Time	Material	Rate/ha	Unit Rate	2nd yr \$/ha	3rd + \$/ha
Bud burst	Kocide	2.0 kg	\$ 5.00/kg	10.00	10.00
Mid Oct.	Microsul	1.7 kg	\$ 2.00/kg		3.40
Early Nov.	Microsul	1.7 kg	\$ 2.00	2.00	3.40
Mid Nov.	Euparen	2.2 kg	25.00	25.00	55.00
Dec. Post Bloom	Carbaryl	1.7 kg	8.00		13.60
Jan. small berry	Microsul	6.7 kg	2.00	13.40	13.40
March - just prior to harvest	Mesurool	2.0 kg	50.00		100.00
TOTAL				50.40	198.80

Downy mildew - Kocide and Euparen  
 Botrytis - Euparen  
 Powdery Mildew - Microsul  
 Mesurool - bird repellent  
 Carbaryl - mealy bug, thrips, bronze beetle, cutworm.

CASH FLOW.    Written as of March 1981.    Prices per hectare basis.

Year			3	4	5	6	7	8	9	10
Gross Revenue	-	-	2,100	4,200	6,300	6,300	6,300	6,300	6,300	6,300
Less Harvest and Marketing Costs			240	480	720	720	720	720	720	720
Net Revenue			1,860	3,720	5,580	5,580	5,580	5,580	5,580	5,580
<u>Capital expenditure</u>										
Crop establishment	1,486.50	7,434.4	-	-	-	-	-	-	-	-
Cash farm expenses	-	-	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5
Total cash expenditure	1,486.5	7,434.4	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5
Cash receipts	-	-	1,860	3,720	5,580	5,580	5,580	5,580	5,580	5,580
Cash expenditure	1,486.5	7,434.4	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5	1,277.5
Cash flow	-1,486.5	-7,434.4	582.5	2,442.5	4,302.5	4,302.5	4,302.5	4,302.5	4,302.5	4,302.5
Accumulated cash flow	-1,486.5	-8,920.9	-8,338.4	-5,895.9	-1593.4	2,709.1	7,011.6	11,314.1	15,616.6	9,919.1

### 5.3.7 Sweet Cherry

Cash flows for one hectare sweet cherry orchard.  
Established and managed as either:

- (i) Traditional (T) (7 x 7m spacing, 200 trees/ha.
- (ii) Semi-traditional (S) (4.5 x 3.65m spacing, 600 trees/ha).
- (iii) Hedgerow plantings (H) (1m x 4.5m spacing, 2,225 trees/ha).

Costings per hectare as for March 1981.

Machinery and labour \$4/hour.

Sprays on per hectare basis.

10-12 kg bins - \$5.00 each.

Wooden ladders \$75.00 each.

- (i) Traditional

Year 0

Establishment:

Trees 7m x 7m = 200/ha @ \$3.25	650
Fertiliser 1 kg/tree = 4 sacks @ \$20	80
Machinery based on \$4/hr	
- cultivation 1 subsoil	
3 cultivations	8
- fertiliser spreading	8
- planting 10 hours	40
Labour based on \$4/hour	
- cultivation	8
- fertiliser spreading	8
- planting 20 hours	80
Overhead irrigation (per ha)	4,000
	<hr/>
	\$4,882

Year 1

Production:

Pesticides

- spray programme	100
- weedwiper "Roundup" \$100/5 l	25

Irrigation

- 20 kw motor	
- 5 hours, 10 applications, 5c/kw/hr	50

Machinery

- spraying - 5 sprays, .5 hour	10
- pruning, 2 hours (buckraking)	8
- cultivation, 5 x .5 hour	10

Labour	
- spraying, 5 hours	20
- weed wiping	20
- pruning, 3 hours	12
- cultivation, 2.5 hours	10
- general: administration, irrigation, maintenance	100
	<u>\$365</u>

## Year 2

Production: As for Year 1.	
Plus fertiliser as for Year 0	80
Fertiliser spreading costs	
- machinery	8
- labour	8
	<u>\$461</u>

## Year 3

Production:	
Pesticides	
- spray programme	150
- herbicide strip "Roundup" (hours 12)	75
Fertiliser	
- orchard 8:4:8 NPK. 1 kg/tree	80
Irrigation	
- electricity (until year 12)	50
Machinery	
- spray programme, 3.5 hours	14
- herbicide-strip boom spraying (to year 12)	8
- fertiliser spreading (to year 12)	8
- pruning	8
- mowing 10 x .25 hour (to year 12)	20
Labour	
- spraying, 7.5 hours	30
- boom (until year 12)	8
- fertiliser (until year 12)	8
- pruning	30
- mowing, 5 hours (until year 12)	20
- general (until year 12)	100
	<u>\$609</u>

## Capital:

Mower	
- (\$1,500) 1 ha proportion	\$150

Year 4

Production: As for Year 3 plus:

Additional

- spray programme	200
- fertiliser 2 kg/tree	160
- spraying machinery	20
- pruning machinery	20
- spraying labour	40
- first detail pruning	80

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\$817

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Harvesting:

Labour

- 3 mins/tree (10 hours)	40
Machinery (2 hours)	8

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\$48

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Marketing:

Packing materials

- 50 boxes (2 kg cartons) @ \$0.65 each	33
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Packing labour

- 5 boxes/hour	40
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allows for other workers in shed

Toll Calls	10
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Freight - \$0.50/box	25
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\$108

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Revenue:

100 kg @ \$2.25/kg	\$225
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Capital:

Picking bins 10 x \$5.00	\$50
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Year 5

Production:

As for Year 4 but alter the following to read:

Spray programme (now need mesurol)	300
Spray machinery	24
Spray labour	50

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\$931

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Harvesting:	
Labour	
- 6 mins/tree (20 hours)	80
Machinery	<u>15</u>
	\$95

Marketing:	
Packing materials (100 boxes)	65
Packing labour	80
Toll calls	15
Freight	50
	<u>\$210</u>

Capital:	
10 picking bins @ \$5.00	50
2 ladders @ \$75.00	150
	<u>\$200</u>

Revenue:	
200 kg @ \$2.25	\$450

#### Year 6

Capital:	
20 picking bins @ \$5.00	100
2 ladders	150
1 grader (1 ha proportion)	150
	<u>\$400</u>

Production:	
As for Year 5 but following now:	
Spraying programme (full protective and mesurol)	500
Fertiliser	240
Spraying	
- machinery (as for previous year)	24
- labour (as for previous year)	50
	<u>\$1,221</u>

Harvesting:	
Labour	
- 2 harvests 6 mins/tree	160
Machinery	20
	<hr/>
	\$180

Marketing:	
Packing materials 200 x \$0.65	135
Packing labour	
- with grader, 6/hour	135
Grader electricity	5
Toll calls	25
Freight	100
	<hr/>
	\$400

Revenue:	
400 kg @ \$2.25	\$900
	<hr/>

Year 7

Production:	
Additional to previous years	
- amend these headings:	
Spray programme	550
Pruning	
- machinery	40
- labour	160
	<hr/>
	\$1,361

Harvesting:	
Contract rate \$0.50/kg	500
Machinery	50
	<hr/>
	\$550

Marketing:	
Packing materials	
- 500 boxes	325
Labour	
- 6 boxes/hour	335
Grader electricity	10
Toll calls	50
Freight	250
Promotion	150
	<hr/>
	\$1,120

Revenue: 1000 kg	<hr/>
	\$2,250

	Year 8	Year 9	Year 10	Year 11	Year 12
<hr/>					
Capital:					
Bins @ \$5 each	\$ 700	\$ 1,250			
Ladders @ \$75 ea	150				
Grader @ \$150		150			
	<hr/>	<hr/>			
	\$ 850	\$ 1,400			
<hr/>					
Production:					
As for previous					
years but detail					
pruning costs					
rise to amounts					
shown	200	200	250	350	350
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	\$1,401	\$1,401	\$1,451	\$1,551	\$1,551
<hr/>					
Harvesting:					
Labour based on					
\$0.50/kg					
machinery	1,500	3,000	4,500	5,500	6,000
	75	100	100	100	100
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	\$1,575	\$3,100	\$4,600	\$5,600	\$6,100
<hr/>					
Marketing:					
Packing materials					
cartons @ \$0.65 ea	975	1,950	2,925	3,575	3,900
Packing labour,					
based on 6 boxes					
per hour = covers					
graders and packers	1,000	2,000	3,000	3,670	4,000
Grader electricity	15	25	30	35	40
Toll calls	100	100	100	100	100
Freight	750	1,500	2,250	2,750	3,000
Promotion	250	350	350	350	350
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	\$3,090	\$5,925	\$8,655	\$10,480	\$11,390
<hr/>					
Revenue:					
Based on \$2.25/kg	6,750	13,500	2,025	24,750	27,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	\$6,750	\$13,500	\$2,025	\$24,750	\$27,000
<hr/>					

(ii) Semi-Intensive

Year 0

Establishment:

Trees (4.5 x 3.65m) 600/ha

@ \$3.25 1,950

Fertiliser - 1 kg/tree

- 12 bags @ \$20 240

Irrigation 4,000

Machinery

- cultivation and subsoil only 20

- contract tree planters 160

- fertiliser spreading 8

Labour

- cultivation, 5 hours 20

- planting and surveying 20

- fertiliser spreading 8

\$6,426

Year 1

Production:

Fertilisers

- supplementary summer urea 100 (NPK) 240  
(S.U.) 100

Spray programme 300 300

Herbicides

- "Roundup" - 5 l = \$100  
(weed wiper) 75 75

Irrigation

- electricity 50 50

Machinery

- fertiliser spreading 4 4

- spraying 12 12

- cultivation 20 20

- pruning 8 8

Labour

- fertiliser spreading 4 8

- spraying 20 20

- weed wiper, 15 hours 60 60

- cultivation 20 20

- pruning - tipping and  
shaping (3 m/tree) 40 120

- general - irrigation,  
administration, maintenance 100 100

\$813

\$1,141

Year	3	4	5	6	7	8	9	10	11	12
<u>Capital</u>										
Bins @ \$5 each	150	300	550	1,000	2,500					
Mower @ 15 x 10	150									
Grader @ 15 x 10		150			150					
Pneumatic pruning equipment \$8,000 (as listed for hedgerow)			800							
	\$300	\$450	\$1,350	\$500	\$1,150	\$2,500				
<u>Production</u>										
Fertiliser	340	**480	480	480	480					
Spray programme	400	*450	500	550	550					
Herbicides - efficient boom spraying	75	75	75	75	75					
Irrigation - electricity	50	50	50	50	50					
Machinery										
- fertiliser spreading	8	4	4	4	4					
- spraying	16	20	24	28	28					
- herbicide	4	4	4	4	4					
- mowing	40	40	40	40	40					
- pruning	8	8	75	75	150					
Labour										
- fertiliser spreading	8	4	4	4	4					
- spraying	24	30	32	36	36					
- herb. strip	4	4	4	4	4					
- mowing	40	40	40	40	40					
- pruning	120	120	200	200	400					
- general	100	100	100	100	100					
	\$1,237	\$1,429	\$1,632	\$1,690	\$1,965	\$1,965	\$1,965	\$1,965	\$1,965	\$1,965

\* Full programme with mesurol reliance from Year 4.

\*\* Now 2 kg per tree.



(iii) Hedgerow

Year 0

Establishment:

Trees 4.5 x 1 m (2,225 trees/ha)	7,250
Fertiliser .25 kg/tree	220
Irrigation (overhead)	4,000
Machinery	
- cultivation and subsoiling	20
- planting (tree plant 4.5 hours @ \$35)	160
- fertiliser spreading	4
Labour	
- cultivation	20
- planting	20
- fertiliser spreading	4
	<hr/>
	\$11,698

Year 1

Production:

Fertiliser (urea 100 g/tree)	400
Spray programme	300
Herbicides	
- "Preglone" and "Roundup"	125
Irrigation	
- electricity	50
Machinery	
- \$4/hour	
- fertiliser spreading	4
- spraying	12
- boom spraying herbicides	8
- mowing	20
- pruning (buckrake, compressor)	40
Labour	
- fertiliser spreading	4
- spraying	20
- herbicide	8
- mowing	20
- pruning (1 min/tree)	75
- general: administration, irrigation, maintenance	100
	<hr/>
	\$1,186

Capital:		
Mower		150
Pneumatic pruning equipment:		
- PTO driven compressor	\$2,000	
- Handpieces - 6 J's @ \$390	2,340	
- 6 F-24's @ \$460	2,760	
- Hose and fittings	900	
	<u>\$8,000</u>	
	÷ 10	
		800
		<u>\$950</u>

	Year 2	Year 3	Year 4	Year 5
Capital:				
Bins @ \$5 each	200	500	1,800	1,250
Graders @ \$15 x 10	150		150	
3 Platforms @ \$40 x 10			1,200	
	<u>\$ 350</u>	<u>\$ 500</u>	<u>\$3,150</u>	<u>\$1,350</u>
Production:				
Fertiliser	220	880	880	880
	Spring NPK	Spring NPK 1 kg/tree		
	400			
	Summer Urea			
Spray programme	400	450	550	550
Herbicides	125	125	75	75
			(Round-up only)	
Irrigation - electricity	50	50	50	50
Machinery				
- fertiliser spreading	8	8	4	4
- spraying	16	20	28	28
- herbicide	8	4	4	4
- mowing	20	20	20	20
- pruning	-	80	80	80



Labour				
- fertiliser spreading	8	8	4	4
- spraying	24	30	36	36
- herbicide	8	4	4	4
- mowing	20	20	20	20
- pruning	-	150	150	150
- general	100	100	100	100

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	\$1,407	\$1,899	\$2,005	\$2,005
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Harvesting:

Labour	*150	**1,250	2,800	6,675
Machinery	20	40	200	200

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	\$170	\$1,290	\$3,000	\$6,875
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Marketing:

Packing materials				
(@ \$0.65)	145	1,270	3,620	8,680
Grader electricity	5	25	40	50
Packing labour	150	1,300	3,710	8,900
Freight (\$0.50/box)	112	975	2,785	6,675
Toll calls	10	50	100	150
Promotion	25	150	400	400

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	\$447	\$3,770	\$10,655	\$24,855
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Revenue:

\$2.25/kg	445kg	3,894kg	11,125kg	26,700kg
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	\$1,000	\$8,760	\$25,030	\$60,075
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Cash Flows are summarised in Table 1.

\* Pneumatic hand pruning, 1 min/tree.

\*\* Platform pneumatic pruning.

CASH FLOWS: DAWSON CHERRY. THREE PRODUCTION SYSTEMS

Year		0	1	2	3	4	5	6	7	8	9	10	11	12	TV
Revenue	T					1,225	450	900	2,250	6,750	13,500	20,250	24,750	27,000	
Crop Returns	S				675	2,700	6,750	13,500	27,000	40,500	54,000	60,750	67,500	67,500	
@ \$2.25/kg	H			1,000	8,760	25,030	60,075								
Expenditure	T	4,880			150	50	200	400		850	1,400				
Establishment (yr #0)	S	6,425			300	450	1,350	500	1,150	2,500					
and capital (yrs 1-12)	H	11,700	950	350	500	3,150	1,250								
Production	T		365	460	610	820	930	1,220	1,360	1,400	1,400	1,450	1,450	1,450	
	S		815	1,140	1,240	1,430	1,630	1,690	1,965	1,965	1,965	1,965	1,965	1,965	
	H		1,185	1,410	1,900	2,005	2,005								
Harvesting	T					50	95	180	550	1,575	3,100	4,600	5,600	6,100	
	S				90	640	1,600	3,200	6,300	9,400	12,500	14,00	15,500	15,500	
	H			170	1,290	3,000	6,875								
Marketing	T					110	210	400	1,120	3,090	5,925	8,655	10,480	11,390	
	S				320	1,225	2,940	5,800	10,940	16,945	22,400	25,125	27,850	27,850	
	H			450	3,770	10,655	24,855								
Net Cash Flow	T	-4,880	-365	-460	-760	-805	-985	-1,300	-780	-165	1,675	5,545	7,220	8,060	+4,000
	S	-6,425	-815	-1,140	-1,275	-1,045	-770	2,310	6,645	9,690	17,135	19,660	22,185	22,185	+9,900
	H	-11,700	-2,135	-1,380	1,300	6,220	25,090								+13,350
Accumulated	T	-4,880	-5,245	-5,705	-6,465	-7,270	-8,255	-9,555	-10,335	-10,500	-8,825	-3,280	3,940	12,000	
Cash Flow	S	-6,425	-7,240	-8,380	-9,655	-10,700	-11,470	-9,160	-2,515	7,175	24,310	43,970	66,155	88,340	
	H	-11,700	-13,835	-15,215	-13,915	-7,695	17,395								
Net Present Value	T	-4,880	-375	-490	-830	-905	-1,140	-1,510	-960	-210	2,185	7,450	9,995	17,195	
Compound Factor	S	-6,425	-840	-1,210	-1,395	-1,175	-890	2,680	8,170	12,275	22,360	26,420	30,710	45,745	
3%	H	-11,700	-2,200	-1,465	1,420	7,000	44,565								

KEY: T = traditional, S = semi-intensive, H = hedgerow.

### 5.3.8 Oranges

1. Yield

Planting density =  $4.6 \times 2.4 \text{ m} = 900 \text{ trees/ha.}$

Year	1	2	3	4	5	6	7	8	9	10
t/ha	-	-	-	5	12	20	27	35	42	51

2. Price returned

1981 - \$300/t

3. Capital Cost

900 trees @ \$4 = \$3,672

4. Land preparation for establishment

Ploughing \$ 30/ha

Discing \$ 25

Rotary hoe \$ 30

Roll, sow and cover

with grass seed \$ 20

Total \$105

5. Mowing

5 x/yr \$100

Rotovation 30

\$300

6. Sprays

Year 1:

Herbicides nil

Cultivation: 4 discing @ \$2/hr/ha/

discing @ \$4.80/hr 38

4 furrow out @ 1 hr/ha/furrow @ \$4.80/hr 20

58

Year 2-3:

Herbicides: Simazine and Gramoxone

in 2 m strip, @ 4 l/ha and 6 l/ha

@ \$9.40/l, \$10 l respectively 40

Spraying: tractor 1.5 hr @ \$5/hr 7

58

Cultivations as for Year 1

105

Year 4: (and subsequent years)	
Herbicides: as for Year 2, but	
2 applications	80
Tractor: 3 hr/ha	14
Cultivations: 1 light harrowing and	
furrow out/year 2 hrs/ha	10

105

7. Insecticides	
Oils: \$1.80/l @ 2 l/100 l	130
Gusathion: \$12.50/kg @ 100 g/100 l	35
Malathion: \$4/kg @ 200 g/100 l	30
Years 1-4: 2 sprays = \$390	
Years 5-10: 3 sprays = \$585	

8. Fungicides	
Captan: \$9/kg @ 200 g/100 l	65
Copper oxychloride: \$3.50/kg @	
400g/100 l	50
Benlate: \$36/kg @ 50 g/100 l	65

Years 1-4: 2 sprays Captan and  
Cu oxychloride = \$230  
Years 5-10: 3 sprays Captan and  
Cu oxychloride = \$345  
Bulk dipping Benlate each year = \$65

9. Fertiliser	
2.5 kg sulphate of ammonia @ 25c/kg	0.60
2.0 kg superphosphate @ 15c/kg	0.30
0.5 kg muriate of potash @ 25c/kg	0.12
5 kg	\$1.00

Year 1-4 apply 0.5 kg/tree for each year of life.  
Year 6-10 increase amount by 25% for each  
tree/each year.

10. Harvesting	
Based on picking rate 100 kg/hr; casual	
hourly rate of \$3.50 therefore	
harvesting it.	\$35

11. Packaging	
10 kg polythene bags @ \$75/1,000.	

12. Freight	
\$15/t per 50 kms.	

13. Irrigation	
Under tree jet, sprinklers on electric pump.	
Running costs =	\$30/year

ORANGE CASH FLOW - \$/ha

Year	1	2	3	4	5	6	7	8	9	10
Yield/ha	-	-	-	5	12	20	27	35	42	51
Income	-	-	-	1,500	3,600	6,000	7,100	10,500	12,600	15,300
<u>Less</u>										
Harvesting	-	-	-	175	420	700	945	1,225	1,470	1,785
Freight	-	-	-	75	180	300	405	525	630	765
Packaging	-	-	-	40	90	150	200	260	315	380
Working costs										
Land preparation	105	-	-	-	-	-	-	-	-	-
Mowing	-	130	130	130	130	130	130	130	130	130
Irrigation	30	30	30	30	30	30	30	30	30	30
Sprays	765	810	810	810	810	1,130	1,130	1,130	1,130	1,130
Fertiliser	90	180	270	360	450	560	690	850	1,050	1,300
Planting Out	700									
Capital Costs										
900 trees	3,600									
Net Cash Flow	-5,290	-1,150	-1,240	-120	1,490	3,000	3,570	6,350	7,845	9,780

### 5.3.9 Apples

The following crop costings apply to Canterbury conditions, growing Granny Smith apples using three different training systems:

1. Extensive (6m x 6m) spacing using the Hawkes Bay training system.
2. Semi-intensive (3.5m x 4.5m) Centre Leader training system.
3. Intensive (1.5m x 3.5m) Centre Leader training system.

Spray schedules and fertiliser programmes are designed to produce export quality apples. The costings can be used for other export varieties with reasonable accuracy provided yield and price figures are altered.

All apple sales are to the NZAPMB and grading and packing costs are not included. For convenience only, the yields are expressed in numbers of cartons as the processed apples will not actually be packed into cartons. All cartons are between nineteen and twenty-one kilograms.

Year 0

Establishment Costs:	Ext.	S.Int.	Int.	Ext.	S.Int.	Int
Cultivation:						
(contract equiv. prices)						
Ploughing	34.50	34.50	34.50			
Harrowing	21.00	21.00	21.00			
Hoeing	34.50	34.50	34.50			
Levelling	21.00	21.00	21.00			
				111	111	111
Fertiliser:						
Potassium nitrate						
51c/kg						
50kg, 53kg, 143kg	25.50	27.00	73.00			
Superphosphate						
9.3c/kg						
23kg, 32kg, 75kg	2.10	3.00	7.00			
				28	30	80
Planting:						
Trees \$2.59 ea.						
277, 652, 1,905	720	1,695	4,953			
				720	1,695	4,953

# Sprays:

## 1. Pests and diseases

- Kilval 0.2 l/ha @ \$17.02/l	6.00	14.00	40.00
- Mancozeb 100g/ 100 l @ \$6.67/kg 4 applications of each	2.00	5.00	15.00

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8	19	55
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## 2. Herbicides

- Preglone @ \$10.22/l	10.22	20.50	41.00
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10	20	41
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## Irrigation:

Power	10.00	23.00	67.00
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10	23	67
----	----	----

## Pruning:

Twine	18.00	16.00	12.00
Wire	16.00	14.00	10.00

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34	30	22
----	----	----

## Labour: (\$3.50/hr)

Cultivation	39	39	39
Fertilisation	6	15	44
Planting (includes marking and pegging out)	176	420	1,226
Pest and disease spraying	15	20	26
Herbicide spraying	4	8	16
Irrigation	30	70	120
Pruning	61	54	40
Mowing 10x	57	57	57

---

388	683	1,568
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## Machinery: (\$4.50/hr)

Fertiliser spreader 0.6 h, 1.5 h, 4.4 h	3	8	20
Pest and disease spraying, 2.4 h, 5.7 h, 16.5 h	11	26	74
Herbicide spraying, 1.2 h, 2.4 h, 4.8 h	5	11	22
Post-hole borer (\$13/day) 1 day, 2 days, 6 days	13	26	78
Mowing 10 x	57	57	57

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89	128	251
----	-----	-----

## TOTAL ESTABLISHMENT COST

\$1,398	2,739	7,148
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Year 1

Production and Marketing Costs:

Fertiliser:

Potassium nitrate

62kg, 130kg, 163kg 32 66 83

Superphosphate,

28kg, 59kg, 75kg 3 5 7

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35 71 90

Sprays:

1. Pests and diseases

- Bordeaux @ \$6.5/kg

4.8kg, 10kg, 19kg 31 65 123

- Kilval, Mancozeb

4 applications ea. 8 19 55

---

39 84 178

2. Herbicides

10 20 40

Irrigation:

Power

---

15 23 40

Pruning:

Twine

20 18 14

Wire

- - -

---

20 18 14

Labour: (\$3.50/hr)

Fertilisation

7 16 46

Pest and disease

spraying

15 20 26

Herbicide spraying

4 8 16

Irrigation

45 70 122

Mowing

57 57 57

Pruning

180 110 75

Harvesting

33c/carton

40

---

308 281 382



Machinery: (\$4.50/hr)

Fertiliser spreading	3	17	19
Pest and disease spraying	19	26	33
Mowing	57	57	57
Herbicide spraying	5	10	20
Cartage 23c/carton			14

---

84	110	143
----	-----	-----

Return:

Intensive only -			
60 ctns av.			
20 kg each			
- export 50%			
30 x \$3.02		91	
- local 40%			
24 x \$2.82		68	
- processing			
10% 6 x \$1.53		9	

---

168
-----

Total Production Costs Year 1

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511	607	833
-----	-----	-----

Intensive Marketing Costs Year 1

Harvesting and Cartage	54
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Deficit Year 1

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\$511	607	719
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Year 2

Production and Marketing Costs

Fertiliser:

Potassium nitrate			
92kg, 142kg, 180kg	47	72	92
Superphosphate,			
43kg, 66kg, 85kg	4	6	8

---

51	78	100
----	----	-----

Sprays:

Extensive

1. Pest and diseases		
20% incr. on Yr 1	47	
2. Herbicides as for Yr 1	10	

---

57

Semi-intensive and intensive.

1. Pests and diseases

- Greentip -

intermediate oil

mid-September

35 l @ \$2.24/l

49 l

78 110

+ Bordeaux @

\$5.75/kg 14kg, 20kg

80 115

5 applications of:

14 day intervals till  
end of November

Melprex liq. 40%

\$127.4/20 l

2 l, 2.8 l

64 89

Nimrod 25 WP \$7.52/kg

2.8 kg, 4 kg

21 30

- petal fall (end Oct.)

and end November

2 applications of:

Gusathion 50 SP

\$14.08/kg

1.4 kg, 2.0 kg

39 56

Kelthane 35 \$9.66/kg

1.4 kg, 2.0 kg

27 39

- early December till

end of season.

6 applications of:

Mancozeb \$8.28/kg

2.1 kg, 3.0 kg

104 149

Captan \$4.47/kg

1.4 kg, 2.0 kg

38 54

Carbaryl \$7.40/kg

1.4 kg, 2.0 kg

62 89

- bitter pit control.

3 applications of:

Calcium nitrate \$1.14/kg

1.3 kg, 1.9 kg

4 7

---

517 738

2. Herbicides					
- Preglone	10	20	41		
				10	20 41
Irrigation:					
Power				21	28 35
Pruning: Twine				15	10 -
Labour: (\$3.50/hr)					
Fertilisation	14	22	28		
Pest and disease spraying	10	40	51		
Herbicide spraying	4	8	8		
Irrigation	45	70	122		
Mowing	57	57	57		
Pruning	310	234	80		
Harvesting		52	158		
				440	483 504
Machinery:					
Fertiliser spreading	11	17	22		
Pest & Disease spraying	23	192	246		
Herbicides	5	11	22		
Mowing (10 x)	57	57	57		
Cartage		36	110		
				96	313 451
Miscellaneous pre-harvest					70 70
Returns:					
Semi-intensive 158 ctns					
- export 79 x \$3.02		239			
- local 63 x \$2.82		178			
- process 16 x \$1.53		24			
					441
Intensive 480 ctns					
- export 240 x \$3.02			725		
- local 192 x \$2.82			541		
- process 48 x \$1.53			73		
					1,339
Total Production Costs Year 2			690	1,431	1,677
Total Marketing Costs Year 2			-	88	268
Deficit Year 2			\$690	1,078	606

Year 3

Fertiliser:		75	86	111
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Sprays:

1. Pests and diseases		550	750	965
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2. Herbicides

- Roundup 5 l

\$25.28/l strip

sprays

	126	126	126
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Irrigation:

	29	37	40
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Labour: (\$3.50/hr)

Fertilisation	16	20	26
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Pest & Disease

spraying	67	90	116
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Herbicide spraying	8	8	8
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Irrigation	75	90	122
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Mowing	57	57	57
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Pruning	290	203	80
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Harvesting	43	248	539
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	556	716	948
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Machinery:

Fertiliser spreading	13	19	25
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Pest & Disease

spraying	180	202	255
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Herb. spraying	11	11	11
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Mowing	55	55	55
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Cartage	30	173	375
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	289	460	721
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Miscellaneous pre-harvest

	70	70	70
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Returns:

Extensive 130 ctns

- export	65	196
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- local	52	147
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- process	13	20
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	363
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Semi-intensive 753 ctn

- export	377	1,139
----------	-----	-------

- local	301	849
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- process	75	115
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	2,103
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Intensive	1,932 ctns				
- export	816			2,464	
- local	301			1,841	
- process	163			250	
				<hr/>	
				4,555	
Total Production Costs Year 3				1,622	1,824 2,067
Total Marketing Costs Year 3				73	421 914
				<hr/>	
Deficit/ <u>Surplus</u> Year 3				\$1,332	142 1,574
				<hr/>	
Year 4					
Intensive Production Costs					
As for Year 3:					2,067
Fertiliser:				85	93
Sprays:					
1. Pests and diseases	612	816			
2. Herbicides	126	126			
				738	942
Irrigation:				35	45
Labour:					
Fertilisation	18	21			
Pest & Disease					
spraying	85	105			
Herbicide spraying	8	8			
Irrigation	69	71			
Mowing	57	57			
Pruning	175	121			
Harvesting	129	596	1,313		
				544	979
Machinery:					
Fertiliser spraying	18	19			
Pest & Disease					
spraying	185	222			
Herbicide spraying	11	11			
Mowing	55	55			
Cartage	90	416	788		
				359	723
Miscellaneous pre-harvest:				70	70

Returns:

Extensive	390 ctns	
- export	195	589
- local	156	440
- process	39	60

---

1,089

Semi-intensive 1,807

- export	904	2,730
- local	723	2,039
- process	180	275

---

5,044

Intensive 3,427 ctns

- export	1,714	5,176
- local	1,371	3,866
- process	341	523

---

9,565

Total Production Costs Year 4

1,612 1,840 2,067

Total Marketing Costs Year 4

219 1,012 1,919

Deficit/Surplus Year 4

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-\$742 +2,192 +5,579

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Year 5

Intensive and semi-intensive  
production costs as for  
Year 4.

1,840 2,067

Fertiliser: 95

95

Sprays:

1. Pest and diseases 740

2. Herbicides 126

---

866

Irrigation:

40

Labour:			
Fertilisation	20		
Pest & Disease spraying	95		
Herbicide spraying	8		
Irrigation	70		
Mowing	57		
Pruning	170		
Harvesting	283	835	1,357
			<hr/>
			703
Machinery:			
Fertiliser spreading	18		
Pest & Disease spraying	200		
Herbicide spraying	11		
Mowing	55		
Cartage	197	582	946
			<hr/>
			481
Miscellaneous pre-harvest:			
			70
Returns:			
Extensive	858 ctns		
- export	429	1,296	
- local	343	967	
- process	86	132	
			<hr/>
			2,395
Semi-intensive 2,530			
- export	1,256	3,793	
- local	1,012	2,854	
- process	253	387	
			<hr/>
			7,034
Intensive 4,112 ctns			
- export	2,056	6,209	
- local	1,645	4,639	
- process	411	629	
			<hr/>
			11,477
Total Production Costs Year 5			
		2,255	1,840 2,067
Total marketing Costs Year 5			
		480	1,417 2,303
			<hr/>
Deficit/ <u>Surplus</u> Year 5			
			- \$340 +3,777 +7,107
			<hr/>

Year 6

Fertiliser: 100

Sprays:

1. Pest & Disease	
spraying	850
2. Herbicides	126

---

976

Irrigation: 40

Labour:

Fertilisation	22		
Pest & Disease			
spraying	115		
Herbicide sprayin	8		
Irrigation	69		
Mowing	57		
Pruning	165		
Harvesting	522	960	1,438

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988

Machinery:

Fertiliser spreading	20		
Pest & Disease			
spraying	100		
Herbicide spraying	11		
Mowing	55		
Cartage	385	669	1,003

---

571

Miscellaneous pre-harvest: 70

Returns:

Extensive	1,673 ctns		
- export	837	2,528	
- local	669	1,887	
- process	167	256	

---

4,671

Semi-intensive	2,909		
- export	1,455	4,394	
- local	1,164	3,282	
- process	290	444	

---

8,120



Intensive	4,359 ctns			
- export	2,179	6,581		
- local	1,744	4,918		
- process	436	667		
				<hr/>
				12,166
Total Production Cost Year 6		2,745	1,840	2,067
Total Marketing Costs Year 6		937	1,629	2,441
				<hr/>
Surplus Year 6		\$989	4,651	7,658
				<hr/>
Year 7				
All Production Costs as for Year 6		2,745	1,840	2,067
Marketing Costs:				
Harvesting	961	1,075	1,467	
Cartage	670	749	1,023	
				<hr/>
		1,631	1,824	2,490
Returns:				
Extensive	2,911 ctns	8,125		
Semi-intensive	3,258 ctns		9,093	
Intensive	4,446 ctns			12,408
(max. prodn)				
Total Production Costs Year 7		2,745	1,840	2,067
Total Marketing Costs Year 7		1,631	1,824	2,490
				<hr/>
Surplus Year 7		3,749	5,429	7,851
				<hr/>

# Year 8

## Marketing Costs:

Harvesting	1,105	1,183	1,467
Cartage	770	824	1,023

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	1,875	2,007	2,490
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## Returns:

Extensive	3,347 ctns	9,341	
Semi-intensive	3,584 ctns		10,003
Intensive	4,446 ctns		12,408

Total Production Costs Year 8	2,745	1,840	2,067
Total Marketing Costs Year 8	1,875	2,007	2,490

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Surplus Year 8	\$4,721	6,156	7,851
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Yields for the intensive system have ceased to increase semi-intensive yields as follows to year 15. Extensive yields will increase as follows to year 20.

Year	Extensive	Semi-intensive
9	4,250	4,659
10	5,143	5,684
11	5,143	6,707
12	5,915	7,512
13	6,388	8,112
14	6,739	8,437
15	7,009	8,522
16	7,219	
17	7,400	
18	7,503	
19	7,586	
20	7,669	

# EXTENSIVE SYSTEM

Year	0	1	2	3	4	5	6	7	8	9
Returns				363	1,089	2,395	4,671	8,125	9,341	10,666
<u>Costs</u>										
Cultivation	111									
Fertiliser	28	35	51	75	85	95	100	100	100	
Planting	720									
Sprays										
1. Pests and diseases	8	39	57	550	612	740	850	850	850	
2. Herbicide spraying	10	10	10	126	126	126	126	126	126	
Irrigation	10	15	21	29	35	40	40	40	40	
Pruning	34	20	15							
Labour	388	308	440	556	544	703	988	988	988	
Machinery	89	84	96	289	359	481	571	571	571	
Miscellaneous pre-harvest				70	70	70	70	70	70	
Establishment costs	(1,398)									
Production Costs		(511)	(690)	(1,622)	(1,612)	(2,255)	(2,745)	(2,745)	(2,745)	(2,745)
Marketing Costs				(73)	(219)	(480)	(937)	(1,631)	(1,875)	(2,141)
Cash Flow	-1,398	-511	-690	-1,322	-742	-340	+989	+3,749	+4,721	(+5,780)
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
10	11	12	13	14	15	16	17	18	19	
Returns	12,919	14,858	16,046	16,932	17,296	18,133	18,588	18,846	19,056	19,264
Production Costs	2,745	2,745	2,745	2,745	2,745	2,745	21,745	2,745	2,745	2,745
Marketing Costs	2,591	2,980	3,218	3,396	3,532	3,638	3,730	3,781	3,823	3,855
Cash Flow	+7,583	+9,133	+10,083	+10,791	+11,019	+11,750	+12,113	+12,320	+12,488	+12,664

## SEMI-INTENSIVE SYSTEM

Year	0	1	2	3	4	5	6	7	8	9
Returns			441	2,103	5,044	7,034	8,120	9,093	10,003	11,703
<u>Costs</u>										
Cultivation	111	-	-	-	-	-	-	-	-	-
Fertiliser	30	35	78	86	93	93	93	93	93	-
Planting	1,695	-	-	-	-	-	-	-	-	-
Sprays										
1. Pests and Diseases	19	84	517	750	816	816	816	816	816	-
2. Herbicides	20	20	20	126	126	126	126	126	126	-
Irrigation	23	23	28	37	45	45	45	45	45	-
Pruning	30	18	10	-	-	-	-	-	-	-
Labour	683	281	483	716	979	979	979	979	979	-
Machinery	128	110	313	460	723	723	723	723	723	-
Miscellaneous pre-harvest	-	-	70	70	70	70	70	70	70	-
Establishment Costs	2,739	-	-	-	-	-	-	-	-	-
Production Costs	-	607	1,431	1,824	1,840	1,840	1,840	1,840	1,840	1,840
Marketing Costs	-	-	88	421	1,012	1,417	1,629	1,824	2,007	2,348
Cash Flow	-2,739	-607	-1,078	-142	+2,192	+3,777	+4,651	+5,429	+6,156	+7,815
=====										
	10	11	12	13	14	15				
Returns	14,277	16,846	18,867	20,377	21,192	21,616				
Production Costs	1,840	1,840	1,840	1,840	1,840	1,840				
Marketing Costs	2,864	3,380	3,768	4,088	4,252	4,337				
Cash Flow	+9,573	+11,626	+13,259	+14,449	+15,100	+15,439				

# INTENSIVE SYSTEM

Year	0	1	2	3	4	5	6	7	8
Returns		168	1,339	4,555	9,565	11,477	12,166	12,408	12,408
<u>Costs</u>									
Cultivation	111	-	-	-	-	-	-	-	-
Fertilisation	80	90	100	111	111	111	111	111	111
Planting	4,953	-	-	-	-	-	-	-	-
Sprays									
1. Pests and Diseases	55	178	738	965	965	965	965	965	965
2. Herbicide spraying	41	40	41	126	126	126	126	126	126
Pruning	22	14	-	-	-	-	-	-	-
Labour	1,568	382	504	948	948	948	948	948	948
Machinery	251	143	457	721	721	721	721	721	721
Miscellaneous pre-harvest	-	-	70	70	70	70	70	70	70
Establishment Costs	7,148	-	-	-	-	-	-	-	-
Production Costs	-	(833)	(1,677)	(2,067)	(2,067)	(2,067)	(2,067)	(2,067)	(2,067)
Marketing Costs	-	(54)	(268)	(914)	(1,919)	(2,303)	(2,441)	(2,490)	(2,490)
Cash Flow	(-7,148)	(-719)	-606	+1,584	+5,579	+7,107	+7,658	+7,851	+7,851

### 5.3.10 Avocados

#### Establishment Costs Year 0

##### GROUND PREPARATION:

Roundup	2 l/ha @ \$25.28/l	\$50.50
Spraying	\$10.50/ha	10.50
Rotary hoeing	x 2 @ \$25/ha	50.00
		<hr/>
		\$111.00

##### SHELTER:

Polythene	200m @ \$35/500m	\$14.00
Casuarina	200 @ \$60/100	120.00
Planting	8 hrs @ \$3.70/hr	29.50
		<hr/>
		\$163.50

##### TREES:

236 trees	@ \$11.00 each	\$2,596.00
Marking out	8 hrs @ \$3.70/hr	29.50
Planting	48 hrs @ \$3.70/hr	177.50
		<hr/>
		\$2,803.00

##### IRRIGATION:

1,062m 15mm pipe	@ \$29.96/100m	\$318.00
50m 40mm pipe	@ \$111.20/100m	55.50
Laying irrigation	24 hrs @ \$3.70/hr	98.00
		<hr/>
		\$462.50

##### TREE SHELTERS:

Corner stakes	(4x 35c each)	
	x 236	\$330.50
Sarlon	(3m x \$1/m) 236	708.00
Labour	40 hrs @ \$3.70/hr	148.00
		<hr/>
		\$1,186.50

##### TOTAL ESTABLISHMENT COST

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\$4,726.50

---

## Production Costs Year 1

### FERTILISER:

Ammo-phos	@ 0.5 kg/tree	
13:6:11:12	@ \$331.7/t	\$40.00
Sulphate of ammonia	100 g/tree @ \$204.4/t	5.00
Labour	6 hrs @ \$3.70/hr	22.00
Straw mulch		100.00
Spreading	8 hrs	29.50
		<hr/>
		\$196.50

### MOWING:

16 ha	\$24/hr x 0.25 hrs/ha	\$96.00
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### WEED CONTROL:

Handweeding	x 3 @ 4 hrs/ha	\$44.50
Shelter	4 hrs	15.00
		<hr/>
		59.50

## Production Costs Year 1

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\$352.00

## Production Costs Year 2

### FERTILISER:

Ammo-phos	1 kg/tree	\$78.50
Sulphate of ammonia	200 g/tree	10.00
Labour	6 hrs	22.00
Straw mulch		100.00
Spreading		29.50
		<hr/>
		\$240.00

### MOWING:

96.00

### WEED CONTROL:

Preglone/Simazine		
Preglone	5 l/ha @ \$10.22/l	\$30.66
Simazine	2.5 kg/ha @ \$9.42/ha	9.42
Handweeding	16 hrs	59.20
		<hr/>
		99.50

## Production Costs Year 2

---

\$435.50

## Production Costs Year 3

### FERTILISER:

Urea	150 kg/ha @ \$358.5/t	\$53.71
Superphosphate	440 kg/ha @ \$108.85/t	57.89
Muriate of		
Potash	100 kg/ha @ \$167.5/t	16.71
Dolomite	200 kg/ha @ \$12/t	34.25
Spreading	16 hrs	59.20
Straw mulch		100.00
Spreading	8 hrs	29.50

---

\$341.26

### MOWING:

96.00

### SPRAYING:

4 x Azinphos		
methyl	1 kg ai/ha @	
	\$26.16/kg	\$105.64
Labour	16 hrs	59.20

---

163.84

## Production Costs Year 3

\$601.10

---

## Marketing Costs Year 3

### PACKAGING:

Cartons	60c each x 110	\$66.00
Wrappers	(20 x 2c each) x 110	44.00
Labour	10 hrs	37.00

---

\$147.00

### HARVESTING:

10 HRS

37.00

### TRANSPORT:

\$1/ctn x 110

110.00

---

## Marketing Costs Year 3

\$294.00

---



## Production Costs Year 4

### FERTILISER:

Urea	440 kg/ha	\$157.54
Superphosphate	660 kg/ha	71.84
Muriate of Potash	200 kg/ha	33.41
Lime	200 kg/ha	34.25
Spreading	16 hrs	59.20
Straw mulch		100.00
Spreading	8 hrs	29.50

---

\$485.74

### MOWING:

96.00

### SPRAYING:

Azinphos methyl	x 6	\$159.96
Labour	20 hrs	74.00

---

\$233.96

### Production Costs Year 4

---

\$815.71

---

## Marketing Costs Year 4

HARVESTING: 55 hrs \$203.50

### PACKING:

Cartons	1,100	\$660.00
Wrappers	20 x (1,100) .02	440.00
Labour	92 hrs	339.20

---

1,439.20

### TRANSPORT:

1,100.00

---

\$3,081.90

---

## Production Costs Year 5-9

Production costs from year 4 onwards should be the same.

### Marketing Costs Year 5

Harvesting	220 hrs @ \$3.70	\$814
Packaging	4,440 ctns @ \$1	4,400
Labour	190 hrs	703
Transport	4,400 ctns x \$1	4,400
		<hr/>
		\$10,317
		<hr/>

### Marketing Costs Year 6

Harvesting	266 hrs	\$984.20
Packaging	5,500 ctns	5,500
Labour	230 hrs	851
Transport		5,500
		<hr/>
		\$12,835
		<hr/>

Marketing costs year 6-8 the same.

### Production Costs Year 9

As above plus		815.70
Tree removal	40 hrs	148
		<hr/>
Production Costs Year 9		\$963.70
		<hr/>

Marketing costs same as Year 5.

### Marketing Costs Year 10.

Harvesting	200 hrs	\$740
Packaging	4,130 ctns	4,130
Labour	180 hrs	666
Transport		4,130
		<hr/>
		\$9,666
		<hr/>

### Marketing Costs Year 11.

Harvesting	250 hrs	\$925
Packaging	4,720 ctns	4,720
Labour	200 hrs	740
Transport		4,720
		<hr/>
		\$11,105
		<hr/>

## YEARLY CASH FLOW: ONE HECTARE OF HASS AVOCADOS

Year	0	1	2	3	4	5	6	7	8	9	10	11
Revenue:												
Sales	-	-	-	2,750	27,500	110,000	137,500	137,500	137,500	110,000	103,250	118,000
less Marketing Exps	-	-	-	294	3,082	10,317	12,835	12,835	12,835	10,317	9,666	11,105
	-	-	-	2,456	24,418	99,683	124,664	124,665	124,665	99,465	93,584	106,895
Expenditure:												
Establishment	4,726	-	-	-	-	-	-	-	-	-	-	-
Production	-	352	435	601	816	816	816	816	816	816	816	816
Cash Flow	-4,726	-352	-435	1,855	23,602	98,867	123,849	123,849	123,849	98,501	92,768	106,079
Accumulated Cash Flow	-4,726	-5,078	-5,513	-3,658	19,944	118,811	242,660	366,509	490,358	588,859	681,627	787,706
Discounted Cash Flow		-306	-329	1,220	13,495	49,154	53,543	46,559	40,486	28,000	22,931	22,801

5.3.11 Macadamia Nuts  
 (1 ha orchard)  
 (1980 costs and prices)

Year 1

Returns 0

Capital Costs:

Trees	720/ha (4.5m x 2.25m hedgerows) 720 trees @ \$9.50 each	6,840
	36 trees (allowing 5% loss)	342
		<hr/> 7,182

Irrigation equipment:

210m 50mm pipe	1,323
18 sprinklers	144
	<hr/> 1,467

Knapsack sprayer: 110

---

\$8,759

---

Production costs

Land Preparation:	\$30/hr x 2	60
Labour:		
(man days)	@ \$29/day or or \$3.60/hour)	
planting (2.5)		72.50
replanting (5% loss)		5.00
irrigation (3, including installation		87.00
pruning (1.5)		43.50
weed and pest control (1, hand		
weeding, spot spraying etc.)		29.00
maintenance (1.5)		43.50
		<hr/> 280.50
Mowing:	\$21.50/hr x 3	64.50
Electricity:		150
Insurance:	\$1/\$100 value of crop	70

Rates:		30
Fertiliser:	175 kg urea	56
	250 kg super	22
	75 kg muriate of potash	9
		<hr/> 87
	spreading (3 time/year)	150
		<hr/>
		102
Miscellaneous (chemicals, pruners, etc.)		50
		<hr/> \$807.00
		<hr/>
Cash Flow at end of Year 1		-9,566
Year 2		
Returns		0
Capital Costs		
Trees:	(allowing 4% loss)	
	29 trees @ \$9.50 ea.	275
Production Costs		
Labour:		
Planting		5.00
Pruning (1.5)		43.50
Weed and pest control (1)		29.00
Irrigation (1.0)		29.00
Maintenance (1.5)		43.50
		<hr/> 150.00
Mowing:	\$21.50/hr x 3	64.50
Electricity:		150
Insurance:		70
Rates:		30
Fertiliser:	As for Year 1	102
Miscellaneous:		50
		<hr/> \$891.50

Cash Flow at end of Year 2

-891.50

Year 3

Returns

0

Capital Costs:

Trees

(allowing for 3%  
loss)

22 trees @ \$9.50 ea 205

Shed

14m x 6m x 3m (for

packing, drying,

storage etc.) 3,500

---

3,705

---

Production Costs:

Labour:

Planting

5.00

Weed and pest control (1)

29.00

Irrigation (1)

29.00

Maintenance (1.5)

43.50

---

106.50

---

Mowing:

\$21.50/hr x 3

64.50

Electricity:

150

Insurance:

70

Rates:

30

Fertiliser:

As for Year 1

102

Miscellaneous:

50

---

\$523.00

---

Cash Flow at end of Year 3

-4,278

Year 4

Returns	360 kg nuts (in shell) @ \$2.30/kg (1980 Australian price)	828	
Less Harvesting and marketing costs	7% of gross return	58	
			<hr/>
			770
			<hr/>
Production Costs:			
Labour			
Weed and pest control (1)		29.00	
Irrigation (1)		29.00	
Maintenance (1.5)		43.50	
			<hr/>
			101.50
Mowing:	\$21.50/hr x 3	64.50	
Electricity:		150	
Insurance:		90	
Rates:		30	
Fertiliser:	(double rate of Year 1)	194	
Miscellaneous:		50	
			<hr/>
			680.00
			<hr/>
Cash Flow at end of Year 4		+90	

Year 5

Returns	720 kg nuts (in shell)	1,656	
less Harvesting and Marketing Costs	(7% gross return)	-116	
			<hr/> 1,540
Production Costs			
Labour:			
Weed and pest control (1.5)		43.50	
Raking and burning (2.5)		72.50	
Irrigation (1)		29.00	
Maintenance (1.5)		43.50	
			<hr/> 188.50
Mowing:	\$21.50/hr x 3		64.50
Electricity:			150
Insurance:			130
Rates:			30
Fertiliser:	(double rate of Year 1)		194
Miscellaneous:			100
			<hr/> \$857.00
			<hr/>
Cash Flow at end of Year 5		+683	



# Year 6

Returns	3,200 kg nuts (in shell)	7,360
less Harvesting and Marketing Costs	(7% gross return)	515
		<hr/> 6,845
Production Costs		
Labour:	As for year 5	188.50
Mowing:	\$21.50/hr x 2	43
Electricity:		150
Insurance:		130
Rates:		30
Fertiliser:	(double rate of Year 1)	194
Miscellaneous:		100
		<hr/> \$635.50
		<hr/>
Cash Flow at end of Year 6		+6,209.50

# Year 7

Returns	5,400 kg nuts (in shell)	14,420
less Harvesting and Marketing costs	(7% gross return)	870
		<hr/> 11,550
		<hr/>
Production Costs		
Labour:		
Weed and pest control (1.5)		43.50
Raking and burning (3)		87.00
Irrigation (1)		24.00
Pruning (1.5)		43.50
Maintenance (1.5)		43.50
		<hr/> 246.50
		<hr/>
Mowing:		43

Electricity:	150
Insurance:	130
Rates:	30
Fertiliser:	194
Miscellaneous:	100
	<hr/>
	893.50
	<hr/>

Cash Flow at end of Year 7                      +10,656.50

#### Year 8

Returns	7,200 kg nuts (in shell)	- 16,560
less Harvesting and Marketing costs	(7% gross return)	1,159
		<hr/>
		16,400
		<hr/>
Production Costs		
Labour:	As for year 7	246.50
Others:	As for year 7	647.00
		<hr/>
		\$893.50
		<hr/>

Cash Flow at end of year 8                      +14,506.50

NB: N.Z. Data unavailable after year 8.  
Overseas information about yields is variable.

#### Year 9

Returns	9,800 kg nuts (in shell)	22,540
less Harvesting and Marketing Costs	(7% gross return)	1,578
		<hr/>
		\$20,962
		<hr/>
Production Costs:	As for year 8	\$893.50
		<hr/>

Cash Flow at end of year 9	+20,068.50
----------------------------	------------

Year 10

Returns	10,600 kg nuts (in shell)	24,380
less Harvesting and Marketing Costs	(7% gross return)	1,707
		<hr/>
		\$22,673

Production Costs:	As for year 9	<hr/>
		\$893.50

Cash Flow at end of Year 10	+21,790.50
-----------------------------	------------

Year 11

Returns	11,700 kg nuts (in shells)	26,910
less Harvesting and Marketing Costs		1,884
		<hr/>
		\$25,026

Production Costs:	As for year 10	<hr/>
		\$893.50

Cash Flow at end of Year 11	+24,132.50
-----------------------------	------------

Year 12

Returns	14,000 kg nuts (in shell)	32,200
less Harvesting and Marketing Costs		2,254
		<hr/>
		\$29,946

Production Costs:	As for year 11	<hr/>
		\$893.50

Cash Flow at end of Year 12	+29,052.50
-----------------------------	------------

Year 13

Returns	14,700 kg nuts (in shell)	33,810	
less Harvesting and Marketing Costs		2,367	
			<hr/>
			\$31,443
Production Costs:			
As for Year 12 except Labour:			
Weed and pest control (2.5 man days)		72.50	
			\$922.50
			<hr/>
Cash Flow at end of Year 13		+30,520.50	

Year 14

Returns	15,600 kg nuts	35,880	
less Harvesting and marketing Costs		2,512	
			<hr/>
			\$33,368
			<hr/>
Production Costs:	As for year 13		\$922.50
			<hr/>
Cash Flow at end of Year 14		+32,445.50	

Year 15

Returns	16,200 kg nuts	37,260	
less Harvesting and Marketing Costs		2,608	
			<hr/>
			\$34,652
			<hr/>
Production Costs:	As for Year 14		\$922.50
			<hr/>
Cash Flow at end of Year 15		+33,729.50	

# SUMMARY CASH FLOW FOR A ONE HECTARE MACADAMIA ORCHARD

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Income	-	-	-	828	1,656	7,360	12,420	16,560	20,962	24,380	26,910	32,200	33,810	35,880	37,260
less: Harvesting + Marketing Costs	-	-	-	58	116	515	870	1,159	1,578	1,707	1,884	2,254	2,367	2,512	2,608
				770	1,540	6,845	11,550	15,400	20,962	22,673	25,026	29,946	31,443	33,368	34,652
Production Costs	807	617	573	680	857	636	894	894	894	894	894	894	894	894	894
Capital Costs	8,759	275	3,705	-	-	-	-	-	-	-	-	-	-	-	-
Expenditure Total	9,566	892	4,278	680	857	636	894	894	894	894	894	894	894	894	894
Net Cash Flow	-9,566	-892	-4,278	+90	+683	+6,208	+10,656	+14,506	+20,068	+21,798	+24,132	+29,052	+30,520	+32,445	+33,729

### 5.3.12 Asparagus

#### ASSUMPTIONS

1. Production is in Canterbury of Mary Washington 500 W.
2. Establishment method - crown transplants, grown on property plant density 27,000 pl/ha.
3. All production is sold to processor with 85% grade 1, 15% grade 2. Price is \$1.33/kg grade 1, \$0.84/kg grade 2. Processor provides packaging, pays transport.
4. All cultivation, spraying, and fertilising is done by contractor at contract rates
5. Labour for harvesting cost \$300/t picked.

#### TYPICAL YEAR - YEAR 3

##### Costs

##### Fertiliser

Calcium Ammonium Nitrate	800 kg/ha @ \$323/t	259
Superphosphate	300 kg/ha @ \$110/t	33
Muriate of potash	350 kg/ha @ \$140/t	49
Lime	0.5 t/ha @ \$ 53/t	27
		<hr/> 368

##### Spray

Pre-emergent (2 x)			
Paraquat	21/ha	@ \$ 10/1	40

##### Cultivation

Mowing		\$ 43/ha	43
Discing (2 x)		\$ 20/ha	40
Harrow		\$ 20/ha	20
			<hr/> 103

##### Machinery

Fertiliser spreading (2 x)	1.5 hr/ha @ \$ 8/hr	24
Spraying (2 x)	1.0 hr/ha @ \$ 4/hr	22
		<hr/> 46

Labour			
Fertiliser spreading	3 hrs	@ \$ 4/hr	12
Spraying	2 hrs	@ \$ 4/hr	8
Harvesting	\$300/t yield 1.75t		525
			<hr/> 545

Capital Cost			
Cutting Rig	\$2,000 over 10 ha		200
			<hr/>
TOTAL COSTS YEAR 3			1302
			<hr/>

Returns:

1.75 l - Grade 1	(@ 1.33)	1978
- Grade 2	(@ 0.84)	220
		<hr/>
TOTAL		2198
		<hr/>

Surplus for Year \$896.

FOR ASPARAGUS CASH FLOW \$/ha - see next page.

YIELD PRICE MATRIX

-,-,0.5,1.5,	-,-,1.75,3.0,	-,-,2.0,3.5,
2.0,2.0,1.5	4.0,4.0,3.0	5.0,5.0,3.5

Grade 1			
\$1.00/kg			
	-963	+5,067	+7,185

Grade 2			
\$0.68/kg			

Grade 1			
\$1.33/kg			
	+752	+9,860	+12,971

Grade 2			
\$0.84/kg			

Grade 1			
\$2.00/kg			
	+4,825	+19,155	+25,387

Grade 2			
\$1.40/kg			

ASPARAGUS CASH FLOW (\$/ha)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gross Income	-	-	2,198	3,769	5,026	6,026	3,769	-	-	2,198	3,769	5,026	5,026	3,769
- harvesting/ marketing costs	-	-	525	900	1,200	1,200	900	-	-	525	900	1,200	1,200	900
Net Income	-	-	1,673	2,869	3,826	3,826	2,869	-	-	1,673	2,869	3,826	3,826	2,869
Working Costs														
Cultivation	141	103	103	103	103	103	103	141	103	103	103	103	103	103
Seed	90	-	-	-	-	-	-	90	-	-	-	-	-	-
Fertiliser	589	52	368	368	368	368	368	589	52	368	368	368	368	268
Sprays	14	41	40	40	40	40	40	14	41	40	40	40	40	40
Machinery	360	34	46	46	46	46	46	360	34	46	46	46	46	46
Labour	664	14	20	20	20	20	20	6644	14	20	20	20	20	20
Total Working Costs	1,874	244	577	577	577	577	577	1,874	244	577	577	577	577	577
Capital Costs	-	-	200	-	-	-	-	-	-	-	-	-	-	-
Net Cash Flow	-1,874	-244	+896	+2,292	+3,249	+3,249	+2,292	-1,874	-244	+1,096	+2,292	+3,249	+3,249	+2,292
Accumulated Net Cash Flow	-	-2,118	-1,222	+1,070	+4,319	+7,568	+9,860	+7,986	+7,742	+8,838	+11,130	+14,379	+17,628	+19,920



## 5.4 BUDGETS

### 5.4.1 Mixed Cropping and Livestock

The following budget is for a typical Canterbury mixed cropping and livestock farm for the period 1 July 1981 to 30 June 1982. Prices used are as at November 1981.

The figures used do not represent a specific situation but are merely offered as an example use of the Lincoln College budget teaching forms. These teaching budget forms are only one of many different forms and layouts available for budgeting purposes.

A cash flow is also included.

## Farm Cash Budget

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For Period 1 July 1981 to 30 June 1982

Farmer \_\_\_\_\_

Property \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Farm Area

Total 233.1984 ha

Effective 221.0610 ha

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Prepared by \_\_\_\_\_

Date of Preparation 10 Nov. 1981

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**Lincoln College**

University College of Agriculture  
Canterbury  
New Zealand

**Department of Farm Management and Rural Valuation**

# STATEMENT OF ASSETS (AT MARKET VALUE)

PROPERTY OF: \_\_\_\_\_

DATE 9 / 11/81

LAND AND IMPROVEMENTS				IF LEASEHOLD ONLY			
Property	Area	Tenure	Value as F/H	Lessors Int	Lessees Int		
	158	F/H	441,000	80%	20%		
	75	L/H	206,000	164,800	41,200		
Totals			441,000				647,000
LIVESTOCK							
TOTAL VALUE OF OWNER'S INTEREST IN LAND & IMPS.							
Sheep: Brd & Cls	Number	\$/hd	Total	Breed & Class	Number	\$/hd	Total
1120 CPW m/a Bwe	1120	21	23,520				
CPW Hoggets	350	25	8,750				
Wethers	50	15	750				
Sub Totals				Sub Totals			
Total No. Sheep				TOTAL VALUE OF SHEEP			
Cattle:							33,020
R 3 yr Steers	72	300	21,600				
Sub totals				Sub totals			
Total No. Cattle				TOTAL VALUE OF CATTLE			
Other Livestock:							21,600
Sub Totals				Sub Totals			
Total No.				TOTAL VALUE OF OTHER LIVESTOCK			
PLANT AND MACHINERY							
Motorized: Item				Non Motorized: Item			
Bedford Truck		Value		Plough		Value	
Fiat Tractor		8,000		Grubber		500	
Ford Tractor		8,020		Harrows		600	
Massey F. Tractor		4,014		Grain Bin		850	
Motorbike		900		Cultivator		1,950	
				Baler		900	
Total Motorized Plant		23,034		Total Non Motorized Plant		5,054	
PRODUCE ON HAND							
TOTAL VALUE OF PLANT AND MACHINERY							
Type	Amount	Price	Total	Type	Amount	Price	Total
				Nui Ryegrass	9,790	1.10	10,790
CURRENT ASSETS							
TOTAL VALUE PRODUCE ON HAND							
Type	Amount			Type	Amount		
TOTAL CURRENT ASSETS							
NON FARM ASSETS							
TOTAL FARM ASSETS							
Type	Amount			Type	Amount		
TOTAL NON FARM ASSETS							
TOTAL ASSET VALUE							
							740,538

# STATEMENT OF LIABILITIES

PROPERTY OF:

DATE 1 / 7 / 81

TERM LIABILITIES					Amount
Type	Creditor	Orig. Debt	Int %	Repayment Terms	Outstand.
Mortgages	-	55,000	13%	25 year loan	55,000
	(Solicitors)				
	Family	160,000	6%	Vendob Mortgage	153,243
	Rural Bank	35,000	9%	25 year amortised	31,660
Loans					
Term Loan	Bank	2,500	14%	5 year loan (table 1.)	1,667
Hire Purchase					
TOTAL TERM LIABILITIES					241,570
CURRENT LIABILITIES					Amount
Type	Creditor	Int %	Terms of Loan		
Bank					
Overdraft(s)					
Stock Firm					8,735
Account(s)					
Sundry	( 9752				
Creditors	Family ( 9509				9,752
	( 2000				9,509
					2,000
Income Tax	Terminal due	7 / 9 / 82			1,411
	1st Provisional due	/ /			
	2nd Provisional due	/ /			
TOTAL CURRENT LIABILITIES					31,407
TOTAL FARM LIABILITIES					272,977
NON FARM LIABILITIES					Amount
Type	Creditor	Int %	Terms		
TOTAL NON FARM LIABILITIES					-
TOTAL LIABILITIES					272,977

## SUMMARY

TOTAL ASSETS	740,538	less TOTAL LIABS.	272,977	= TOTAL EQUITY	467,561
Total Farm Assets	740,538	less Total Farm Liabs	272,977	= FARM EQUITY	467,561

## ANALYSIS

TOTAL LIABILITIES	=	37%	% of TOTAL ASSETS
TOTAL EQUITY	=	63%	% of TOTAL ASSETS
TOTAL FARM LIABILITIES	=	37%	% of TOTAL FARM ASSETS
FARM EQUITY	=	63%	% of TOTAL FARM ASSETS

## FARM CASH BUDGET SUMMARY

### PROPERTY OF

PERIOD: 1/7/81 - 30/6/82

EXPENDITURE	\$	REVENUE	\$
<b>STOCK PURCHASES</b>		<b>SHEEP</b>	
Sheep		Wether lambs 90 @ \$20.13	1,827
5 @ \$200	1,000	Wether lambs 685 @ \$18.85	12,912
		Ewe lambs 360 @ \$20.00	7,200
		C.F.A. ewes 277 @ \$13.00	3,601
Cattle		Hoggets 46 @ \$25.00	1,150
72 @ \$210	15,120		
Other Livestock		<b>WOOL &amp; SKINS</b>	
		All wool 6280 kg @ \$2.80	17,584
<b>WORKING EXPENSES</b>		Skins 20 @ \$5	100
Wages	9,924		
Animal Health	1,294		
Breeding and Testing	-	<b>CATTLE</b>	
Crop Expenses	11,591	R 3 yr Steers 72 @ \$280	20,160
Dairy Shed Expenses	-		
Electricity	1,500		
Feed	400		
Fertiliser and Lime	5,452		
Freight	4,296		
Miscellaneous Contracts	1,463		
Seeds	4,365		
Selling Charges	-	<b>DAIRY</b>	
Shearing Expenses	1,580		
Water Charges	500		
Weed & Pest Control	-		
Other			
<b>REPAIRS AND MAINTENANCE</b>		<b>OTHER LIVESTOCK</b>	
Buildings	600		
Other Improvements	1,200		
Plant (non motorised)	2,800		
<b>VEHICLE RUNNING EXPENSES</b>			
Fuel	7,960	<b>CASH CROPS</b>	
Repairs & Maintenance	3,300	Wheat 97 t @ \$195	18,915
Registration	100	Barley 222 t @ \$185	41,070
Car Expenses	960		
<b>ADMINISTRATION</b>			
Professional Fees	1,150		
Telephone and Mail	534	<b>SMALL SEEDS</b>	
Other Expenses	145	'Nui' Ryegrass 9.0 t @ \$1.10/kg	9,900
		White clover 2500 kg @ \$2.80/kg	7,000
<b>STANDING CHARGES</b>			
Insurance	800		
Interest	18,017	<b>OTHER FARM PRODUCE</b>	
Rates	2,975		
Rent	6,355		
<b>TOTAL FARM CASH EXPENDITURE</b>	<b>105,371</b>	<b>TOTAL FARM CASH REVENUE</b>	<b>141,419</b>

FARM OPERATING CASH SURPLUS <del>OR DEFICIT</del>	\$36,048	c.f. to page 4.
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# CASH FORECAST STATEMENT

PROPERTY OF \_\_\_\_\_

PERIOD: 1/7/81 - 30/6/82

FURTHER CASH EXPENDITURE	\$	FURTHER CASH REVENUE	\$
CAPITAL		CAPITAL	
Development		Asset Realisations	-
Trees	326		
Water Supply	295		
Plant Purchases	-	Plant Sales	-
Principal Repayments	-	Loans Uplifted	-
All loans are amortised			
Off-Farm Investments	-	Gifts	-
		Govt Assistance & Incentives	-
INCOME EQUALISATION DEPOSIT	-	INCOME EQUALISATION WITHDRAWAL	-
TAXATION PAYMENTS		TAXATION REFUND	-
Terminal			
1st Provisional due 7/9/81	5,215		
2nd Provisional due 7/3/82	7,320		
NON-FARM EXPENDITURE		NON-FARM REVENUE	
Drawings	11,120	Interest	-
Life Insurance	270		
School Fees	-	Dividends	-
Donations	-		
Other	-	Other	-
TOTAL FURTHER CASH EXPENDITURE	24,546	TOTAL FURTHER CASH REVENUE	-
FARM OPERATING CASH DEFICIT (xp3)		FARM OPERATING CASH SURPLUS (xp3)	36,048
TOTAL B	24,546	TOTAL A	36,048

TOTAL A	36,048
LESS TOTAL B	24,546
NET CASH RESULT	11,502

## CASH RECONCILIATION

TRADING BANKS (NET ±)	6,321	NET OPENING CASH POSITION (±)	-14,907
STOCK FIRMS (NET ±)	-8,735		
SUNDRY CREDITORS (-)	-21,261	NET CASH RESULT (±)	11,502
SUNDRY DEBTORS (+)	+8,768		
NET OPENING CASH POSITION (±)	-14,907	NET CLOSING CASH POSITION (±)	-3,405

# SHEEP RECONCILIATION

PROPERTY:

PERIOD: 1 July 1981 - 30 June 1982

Stock Units Opening Rate 1/7/81	Class of Stock Breed	Opening Nos. @ 1/7/81	Nat. Incr.	Killed	Deaths and Losses	Sales	Purch- ases	Closing Nos. @ 30/6/81	Class of Stock	Closing s.u.'s 30/6/82
280	Ewes									
	Lambs		710							
	Unmated Hgts			-	-	360			Unmated Hgts	
	Mated Hgts	350		-	4	46	-	350	Mated Hgts	280
	Ewes: 2th							300	Ewes: 2th	300
	4th								4th	
	6th								6th	
	4yr	1170	1170		23	277	-	870	4yr	870
	5yr								5yr	
	6yr								6yr	
	Aged TOTAL EWES	1520						1520	Aged TOTAL EWES	
24.5	Wethers - m.s. and wether Lambs		810							
	Hgts	35		34	1	775	-	35	Hgts	24.5
	2th								2th	
	Aged TOTAL WETHERS	35						35	Aged TOTAL WETHERS	
	Rams									
12	Lambs		-							
	Hgts								Hgts	
	2ths	5					5	5	2ths	
	Aged TOTAL RAMS	15		5	-	-	-	10	M.Age TOTAL RAMS	
	TOTAL SHEEP	1570	1520	39	28	1458	5	1570	TOTAL SHEEP	12

		(a)	(b)	(c)	(d)	(e)	(f)	(g)		
1487	TOTAL S.U.'s ÷	221	EFFECTIVE AREA =	6.72	S.U.'s /ha	S.U.'s /ha	6.72 =	1487 ÷	221	

LAMBING PERFORMANCE (Based on Ewes to Ram)  
Tailing = NA % Survival to Sale = 100 %

DEATH RATES

Ewes = 2 % Hgts = 1 % Lambs = NA % Rams = NA % Total (1) must = Total (2)

RECONCILIATION

(1) Totals a + b + f = 3095

(2) Totals c + d + e + g = 3095

# SHEEP PRODUCTION

PROPERTY OF: \_\_\_\_\_

PERIOD 1/7/81 - 30/6/82

LAMB RECONCILIATION				Disposal					
Natural Increase				Sales					
Ewes to Replacement Sire				To Works	Store	Retain	Deaths	Killed	TOTAL
		710	Ewe Lambs	FOM	360	350	-	-	710
				x Feed					
		720	Wether Lambs	FOM		35	-	-	720
				x Feed					
1170	Ewes @ 122% =			685					
Ewes to Terminal Sire									
		90	MS Lambs	FOM		-	-	-	90
				x Feed					
350	Ewes @ 26% =			90					
1520	Total Ewes	1520	Total Lambs	775	360	385	-	-	1520

FLOCK WASTAGE STATISTICS			
Avg Number of Lambings per Ewe	=	3.9	[Total Ewes : Number annual reps]
Replacements as % of Total Ewe Flock	=	19.7 %	[Annual reps : Total Ewes x 100]
Annual Culling Rate as %	=	18.3 %	[Annual Cull Ewes : Total Ewes x 100]
SALES			

Class of Sheep Sold	Number	Carcass Wgt/hd	Total Wgt(kg)	Gross Price		TOTAL SALES
				per kg	per hd	
Wks Lambs	90	14 kg	1260	1.45	\$20.13	1,827
	685	13 kg	8905	1.45	\$18.85	12,912
Store Lambs	360	-	-	-	\$20	7,200
Total No. Lambs Sold	1135					
Cull Ewes	277	-	-	nett	\$13	3,601
Hoggets	46	-	-	nett	\$25	1,150
Others						
TOTALS						26,690

WOOL						
Class of Sheep Sold	No. Sheep Shorn	Kg per hd	Total Wgt (kg)	Price/kg	NETT	TOTAL SALES
Main Shear: All up shearing						
1570 @ 4.0 kg each	1570	4.0	6280	2.80		17,584
Sub Totals						
Crutchings						
Sub Total						
TOTALS						17,584

SKINS				TOTAL SKINS	
Slings @	=		Others @ 5	=	100
OTHER SHEEP REVENUE.	Type of Produce Sold	Amount	Unit Price	TOTAL SALES	
Skins 20 @ \$5 each					
TOTALS					

TOTAL SHEEP & WOOL CASH REVENUE 44,374



# **BEEF CATTLE RECONCILIATION**

PROPERTY: \_\_\_\_\_

PERIOD: 1/7/81 - 30/6/82

Stock Units Opening 1/7/81	Class of Stock Breed	Opening Nos. @ 1/7/81	Natural Increase	Killed	Deaths and Losses	Sales	Purch- ases	Closing Nos. @ 30/6/82	Class of Stock	Closing s.u.'s 30/6/82
<b>Heifers</b>										
	Calves								Calves	
	R1yr								R1yr	
	Dry								Dry	
	R2yr								R2yr	
	I.C.								I.C.	
	R2yr								R2yr	
	I.C.								I.C.	
	R3yr								R3yr	
	M.A.								M.A.	
	Cows								Cows	
	TOTAL BR. COWS								TOTAL BR. COWS	
<b>Steers</b>										
	Calves								Calves	
	R1yr	0							R1yr	
360	5.0 R2yr	72					72	72	R2yr	360
	R3yr					72		0	R3yr	
	R3yr + TOTAL STEERS	72						72	R3yr + TOTAL STEERS	
<b>Bulls</b>										
	Calves								Calves	
	R1yr								R1yr	
	R2yr								R2yr	
	M.A.								M.A.	
	TOTAL BULLS								M.A.	
	TOTAL CATTLE	72				72	72	72	TOTAL CATTLE	
360	TOTAL SU's	221	a	b	c	d	e	f	g	
			EFFECTIVE AREA =	1.63	SUs/ha	SUs/ha	1.63	=	360	÷ 221

CALVING PERFORMANCE (Based on Cows Mated)

Cows = NA %: Heifers = NA %:

DEATH RATES

Cows = NA %: R1yr Hfs = NA %: R2yr Hfs = NA %

Bulls = NA %: R1yr Sts = NA %: Steers = 0 %

RECONCILIATION

(1) Totals a + b + f = 144

(2) Totals c + d + e + g = 144

Total (1) must = Total (2)

## BEEF CATTLE PRODUCTION

PROPERTY OF:

PERIOD: 1/7/81 - 30/6/82

## CALF RECONCILIATION

Cows to Replacement Sire				Sales		Retain	Deaths	Total
	Cows @	%	Hf. Calves	Weaners	Vealers			
			Bull Calves					
Cows to Terminal Sire								
	Cows @	%	M.S. Calves					
N/A	Total Cows	N/A	Total Calves	N/A	N/A	N/A	N/A	N/A

## HERD WASTAGE STATISTICS

Avg. number of Calvings/Cow = TOTAL COWS  ÷ No. An. Reps  =

$$\text{Number Annual Reps } \boxed{\text{N/A}} \div \text{TOTAL COWS } \boxed{\text{N/A}} = \text{Reps as \% of Total Herd} = \boxed{\text{N/A}}$$

Annual Culling Rate =  $\left[ \frac{N}{A} \% \right]$  of TOTAL COWS.

## SALES

Class of Cattle Sold	Number	Carcass Wgt/hd	Total Wgt	Gross Price per kg	Price per hd	TOTAL SALES
R 3 yr steers	72	250 kg	NETT	PRICE	\$280	20,160
TOTALS						20,160

## OTHER BEEF CATTLE REVENUE

Type of Produce Sold	Amount	Unit Price	TOTAL SALES
TOTALS			20,160

TOTAL BEEF CATTLE CASH REVENUE

## COMMENTS

These cattle are sold by - in June when the schedule and butcher demand are high. A nett price of \$280 may be somewhat conservative.

## SEEDS, MANURE YIELDS SCHEDULE

Pdk	ha Area	Programme		Yield		Seeds		Lime		Fertiliser		
		From	To	Per Ha	Total	Per Ha	Total	Per Ha	Total	Type	Per Ha	Total
1	2.62	BARLEY	BARLEY	4.5 t	11.8 t	121 kg	317 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	0.5 t
2	2.02	TAMA	TAMA	GRAZING		40 kg	81 kg	-	-	Sup.	125 kg	0.2 t
3	8.09	WHEAT	BARLEY	4.5 t	36.4 t	121 kg	979 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	2.0 t
4	8.49	WHEAT	BARLEY	4.5 t	38.2 t	121 kg	1027 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	2.0 t
5	7.68	BARLEY	RYEGRASS	1.0 t	7.7 t	40 kg	307 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	375 kg	2.5 t
6	2.83	BARLEY	BARLEY	4.5 t	12.7 t	121 kg	342 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	0.5 t
7	6.47	WHEAT	BARLEY	4.5 t	29.1 t	121 kg	783 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	1.6 t
8	1.00	NO CHANGE		WILL	REMAIN	IN WALNUT TREES		-	-	-	-	-
9	1.60	WHEAT	BARLEY	4.5 t	7.2 t	121 kg	194 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	0.4 t
10	7.28	NO CHANGE		-	PERMANENT	PASTURE		-	-	-	-	-
11	8.50	NO CHANGE		-	PERMANENT	PASTURE		-	-	-	-	-
12	8.60	NO CHANGE		-	PERMANENT	PASTURE		-	-	-	-	-
13	3.23	TAMA	TAMA	GRAZING		40 kg	129 kg	-	-	Sup.	125 kg	0.8 t
14	2.83	TAMA	TAMA	GRAZING		40 kg	113 kg	-	-	Sup.	125 kg	0.6 t
15	2.83	LUCERNE	LUCERNE	-	-	-	-	-	-	-	-	-
16	2.83	NO CHANGE		-	-	-	-	-	-	-	-	-
17	1.20	NO CHANGE		-	-	-	-	-	-	-	-	-
18	2.83	NO CHANGE		-	-	-	-	-	-	-	-	-
19	3.23	NO CHANGE		-	-	-	-	-	-	-	-	-
20	3.64	NO CHANGE		-	-	-	-	-	-	-	-	-
21	3.08	BARLEY	BARLEY	4.5 t	13.8 t	121 kg	373 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	0.8 t
22	7.28	NO CHANGE		-	-	-	-	-	-	-	-	-
23	4.85	TAMA	TAMA	GRAZING		40 kg	192 kg	-	-	Sup.	125 kg	0.6 t
24	4.20	NO CHANGE		-	-	-	-	-	-	-	-	-
25	4.20	BARLEY	BARLEY	4.5 t	14.6 t	121 kg	391 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	0.8 t

Fertilisers	Totals (Tonnes)
Lime	

[illegible]

# SEEDS, MANURE YIELDS SCHEDULE

Pdk	Area	Programme		Yield		Seeds		Lime		Fertiliser		
		From	To	Per Ha	Total	Per Ha	Total	Per Ha	Total	Type	Per Ha	Total
26	2.02	NO CHANGE		-	-	-	-	-	-	-	-	-
27	4.04	LUCERNE	LUCERNE	-	-	-	-	-	-	-	-	-
28	5.66	NO CHANGE		-	-	-	-	-	-	-	-	-
29	4.45	CLOVER	WHEAT	4.5 t	20.0 t	134 kg	596 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	375 kg	1.5 t
30	8.9	WHEAT	BARLEY	4.5 t	40.0 t	121 kg	1076 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	2.1 t
31	4.04	CLOVER	WHEAT	4.5 t	18.3 t	134 kg	541 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	375 kg	1.5 t
32	4.45	CLOVER	WHEAT	4.5 t	20.0 t	134 kg	596 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	375 kg	1.5 t
33	8.90	TAMA	TAMA	G R A Z I N G		40 kg	356 kg	-	-	Sup.	125 kg	1.1 t
34	7.28	TAMA	TAMA	G R A Z I N G		40 kg	292 kg	-	-	Sup.	125 kg	0.9 t
35	4.09	CLOVER	WHEAT	4.5 t	18.4 t	134 kg	549 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	375 kg	1.5 t
36	4.00	WHEAT	BARLEY	4.5 t	18.0 t	121 kg	484 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	250 kg	1.0 t
37	10.11	BARLEY	GRASSEED	1.0 t	10.1 t	40 kg	404 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	375 kg	3.7 t
38	4.40	NO CHANGE		-	-	-	-	-	-	-	-	-
39	4.45	CLOVER	WHEAT	4.5 t	20.0 t	134 kg	596 kg	-	-	NH <sub>4</sub> SO <sub>4</sub>	375 kg	1.5 t
40	4.45	NO CHANGE		-	-	-	-	-	-	-	-	-
41	3.60	NO CHANGE		-	-	-	-	-	-	-	-	-
42	3.60	NO CHANGE		-	-	-	-	-	-	-	-	-
43	3.60	NO CHANGE		-	-	-	-	-	-	-	-	-
44	28.30	NO CHANGE		-	-	-	-	-	-	-	-	-

Fertilisers	Totals (tonnes)
NH <sub>4</sub> SO <sub>4</sub>	18.3 t
Super	4.2 t
Lime	Nil

Seeds	Totals	Seeds	Totals
Barley	5966 kg	Tama Ryegrass	1163 kg
Nui Ryegrass	711 kg		
Wheat	2878 kg		

## CROP PRODUCTION

PROPERTY OF: \_\_\_\_\_

PERIOD: 1/7/81 - 30/6/82

### CURRENT YEAR'S PRODUCTION

Crop	Area (ha)	Ave. Yield (kg)	Total Production (kg)
Barley	49.31	4500	221,895
Wheat	21.48	4500	96,660
Ryegrass	18.79	1000	18,790
Totals	89.58		337,345

### CROP RECONCILIATION (kilograms)

Crop	Opening	Production	Purchases	Sales	Used	Closing
Barley	Nil	222 t	-	222 t	-	-
Wheat	Nil	97 t	-	97 t	-	-
Ryegrass "Nui"	Nil	18,790 kg	-	9,000 kg	-	9,790 kg
Clover "Huia"	2500 kg	-	-	2,500 kg	-	Nil
Total kg	(a) 2500	(b) 337,790	(c) -	(d) 330,500	(e) -	(f) 9,790

Reconciliation (1) Totals a + b + c = 340,290      Total (1) must  
 (2) Totals d + e + f = 340,290      equal total (2)

### HAY RECONCILIATION (Bales)

Type	Opening	Produced	Purchased	Sales	Used	Closing
Square bales	-	2000	-	-	1800	200
Big round	2	225	-	-	217	10
Totals	(a) 2	(b) 2225	(c) -	(d) -	(e) 2017	(f) 210

Reconciliation: (a) + (b) + (c) 2227 = (d) + (e) + (f) 2227

### CROPS USED

Crop	Quantity	Use (Feed or Seed)
Tama Ryegrass	27.07 ha	Winter greenfeed

### CROP SALES

Crop	Quantity	How marketed	Unit Price	Total
Wheat	97 tonnes	Flour mill	\$195/t	18,915
Barley	222 tonnes	Malting Company	\$185/t	41,070
Ryegrass "Nui"	9000 kg	Wrightson N.M.A.	\$1.10/kg	9,900
White Clover	2500 kg	Wrightson N.M.A.	\$2.80/kg	7,000

**TOTAL CROP CASH REVENUE 76,885**

# BUDGET WORKSHEETS

A

## LIVESTOCK PURCHASES (Excluding Freight)

Sheep	\$	Cattle-Beef	\$
Rams 5 @ \$200	1,000	R 1 yr Steers 72 @ \$210	15,120
	1,000		15,120
Other Livestock (specify)		Dairy	
			16,120

## WORKING EXPENSES

### WAGES

Employee	Time Employed	Rate of Pay	Totals
Married Man	44 hr/wk + OT	\$140/wk	7,280
Single Person	Temporary	\$4/hour	2,644
			9,924

### ANIMAL HEALTH

Vet Fee	-	Cattle	
Plus Visits @ \$	-	Spraying cattle @ \$ /hd	-
Sheep		Drenching cattle @ \$1.2/hd	87
Dipping 1520sheep @ \$0.10/hd	152	Ear Tags @ \$ /hd	-
Drenching 1470 ewes @ \$0.25/hd	368	Vacc'n cattle @ \$ /hd	-
1520lambs @ \$0.20/hd	304	Preg. Test cows @ \$ /hd	-
Vacc'n 1520sheep @ \$0.12/hd	183	Dairy	
- lambs @ \$ /hd	-	Vacc'n cattle @ \$ /hd	
Dckng Rings 20 pkts @ \$10 /pkt	200	Bloat Control	
Ear Tags NTL @ \$ /100	-	Ear Tags @ \$ ea	
Footrot NTL	-	Mastitis Control	
		Other livestock	
	1207		
			1,294

### BREEDING AND TESTING

A.B.	Cows @ \$	per cow	=
Herd Testing	Herd fee @ \$	plus per cow	=
Pregnancy Testing	Cows @ \$	per cow	=
Breeding group costs			
			-

TOTAL  
CARRIED  
FORWARD

27,338

B.

TOTAL  
BROUGHT  
FORWARD

27,338

## CROP EXPENSES

Weed & Pest Control (for Crops & Small Seeds)							
Area	Cover	Chemical	Rate	Tot.Chem.	Cost/L	\$ Tot.Chem.	Appln \$/ha*
49.31	Barley	MCPA	3.11/ha	182L	\$5.05	919	
21.48	Wheat	MCPA	3.11/ha	80L	\$5.05	404	Self
6.87	Lucerne	Atrazine	2.01/ha	14L	\$6.84	96	
1879	Ryegrass	Lindane	1.01/ha	19L	\$13.25	252	Applied
49.31	Barley	Avenge	4.01/ha		\$10.20	2,012	
21.48	Wheat	Bayleton	1.11/ha		\$20.75	445	
1879	Ryegrass	Mataven	6.21/ha		\$9.25	1,043	
						5,180	

\* N.B. Application cost only or Application plus chemical combined.

## Contract Harvesting

Area	Crop	Ha per hr	Hours	Rate/hr	Labour	Total
	Does own harvesting - refer to Freight section for					
	crop haulage					

Contractors Auger hire T augered at \$ /T = -

Contractors Cartage (Pdk to Silo) T carted at \$ /T = -

Windrowing -

## Sacks and Box Hire

Sacks at \$ per sack Boxes at \$ per Box

Total Sacks &amp; Boxes

## Seed Dressing, Certification &amp; Levies

18,790	kg of	Nui	@ \$0.065/kg	6,401
	kg of		@ \$ /kg	
	kg of		@ \$ /kg	
	kg of		@ \$ /kg	
Seed Testing				
Grain & Seed Drying				
Wheat Board Levy				
Other (e.g. inoculation)				

11,581

## DAIRY SHED EXPENSES

Milking machine requisites (rubberware)	
Cleaning materials - chemicals	
- hardware	
Total Expenses per Milking Cow	-

TOTAL  
CARRIED  
FORWARD

38,919

38,919

Farm: 900	Household: 600	1,500
-----------	----------------	-------

Hay baling	2000 bales @ 20¢/bale	Hay	bales @ \$ /bale
Twine			bales @ \$ /bale
Cartage		Grain	T @ /T
Other		Grazing	

400

Type	Quantity	Unit Cost	Total	Type	Quantity	Unit Cost	Total
NH <sub>4</sub> SO <sub>4</sub>	18.3 t	\$253.75	\$4643				
Super	4.2 t	\$136.85	\$ 575				
Sub Total	22.5 t			Sub Total			5,218

5,218

Type	Quantity	From	Km	Rate per tonne	Total
NH <sub>4</sub> SO <sub>4</sub>	18.3 t	Hornby	20	\$10.35	189.40
Super	4.2 t	Hornby	20	\$10.35	44.60
Total	22.5 t				234.00

234.00

[illegible]

5,452

46,271



D.

TOTAL  
BROUGHT  
FORWARD

46,271

## FREIGHT

## Stock Freight

Number	Stock Class	To/From	Km	\$ per hd	Total
775	Wether lambs	To Islington	22	0.46	356
360	Ewe lambs	To Addington	29	0.46	166.60
277	Cull forage ew	To Addington	29	0.57	156
72	R 2 yr steers	To Addington	29	4.00	288
72	R 3 yr steers	To Addington	29	4.20	302.40
					1,269

## Crop and Seed Freight

Produce	To/From	Km	Unit Rate	Total
Wheat 97 t	To Christchurch	32	\$8.79 t	860
Barley 222 t	To Christchurch	32	\$8.79 t	1,952
Barley seed 6.0 t	From Christchurch	32	\$8.79 t	60
Wheat seed 3.0 t	From Christchurch	32	\$8.79 t	30
				2,902

## Other Freight

Wool 43 bales @ \$2.90 per Bale	125
---------------------------------	-----

4,296

## MISCELLANEOUS CONTRACTING

225 Big round bales @ \$6.50 each	
	1,463

## OTHER WORKING EXPENSES

	-

## SEEDS

Type	Variety	Total	Unit Cost	Total Cost
Wheat	Kopara }	2878 kg	\$400 t	1,010
Wheat	Oroua }			
Barley	Mata	5966 kg	\$400 t	2,360
Ryegrass	Nui	711 kg	\$1.40 kg	995
Total				4,365

TOTAL  
CARRIED  
FORWARD

56,395

56,395

NETT VALUES HAVE BEEN USED

Commissions			Stock Yarding fees		
\$	stock sales @	% =		head @ \$	/hd
\$	stock sales @	% =		head @ \$	/hd
\$	Total			Trucking charges	
				head @ \$	/hd
				head @ \$	/hd
\$	produce sales @	% =			
\$	produce sales @	% =			
\$	Total			Wool handling	
				Receive, weigh & catalogue	
				kg @ \$	/kg
Levies				Reclassing & Bining	
Wool Board \$	gross @	%		kg Fleece wool @ \$	/kg
Wool Stab'tion \$	" @	%		kg oddments @ \$	/kg

Shearing:	1520	sheep @ \$ 50	per 100	=	760
	1520	lambs @ \$ 36	per 100	=	550
Crutching	-	sheep @ \$ -	per 100	-	= -
Shed hands		men @ \$	per hour	=	
Full contract				=	
Wool packs	45	packs @ \$ 6	each	=	270
Wool cartage		packs	km @ \$ /km	=	REFER TO FREIGHT
Sundry					

1,580

Irrigation Water Charge:		Stock Water Charge:	
Community Water Charges:	500	Units @ \$	500

[illegible]

\* N.B. Application cost only or Application plus chemical combined.

58,475

F

TOTAL  
BROUGHT  
FORWARD

58,475

REPAIRS AND MAINTENANCE

BUILDINGS		\$	\$	
Employees Cottage	400			
Farm Buildings	200			
				600
OTHER IMPROVEMENTS		\$	\$	
Fences	1200	Water Supply		
		Yards		
Tree and Hedge Trimming				
Drain Cleaning				
Farm Tracks and Roads				1,200
PLANT (non motorised)		\$	\$	
Cultivation	1500	Irrigation		
Harvesting	1000	Hardware	300	
				2,800

VEHICLE RUNNING EXPENSESFUEL

Machine	hrs or km	L/hr or km	Total litres	Fuel Type	Cents/L	Total
Ford 5000	700 hr		@ \$4.50/hr	Diesel	40¢/L	3,360
Fiat 880	550 hr		@ \$6.10/hr	Diesel	40¢	3,600
Massey 35	350 hr		@ \$1.20/hr	Diesel	40¢	500
Int. 321	110 hr		1250 L	Diesel	40¢	500
						7,960

REPAIRS AND MAINTENANCE

Machine	hrs or km	Oil & grease	Filters	Other (Specify)	Total
Fiat 880	2000 hr				1,500
Ford 5000	1100 hr				1,200
Massey 35	9000 hr				300
Int. Header					300
					3,300

REGISTRATION

Tractors	2	Trucks	-	Other	Motorbike	100
----------	---	--------	---	-------	-----------	-----

CAR EXPENSES (km/yr = 4,000 )

Fuel	600	R & M	300	Registration	60	960
------	-----	-------	-----	--------------	----	-----

TOTAL  
CARRIED  
FORWARD

75,395

G.

TOTAL  
BROUGHT  
FORWARD

75,395

ADMINISTRATION

PROFESSIONAL FEES		\$	\$	
Accountancy		950	Farm Advisory	200
Legal		-	Secretarial	-
				1,150

TELEPHONE AND MAIL		\$	\$	
Telephone Rental		134	Stamps	
Telephone Tolls		400	Other Charges	
				534

OTHER EXPENSES		\$	\$	
Subscriptions		25	Stationery & Office	120
Travelling			Other	
				145

STANDING CHARGES

INSURANCE				
Buildings \$ @		400	Public Liab. \$ @	
Mot. Plant \$ @		200	Wool \$ @	
Plant \$ @			Crop \$ @	200
Acc. Compensation			Hay	
				800

INTEREST				
Type of Debt	Creditor	Amt Outstanding	Int. Rate	Ann. Interest
Mortgages	Family	153,000	-	
	Solicitor	55,000	14%	13,578
	Rural Bank	31,660		3,996
Loans				
Term Loan	Bank	1,667		443
Hire Purchase				
Bank				
Stock Firm				
Sundry				
				18,017

RATES		\$	\$	
County Council		2896	Catchment Board	23
Pest Dest. Board		56	Special Rates	
				2,975

RENT				
Area	Property	Lessor	Term	Rental
64 ha	-	- Trust		
				6,355

TOTAL FARM CASH EXPENDITURE

105,371

BUDGETED TAXATION PROFILE FOR YEAR ENDING 30/6/82

<u>DEDUCTIONS</u>		<u>ADDITIONS</u>	
FARM OPERATING CASH DEFICIT (XP3)	<u>-</u>	FARM OPERATING CASH SURPLUS (XP 3)	<u>36,048</u>
DECREASE IN STOCK AT STANDARD VALUE		INCREASE IN STOCK AT STANDARD VALUE	
Sheep	<u>NIL</u>	Sheep	<u>NIL</u>
Cattle	<u>NIL</u>	Cattle	<u>NIL</u>
Other	<u>NIL</u>	Other	<u>NIL</u>
	<u>-</u>		<u>-</u>
DECREASE IN PRODUCE ON HAND	<u>-</u>	INCREASE IN PRODUCE ON HAND	<u>3,769</u>
DEFERRED INCOME FROM THIS YEAR		DEFERRED INCOME FROM PREVIOUS YEARS	
- Income Equalisation Deposits	<u>          </u>	- Income Equalisation Withdrawals	<u>          </u>
	<u>          </u>	- Wool Stabilisation Withdrawals	<u>          </u>
	<u>NIL</u>		<u>NIL</u>
DEPRECIATION	<u>5,564</u>	DEPRECIATION RECOVERED	<u>NIL</u>
LOSSES ON SALES OF DEPRECIATED ITEMS	<u>-</u>	NON DEDUCTIBLE EXPENSES	
INVESTMENT ALLOWANCE	<u>-</u>	House Repairs ( $\frac{3}{4}$ )	<u>          </u>
DEVELOPMENT CLAIMED	<u>621</u>	Car Expenses ( $\frac{1}{2}\%$ )	<u>480</u>
		Car Depreciation ( $\frac{1}{2}\%$ )	<u>55</u>
		House Insurance ( $\frac{3}{4}$ )	<u>300</u>
		House Electricity ( $\frac{3}{4}$ )	<u>400</u>
			<u>1,235</u>
		Produce Used	<u>150</u>
SUB TOTAL	<u>6,185</u>	SUB TOTAL	<u>41,202</u>
TAXABLE FARM INCOME	<u>          </u>	TAXABLE FARM LOSS	<u>          </u>
TOTAL	<u>\$35,017</u>	TOTAL	<u>          </u>

TAXABLE FARM INCOME

35,017

ADD NET OFF FARM ASSESSABLE INCOME

ASSESSABLE INCOME

35,017

LESS SPECIAL EXEMPTION  
SUPERANNUATION

LIFE INSURANCE 270

TAXABLE INCOME

34,747

TAX THEREON

15,750

LESS REBATES

156 spouse

TAX DUE

15,594

(1)

LESS P.A.Y.E. NIL

PROVISIONAL PAID 5,750

TERMINAL TAX ~~12,000~~

9,819

(2)

NEXT YEARS BUDGETED TAX PAYMENTS

PROVISIONAL (1) 6,000

TERMINAL (2) 6,000

TOTAL

12,000

TO BE PAID

7/9/82

$\frac{1}{3}$  PROVISIONAL

4,000

7/3/83

$\frac{2}{3}$  PROVISIONAL

8,000

TERMINAL

TAXATION WORK SHEETS

SHEEP STANDARD VALUE ADJUSTMENT

OPENING STOCK 1/7/81				CLOSING STOCK 30/6/82			
NO.	CLASS	STANDARD VALUE	TOTAL VALUE	NO.	CLASS	STANDARD VALUE	TOTAL VALUE
TOTAL				TOTAL			
INCREASE IN STANDARD VALUE			NIL	DECREASE IN STANDARD VALUE			NIL

CATTLE STANDARD VALUE ADJUSTMENT

OPENING STOCK 1/7/81				CLOSING STOCK 30/6/82			
NO.	CLASS	STANDARD VALUE	TOTAL VALUE	NO.	CLASS	STANDARD VALUE	TOTAL VALUE
TOTAL				TOTAL			
INCREASE IN STANDARD VALUE			NIL	DECREASE IN STANDARD VALUE			NIL

CROP ADJUSTMENT

OPENING PRODUCE 1/7/81				CLOSING PRODUCE 30/6/82			
TONNES	PRODUCE	UNIT PRICE	TOTAL VALUE	TONNES	PRODUCE	UNIT PRICE	TOTAL VALUE
2.5	White clover	\$2.80	7,000	9.79	Nuit Rye	\$1.10	10,769
TOTAL			7,000	TOTAL			10,769
INCREASE IN PRODUCE			3,769	DECREASE IN PRODUCE			

DEVELOPMENT ADJUSTMENT

DEVELOPMENT	DEVELOPMENT
B/F EX ACCOUNTS	AMOUNT CLAIMED 621
CURRENT YEAR 621	AMOUNT CARRIED FWD -
	FOR FUTURE YEARS
TOTAL CLAIMABLE 621	621

B.

DEPRECIATION SCHEDULE

ITEM	BOOK VALUE AT START OF YEAR \$	PURCHASES	SALES	LOSS OR PROFIT ON SALE	FIRST YEAR DEPRECIATION		ORDINARY DEPRECIATION		BOOK VALUE END OF YEAR \$	INVESTMENT ALLOWANCE	
					RATE	AMOUNT	RATE	AMOUNT		RATE	AMOUNT
Car	548	-	-	-	-	-	DV 20%	109	441	-	-
Bedford Truck	1,276	-	-	-	-	-	DV 20%	225	1,021	-	-
Tractor - Fiat	10,899	-	-	-	-	-	DV 20%	2,180	8,719	-	-
Tractor - Ford	2,267	-	-	-	-	-	DV 20%	454	1,813	-	-
Tractor - Massey	1,856	-	-	-	-	-	DV 20%	371	1,485	-	-
Motorbike	230	-	-	-	-	-	DV 20%	46	184	-	-
Internat. Header	3,530	-	-	-	-	-	DV 20%	706	2,824	-	-
Baler	1,833	-	-	-	-	-	DV 20%	367	1,466	-	-
Plant & Machinery (non-motorised)	5,054	-	-	-	-	-	DV 20%	505	4,549	-	-
Buildings	22,849	-	-	-	-	-	CP2.5%	571	22,278	-	-
TOTAL	50,342	Nil	Nil	Nil	-	Nil	-	5,564	44,780	-	-



# **LINCOLN COLLEGE FARM ADVISORY SERVICE** **ESTIMATES FOR THE YEAR ENDING 30 June 1982**

SHEEP	1/7/81	30/6/82
Breeding Ewes	1170	1170
Ewe Hoggets	350	350
Wether Hoggets		
Wethers	50	50
Rams		

Opening Balance	\$ 6,321	Name:
Less O/S Income	\$ —	
Surplus/Deficit	\$ 12,315	Address:
Closing Balance	\$ 18,636	Code:

CATTLE	1/7/81	30/6/82
Breeding Cows		
Rising 2 yr. Heifers		
Rising 1 yr. Heifers		
Steers	72	72
Bulls		

Lambing % (S. to S.) ...100... %  
 Calving % (S. to S.) ...N/A... %  
 Deaths: Cattle ..... %  
               Sheep .....2... %

Officer .....  
 Date Compiled .....10 November 1981  
 Wool Weights: Ewes ..... Kgs.  
                  Hoggets .....4.0... Kgs.  
                  Lambs ..... Kgs.

Wool (Net) .....2.80... Cents/Kg.  
 Total Wool .....6250... Kg.  
 Lambs (Sale) .....\$20.13.../Head  
 Ewes (Sale) .....\$13.../Head

Wheat .....80... acres   75 Bus. A/c.  
 Barley .....120... acres   90 Bus. A/c.  
               acres   Bus. A/c.  
 Lime ..... tons   T/D .....22... tons

CODE NUMBER	INCOME	TOTAL	PREV. SEASON	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE
	Hoggets	1150	-										1150		
1000	Ewes - C.F.A.	3601	-					3601							
1001	Lambs - Wethers	14739	-					4000	4520	2009	2000	2210			
	- Ewes	7200	-							7200					
1300	Cattle	20160	-	20160											
1900	Wool	17584	-				17584								
2202	Wheat	13915	-								6305	6305	6305		
2203	Barley	41070	-								21035	15035	5000		
	Nui Ryegrass	9900	-											9900	
	White Clover	7000	-					7000							
	TOTAL INCOME	\$ 141319	-	20160	-	-	17584	14601	4520	9209	29340	23550	12455	9900	-



#### 5.4.2 Dairy

The following is a dairy farm budget for the 1981/82 season. The per cow milkfat production is the average production from cows in Canterbury as printed in the 56th Farm Production Report, New Zealand Dairy Board.

The income is shown to include two milkfat payments. The advance being the payment of milkfat produced in the 1981-82 financial year and the deferred payment being the income received in the 1981-82 financial year for milkfat produced in the 1980-81 financial year.

The farm working expenses are shown as dollars per kilogram of milkfat produced.

This example is for a factory supply dairy farm supplying whole milk.

##### Farm Details

Farm Size - 90 ha irrigated. (Either spray or border dyke irrigation.)

##### Stock Wintered:

160 cows mixed age.  
36 in-calf heifers  
42 rising yearlings

##### Production

180 cows @ 158/cow = 28,440 kg. 316 kg/ha.

##### Income

28,200* kg at advance payment of 225c/kg	\$63,450
28,200 kg at deferred payment of 54c/kg	\$15,228
Cull cows - 20 @ \$280 each	\$ 5,600
Bobby calves - 120 @ \$14 each	\$ 1,680
Total Income	\$85,958

\* 240 kg used for calf milk.

## Expenditure

	\$/kg Milkfat	
Wages	0.20	5,688
Animal Health	0.12	3,413
Breeding	0.07	1,991
Herd Testing	0.04	1,138
Shed expenses	0.06	1,706
Electricity (not including irrigation)	0.11	3,128
Feed - 3,000 bales made		
110 round bales straw purchased	0.15	4,266
Calf meals		
Fertiliser - 250 kg DAP/ha on 85 ha		
125 kg sulphate of		
Ammonia/ha	0.38	10,807
Freight	0.04	1,138
Repairs and Maintenance - including land and buildings, weed and pest and pasture renovation	0.12	3,413
Vehicle Running	0.29	8,248
Administration and Standing Charges - including Border dyke irrigation water	0.09	2,560
TOTAL	1.67	\$47,496
		=====

## Farm Surplus

Income	\$85,958
Expenditure	\$47,496
Surplus	<u>\$38,462</u>
Farm Surplus per cow	\$214
Farm Surplus per kg Milkfat	\$1.35
Farm Surplus per Hectare	\$427

NB

If the budget is calculated ignoring the variation in payment due to the two financial years within the one budget the following details apply.

28,200 kg @ 3.00/kg income	\$84,500
Plus stock sales	7,280
TOTAL	<u>\$91,880</u>

In this case the farm surplus is:

Income	\$91,880
Expenditure	\$47,496

Farm Surplus	<u>\$44,384</u>
--------------	-----------------

Farm Surplus per cow	\$247
----------------------	-------

Farm Surplus per kg Milkfat	\$1.56
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Farm Surplus per Hectare	\$493
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## SECTION 6

### TAXATION FOR PRIMARY PRODUCERS

1982

M.B. CLARK, M.Com., A.C.A.  
SENIOR LECTURER IN AGRICULTURAL ACCOUNTING  
LINCOLN COLLEGE



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## 6. INCOME TAXATION

### 6.1 INTRODUCTION

The law relating to income tax in New Zealand is detailed in the Income Tax Act 1976, as amended by subsequent taxation legislation and budgets. It must be appreciated that for reasons of brevity, only selected aspects of the taxation law have been included in this section, and that caution must be exercised when applying those guidelines to a particular circumstance. If in doubt, the Inland Revenue Department, your accountant, or financial adviser should be consulted.

### 6.2 TAXATION IN NEW ZEALAND

#### 6.2.1 Overview

Income tax is collected throughout the income year by either the P.A.Y.E. or Provisional tax systems. These monies are regarded as advance payments of tax for that year. After the income year has finished the taxpayer completes his Income Tax Return and files it with the Inland Revenue Department. The return is checked and the results notified to the taxpayer - for example, a refund of tax overpaid or an assessment notice requiring more tax to be paid by a specified date. A penalty of 10% is charged if this tax is not paid within one month of the specified due date.

Any taxpayer can object to his income tax assessment where the substance or accuracy is disputed. The requirement for objections are stipulated in the Income Tax Act and any person contemplating such action would be well advised to seek professional advice. It should be noted, however, that the lodgement of an objection does not suspend the taxpayer's obligation to pay the tax assessed, or the right of the Commissioner to collect the tax.

#### 6.2.2 P.A.Y.E. (Pay As You Earn) Tax System

The P.A.Y.E. system is where source deductions of tax are made by the employer. The P.A.Y.E. system applies to three types of payment:

- (a) Salary and wages - where the amount of tax depends on the tax code on the employee's IR 12 (Tax Code Declaration). The rate of deduction for secondary employment is a flat rate of 35%.

(b) Extra emoluments, such as back pay or bonuses, where tax is deducted at a flat rate of 35%.

(c) Withholding payments, which basically refer to casual payments where there is not a strict employer-employee relationship. Common types of payment and the appropriate tax rates are specified on the back on the "employees" IR 13 (Withholding Payments Deduction Certificate) and include:

Company directors' fees	35%
Shearing work	15
Droving work	15
Farm work	15
Casual agricultural employees	15
Payments to suppliers of wild deer, pigs, goats (whole carcass or animal parts)	25
Honoraria	35

The employer must pay the total tax deductions for a month to the Inland Revenue Department by the 20th of the following month. Each year he is required to

- (a) complete the pay details on the IR 12s and/or IR 13s, and give the yellow (bottom) copy to the employee: and
- (b) provide the Inland Revenue Department with an annual reconciliation of all P.A.Y.E. and Withholding Payments and tax deductions including the top copies of the IR 12s and IR 13s.

Relevant records, in English, must be kept for at least 7 years.

### 6.2.3 Provisional Tax System

Provisional tax is paid by all taxpayers who receive income which is not taxed at source as P.A.Y.E. income. Therefore the following would be regarded as provisional taxpayers:

- (a) Individuals who derive business or professional income, e.g. farmers.
- (b) Individuals where assessable income derived from rents, interest and/or dividends is in excess of \$500. (Otherwise regarded as a P.A.Y.E. taxpayer.)

(c) Companies.

(d) Trusts.

The provisional tax system works on the basis of advance payments of tax made by the taxpayer himself to the Inland Revenue Department. The amount of the provisional tax is either:

(a) the same as last year's tax: or

(b) based on estimated income for the current year.

Provisional tax may be re-estimated up to the due date for payment of the last instalment. However, a penalty may be payable if there is gross underestimation.

Provisional tax is generally payable in two instalments, the first being one third of the current year's provisional tax and the second being the balance of tax due. Dates for payment are detailed in Appendix I at the end of this section.

The situation may arise when the first instalment of provisional tax is payable before last year's return has been completed, and therefore last year's tax is not known. This is likely to occur when the balance date is between 7 June and 1 October. If the taxpayer has not estimated his provisional tax, the first instalment of tax is based on the last completed tax return (i.e. 2 years ago). The difference between last year's tax and the provisional tax already paid is the amount due as the remaining instalment.

#### 6.2.4 Returns of Income

In general, every taxpayer must furnish a return of income each year setting out details of the assessable income derived by him during the preceding year, plus such supporting information, accounts etc. as may be required. Annual returns relate to an income year ending 31 March unless an alternative balance date has been approved.

All companies, partnerships, trusts, and persons who are in business for any part of the income year must furnish returns of all their income, irrespective of whether a profit or a loss is made.

A return of income is not required from any taxpayer whose only income for that year is from:

- (a) salary or wages not exceeding \$11500; or
- (b) withholding payments not exceeding \$4900; or
- (c) national superannuation.

These taxpayers, known as pay-period taxpayers, may elect to furnish a return in order to get the benefit of any rebate, special exemption or deduction not taken into account in their tax code. Where a return is not furnished the tax already deducted under the P.A.Y.E. system is not adjusted; where a return is furnished, the amount of tax payable is the true liability of the taxpayer.

It should be noted that shearers are excluded from treatment as pay-period taxpayers.

Return forms are provided by the Inland Revenue Department as follows:

- IR 3 - Individual return for self-employed and others who pay provisional tax.
- IR 3B - Supplementary return of business income.
- IR 3F - Supplementary return of farming income.
- IR 4 - Companies and clubs.
- IR 5 - Individual return for persons who receive income from salary, wages or superannuation, with or without net investment income (i.e. interest and dividends after exemptions, and net rents if not more than \$500).
- IR 5A - Estate or Trust return.
- IR 7 - Partnership return.

#### 6.2.4 (i) Due Dates for Annual Returns

Annual returns for IR 5 taxpayers are due 7 June each year. Annual returns for all other taxpayers are due as follows:

- (a) Balance dates between 1 October and the following 7 June (inclusive) - return is due 7 August.
- (b) Balance dates between 8 June and the following 30 September (inclusive) - return is due two months after balance date.

### 6.2.5 Assessment

The return of income requires the taxpayer to calculate his actual tax liability and compare this with the tax already paid during the income year. These details are checked by the Inland Revenue Department when the return is furnished, and the result of their assessment is notified to the taxpayer. Even if the result is a loss, the amount is still confirmed by the Department.

In general, the assessment usually results in:

1. A refund of tax (tax paid exceeds the actual liability): or
2. More tax to pay (tax paid is insufficient to meet the actual liability). The assessment notice usually stipulates the due date for payment. Provisional taxpayers, however, pay this "terminal tax" by 7 March in the following year, excepting companies whose due date depends upon their balance date. (Refer to Appendix I.)

### 6.3 CALCULATING TAXABLE INCOME

Taxable income is calculated in the following way:

	Income
less	Exempt Income
	<hr/>
=	Assessable Income
less	Special Exemptions
	<hr/>
=	TAXABLE INCOME
	=====

- (a) Income is generally accepted to mean a gain in money or money's worth derived by a person as a reward for services rendered, the profits of a business or a profit-making enterprise, or from property.
- (b) Exempt Income is income specified by the Income Tax Act to be wholly exempt from tax.
- (c) Assessable Income is therefore income of any kind which is not exempted from income tax.
- (d) Special Exemptions are specified types of expenditure which may be deducted from the assessable income of individuals. (See also the taxation of "Other" Trusts in section 6.7.)

- (e) Taxable Income is therefore the residue of assessable income after deducting the taxpayer's special exemptions.

## 6.4 TAXATION OF INDIVIDUALS

### 6.4.1 Overview

Individuals are required to file IR 5 or IR 3 returns depending on their sources of income (see section 6.2.4 - Returns of Income), and to pay tax at the rates specified by the Income Tax Act. These rates vary according to the level of income on the basis that the higher the income, the higher the marginal rate of tax. The rates of tax are detailed in Appendix II.

Tax is calculated according to the following relationship:

Income	
less Deductions	
<hr/>	
= Assessable Income	
less Special Exemptions	
<hr/>	
= TAXABLE INCOME - calculate -	Tax
=====	less Rebates
	Tax Liability
	less Tax paid
	during year
	<u>(e.g. PAYE)</u>
	TERMINAL TAX
	<u>or REFUND</u>

Income, excluding exempt income, can be reduced by the deductions allowed to salary and wage earners and/or by appropriate special exemptions in order to obtain the taxable income. Tax is assessed using the appropriate rates and the allowable tax rebates deducted to obtain the actual tax liability. Tax paid during the income year is then credited to ascertain whether more tax is payable (i.e. terminal tax), a refund is due for tax overpaid, or the assessment is correct.

### 6.4.2 Exempt Income

The following items, amongst others, may be applicable to individuals and regarded as exempt income:

1. 50% of interest from Farm Vendor Finance Bonds or from money left in approved farms as Farm Vendor Mortgages. Such interest does not qualify for the general interest exemption or the rebate allowable for interest on home (farm) vendor mortgages.
2. Premiums on redemption of Inflation Adjusted Savings Bonds.
3. Up to \$500 accumulated interest from Post Office National Development Bonds and/or New Zealand Savings Certificates. This interest again does not qualify for the general interest exemption.
4. Up to \$200 interest and dividends from all sources.
5. Any educational scholarship or bursary.
6. Prize money from horse or dog racing, or trotting.
7. Prizes from Post Office Bonus Bonds.

It should be noted that gifts, legacies, capital gains and monies derived by chance, i.e. gambling, are not regarded as income unless it can be fairly said to be the taxpayer's business.

#### 6.4.3 Assessable Income

Includes, amongst others:

1. Profits or gains derived from any business.
2. Employment income, such as salary and wages, including allowances which benefit the individual e.g. food, board or lodgings supplied to employee. Allowances which reimburse the employee for work related expenditure are not assessable.
3. Earnings related Accident Compensation receipts.
4. National Superannuation receipts.
5. Profits or gains derived from the sale or disposition of property if it is the business of the taxpayer to deal in such property, or if the property was acquired for the purpose or intention of selling or otherwise disposing of it. Property refers to all personal property as well as land.



6. Revenues from land e.g. net rents received; profits from extraction, removal or sale of minerals, timber etc.
7. Royalties and know how payments.
8. Interests, dividends, annuities and pensions.  
(See also Exempt Income.)
9. Unemployment benefits received by persons without dependent children.
10. As from 1 October 1980 travelling allowances received by an employee will be taxable except those amounts which represent a reimbursement of:
  - (i) expenditure incurred by the employee in gaining or producing his assessable income: and/or
  - (ii) additional transport costs incurred by the employee in travelling between home and his place of work. "Additional transport costs" are defined to mean:-
    - (a) The excess above normal travel costs where these have been incurred because of:
      - the time of day or day of the week the employee works;
      - the necessity to carry any work related equipment;
      - the fulfilling of any statutory obligation;
      - a temporary change in the place of work;
      - any other condition of work applying to that employee; or
    - (b) the excess costs above \$1 per day incurred because of the absence of public transport serving the place of work. Except in special circumstances, the costs incurred in travelling more than 70 km per day must be excluded from this calculation.

#### 6.4.4 Deduction for Employment Related Expenses

Recipients of salary, wages and/or national superannuation, and casual agricultural employees, are permitted to deduct employment related expenses from this income. The allowable deduction is the greater of:

- (a) \$52 or 2% of employment income, whichever is the smaller; or
- (b) The actual amount of employment related expenditure or loss incurred in gaining assessable income. Details of the claim together with supporting evidence for payments in excess of \$20 should be included in the taxpayer's return of income. Allowable expenditures include:
  - (i) Union fees and subscriptions.
  - (ii) Reference books, journals and periodicals.  
(Maximum of \$20 for any one volume or issue.)
  - (iii) Special or protective clothing.
  - (iv) Tools of trade and equipment.  
(Maximum of \$100 for any one item.)
  - (v) Self-education expenses where they relate to promotion, or for refresher courses, conferences, etc. (Maximum of \$400.)
  - (vi) Travelling expenses incurred in the course of employment, but not between home and work.
  - (vii) Home office expenses, where a room is set aside wholly or principally for use in employment.  
(Maximum of 15% of total outgoings on the property.)
  - (viii) Other expenditure incurred for purposes of, and as a condition of employment.

These expenses should be reduced by the amount of reimbursement received from the employer, if any, before any of the limits are applied.

#### 6.4.5 Special Exemptions

Only one special exemption is currently available, for

- (a) Life, personal accident, or sickness insurance premiums on policies which cover the taxpayer, spouse, or children; and
- (b) Contributions to specified funds, most commonly for superannuation.

The special exemption allowable is the lesser of the amount paid or \$1,000 (\$800 if a member of a subsidised superannuation scheme).

#### 6.4.6 Tax Rebates

Rebates are deducted from the actual tax assessed, and give equal benefit to all taxpayers irrespective of their level of income. The total rebates claimed cannot exceed the assessed amount of tax payable. Rebates available to individuals include:

##### 1. DEPENDENT SPOUSE

\$156, reduced by 20 cents for each complete dollar by which the spouse's personal income exceeds \$520.

This rebate, which applies equally to a husband or a wife, is therefore extinguished when the spouse's income reaches \$1,300.

##### 2. YOUNG FAMILY

\$468 reduced by 12 cents for each dollar that the taxpayer's income exceeds \$13,700.

This rebate is therefore extinguished when assessable income reaches \$17,600.

At least one child must be aged under 5 years at any time during the year, and be eligible for Family Benefit. Only one rebate per family can be claimed in a year and should be claimed by the principal earner, or the recipient of the Family Benefit if two people earn equal income.

##### 3. LOW INCOME FAMILY

\$468 reduced by 12 cents for each dollar that the combined income of the family (i.e. the 2 persons who look after the child) exceeds \$9,800.

This rebate is therefore extinguished when the income of the family reaches \$13,700.

The rebate only applies to families who have a child or children eligible for the Family Benefit. Only one rebate per family can be claimed in any one year irrespective of the size of the family, and should be claimed by the principal earner, or the recipient of the Family Benefit if two people earn equal income.

4. HOUSEKEEPER/CHILD CARE

The lesser of \$156 or 40% of payments made.

This rebate is allowable for the care of a dependent child (at or away from home) provided the services are deemed necessary or a housekeeper is required because of the taxpayer's disability.

5. DEPENDENT RELATIVE

The lesser of \$60 or 40% of contributions made.

A rebate is allowed for each relative supported, but excluding any child for whom Family Benefit is payable.

Where a taxpayer supports a separated spouse, the larger of the dependent spouse or dependent relative rebates may be claimed.

6. DONATIONS AND SCHOOL FEES

The lesser of \$175 or 50% of payments made.

Donations must be for a minimum of \$2 (\$5 from 1 April 1982) and made to approved charities within New Zealand. School fees apply to fees paid for children under 18 years of age at the start of the income year and cover fees for private schools, activity fees paid to State Schools, fees paid to schools for the handicapped or disabled, or fees paid to registered Pre-School organisations.

Receipts must be furnished in support of the rebate claimed.

7. BACK PAY

Six cents for every dollar of back pay received which relates to previous income years.

8. OVERTIME

Ten cents per hour of paid overtime.

## 9. SHIFT WORK

Forty cents for each qualifying shift worked.

## 10. RATES ON HOME

The lesser of \$25 or the amount of rates paid.

This rebate is available to individuals for rates paid on an owner-occupied home which is the principal residence of the taxpayer.

## 11. FIRST HOME MORTGAGE INTEREST

The lesser of \$1,000 or 50% of mortgage interest paid.

The rebate will be allowable for the first five years of ownership by owner-occupiers who have purchased their first home. The rebate will apply in relation to the mortgage interest paid on or after 1 April 1981, and special provisions are made for first homes purchased between 1 April 1976 and 1 April 1981.

## 12. INTEREST ON HOME VENDOR MORTGAGE

The lesser of \$500 or 20% of such interest received.

This rebate applies to individuals who receive interest on a mortgage in respect of money left in on the sale of a home. The mortgage must be guaranteed by the Housing Corporation, and approved by them for this rebate.

### 13. HOME, FARM AND FISHING VESSEL OWNERSHIP SAVINGS

Forty-five cents for every dollar saved during the year.

These special accounts are run by the Savings Banks. Maximum rebates per year are:

- (a) Home Account - \$ 900  
(\$2,000 savings)  
(N.B. As from 1 January 1982, the maximum  
rebate has been increased to \$1,350  
for savings of \$3,000.)
- (b) Farm Account - \$2,250  
(\$5,000 savings)
- (c) Fishing Vessel Account - \$2,250  
(\$5,000 savings)

Maximum savings in any one account are:

- (a) Home Account - \$10,250
- (b) Farm Account - \$60,000
- (c) Fishing Vessel Account - \$60,000

If savings are withdrawn and used for purposes other than that specified, the tax rebate must be repaid, i.e. withdrawal tax of 45%.

- 14. Other rebates are available for more than the standard number of pay periods in one year, visiting experts, war pensioners, and for hardship.
- 15. REBATE FOR CHILD TAXPAYERS  
\$78 per year.

To qualify for this rebate the child taxpayer must be aged under 15 or attended a school at any time during the income year, and the family benefit must have been payable in respect of that child taxpayer.

This rebate allows the child to effectively earn \$538 before becoming liable to income tax.

- 16. Visitors from overseas who work in New Zealand are allowed a proportion (based on time worked here) of the following rebates:

Dependent Spouse  
Dependent Relative  
Young Family  
Low Income Family  
Housekeeper  
Child Taxpayers

#### 6.4.7 Example

A married man with 2 children aged 4 and 6 derived the following income during the year ended 31 March 1982.

Salary	\$13,600
Mortgage interest	260
Savings Bank interest	220
Dividends received	300

His wife earned \$600 in the same year.

Throughout the year he paid the following amounts:

Life assurance premiums	\$	480
Superannuation (subsidised scheme)		350
Donations to Red Cross		30
Activity fees to school		70
Rates on own home		152
Interest on mortgage over (first) home		2,800

Tax deductions from his salary as per his IR 12 were \$2,512 and provisional tax paid on other income was \$40.

His income tax assessment would be as follows:

Salary	\$13,600	
less Standard Deduction	<u>52</u>	\$13,548
Mortgage interest	260	
Savings Bank Interest	220	
Dividends	<u>300</u>	
	780	
less exemption	<u>200</u>	
		580
TOTAL ASSESSABLE INCOME		14,128
less Special Exemptions:		
Life assurance premiums	480	
Superannuation contributions	<u>350</u>	
	\$ <u>830</u>	
Special exemption allowable		<u>800</u>
TAXABLE INCOME		<u>\$13,328</u>
INCOME TAX on \$13,328		\$ 3,631.94
less REBATES and ADJUSTMENTS:		
(a) Wife rebate		
(1,300-600)x\$0.20	140.00	
(b) Young family rebate		
(17,600-14,128)x\$0.12	416.64	
(c) Donations and school fees		
Lesser of:		
(i) \$175, or		
(ii) 50% of (\$30+70)	50.00	

(d) Rates	
Lesser of:	
(i) \$25, or	
(ii) \$152 paid	25.00
(c) Mortgage interest on first home.	
Lesser of:	
(i) \$1,000, or	
(ii) 50% of \$2,800	<u>1,000.00</u>
Total Rebates	\$ <u>1,631.64</u>
INCOME TAX PAYABLE	\$ 2,000.30
less tax already paid:	
PAYE tax deductions	2,512.00
Provisional tax paid	<u>40.00</u>
	<u>2,552.00</u>
REFUND DUE	\$ <u>551.70</u>

## 6.5 TAXATION OF COMPANIES

A limited liability company pays tax in its own right (i.e. it is separate and distinct from its shareholders), and the basic rate of tax on income derived by New Zealand resident companies is 45 cents for every dollar. The basic rate for non-resident companies is 50 cents for every dollar of income. Taxable income generally means business profits (in the normal accounting sense), less any taxation incentives applicable to that company. Dividends received by a company are generally regarded as exempt income, and companies are not entitled to tax rebates or special exemptions.

Companies are provisional taxpayers; they generally pay provisional tax in two instalments, and may be required to pay terminal tax. (For further details refer to section 6.2.3 - The Provisional Tax System, and Appendix I - Dates for payment of provisional and terminal tax.)

The IR 4 Company Return of Income is usually due by 7 September following the company balance date, although if the company balances between 8 June and the following 30 September (inclusive), the return is due two months after balance date. Returns must be filed, including accounts, irrespective of whether a profit or loss is disclosed for the year.



Losses can be carried forward and deducted from the first available assessable incomes until extinguished provided 40% of the shareholding is held by or on behalf of the same persons at the beginning and end of each year. This requirement is relaxed in the case of public companies listed on the Stock Exchange but not where one person or group of "associated" persons acquires more than 10% of the shareholding.

Special considerations apply where relatives (i.e. associated persons) of the shareholders or directors receive remuneration from the company. These may affect arrangements to split income between family members, and it would be advisable to seek professional advice under these circumstances.

## 6.6 TAXATION OF PARTNERSHIPS

### 6.6.1 Overview

A partnership is not a taxpaying entity and is not itself liable to pay tax. However, the partners must file a separate "partnership" return of income (IR 7) covering their joint income (irrespective of profit or loss) and detailing the distribution amongst the various partners. The partnership accounts or the supplementary return forms IR 3B or IR 3F should also be furnished.

Each partner is liable for tax as an individual and must add their share of the net partnership income to their income from other sources. Income from a partnership does preserve its identity in the hands of the recipient partners as interest and dividends (up to \$200 exempt), and ordinary assessable income. (Refer to section 6.4 Taxation of Individuals). Partnership losses should always be allocated to the constituent partners and cannot be carried forward by the partnership itself.

### 6.6.2 Family Partnerships

The use of family partnerships, often including trusts for infants, has long been a common device for splitting income among family members, thereby avoiding the high tax brackets. To counteract loss of revenue through this type of income splitting, the Income Tax Act lays down five requirements before a family partnership is deemed to be acceptable for taxation purposes.

- (a) There must be a contract of partnership in writing or by deed signed by all parties;
- (b) No partner can be under 20 years of age;
- (c) The agreement must bind the partners for at least three years;
- (d) Each partner must have real and effective control of their remuneration; and
- (e) No part of the remuneration or share of profits would be regarded as a gift and thereby subject to Gift Duty.

In determining whether a gift exists, consideration would be given to the following factors, amongst others:

- (i) The nature and amount of the capital contributions or the value of the services performed.
- (ii) The proportions of such contributions to the remuneration or share of profit between partners.
- (iii) Whether the arrangement would be acceptable under normal commercial standards; etc.

Where the above five requirements are not satisfied and the Commissioner of Inland Revenue believes that the remuneration or share of profits paid to the relative is excessive, he has the power to reallocate the partnership income for taxation purposes between the partners in such shares as he considers reasonable, having regard to the capital and services contributed by the partners and other relevant matters.

## 6.7 TAXATION OF TRUSTS

A trust is an equitable obligation binding on a person (who is called a trustee) to deal with property over which he has control (which is called the trust property), for the benefit of persons (who are called the beneficiaries) of whom he may himself be one, and any one of whom may enforce the obligation.

It is not necessary that a trust be in writing, as a valid trust can be created by an oral agreement or by the conduct

of the parties concerned. It must be emphasised, however, that it is desirable to evidence a trust in writing by a Deed of Trust, or inclusion in a will, or by some other trust instrument.

#### 6.7.1 Classification of Trusts

The Income Tax Act distinguishes between two types of trust:

(a) Specified Trusts

Generally speaking, these are trusts created during the lifetime of the settlor (i.e. an inter vivos trust) on or after 19 July 1968; and

(b) Other Trusts.

#### 6.7.2 Liability for Income Tax

A trust is a separate legal entity, and as such all the income of a trust is liable for income tax in the hands of the trustee, either as "Trustees' Income" or as "Beneficiaries' Income" where the trustee acts as the agent of the beneficiary although the primary liability remains with the beneficiary.

In the case of "Beneficiaries' Income" (see section 6.7.3 below), the taxation liability is determined by providing for the special exemptions and rebates which the beneficiary himself is eligible for. Obviously, if the beneficiary derives additional income a personal return of income should be filed incorporating his trust income and the tax already paid by the trustee on his behalf.

"Trustees' Income" is any income other than Beneficiaries' Income and the trustee is assessed for tax on the income in one sum as follows:

(i) Specified Trusts:

Taxed at 35 cents per dollar of taxable income or at the basic rates applicable to individuals, whichever is the greater. No special exemptions are granted.

(ii) Other Trusts:

Taxed at the basic rates applicable to individuals after deducting a special exemption of \$100.

Tax on the income of a trust will normally be paid on a provisional basis, the return of income for the trust (IR

5A) being filed by the trustee(s). Trust income is taxed once only so that a distribution to a beneficiary is not taxed if the trustee has paid tax on the income previously.

### 6.7.3 Classification of Income

Income derived by a trustee during an income year is classified as Beneficiaries Income for the same year under any of the following conditions:

- (a) Where an adult beneficiary of any trust is entitled to income under a specific provision of the trust deed or by the discretionary act of the trustee; or
- (b) Where an under-age beneficiary of an 'other' trust is entitled to income under a specific provision of the trust: or
- (c) Where the trustee pays or applies income to or on behalf of the beneficiary of a trust during or within six months after the income year by a genuine transaction which places the income beyond the possession and control of the trustee in his capacity as trustee of that trust, provided that if the beneficiary of a specified trust is under-age, the income must remain out of the trust or any business in which the trust is interested whilst the beneficiary is under-age.

Any other income not coming within the above is then Trustees' Income.

It should be noted that the test for Beneficiaries' Income stresses the physical parting of possession and/or control over the funds.

## 6.8 TAXATION OF FARMERS

### 6.8.1 Liability for Income Tax

All farmers are liable for income tax as provisional taxpayers. The appropriate return form depends on the entity involved:

- |            |   |
|------------|---|
| Individual | - IR 3 plus either completed accounts or the supplementary return from IR 3F. |
| Companies  | - IR 4 plus accounts.   |
| Trusts     | - IR 5A plus accounts.  |

Partnership - IR 7 plus accounts. Each partner must also file an IR 3 return.

Generally, provisional tax is paid in two instalments (for payment dates see Appendix I), although a farmer may pay in three equal instalments, the last days for payment being 7 September, 7 March and 7 June, in that order, provided all the following conditions are met:

- (i) Balance date is between 1 April and 30 September (inclusive);
- (ii) More than half of the assessable income regularly comes from farming or an agricultural business; and
- (iii) Half or more of the gross cash income is regularly received after 7 February.

Certain features of the taxation system apply specifically to agriculture because of its place in the economy. These provisions are intended to encourage capital investment, development, increased stock numbers, etc. as well as providing facilities to smooth the large fluctuations in income which are inherent in the agricultural industry.

The department accepts that any of the following are carrying on their activities for farming or agricultural purposes:

- livestock farmers (e.g. sheep, cattle, deer, pigs, goats, horses).
- dairy farmers including sharemilkers.
- grain and seed growers.
- apiarists.
- poultry farmers.
- orchardists.
- horticulturists (e.g. market gardeners, tomato growers, berry fruit growers, flower growers).
- viticulturists.

The Department does not regard dealing in farming stock as an agricultural or farming business.

#### 6.8.2 Farm Income

The assessable income of a farmer will include the following:

- (i) Business profits from trading operations - i.e. the generally accepted accounting definition of profit, being SALES less PURCHASES, plus or minus CHANGES

IN VALUE OF STOCK ON HAND at the end of the year (increases are added, decreases are subtracted).

- (ii) The value of meat and produce consumed domestically.
- (iii) Income from contracting.
- (iv) Rents received from leasing farm property, including grazing fees.
- (v) Receipts from the hire of livestock and plant, including stud fees.
- (vi) Insurance proceeds in respect of the loss of crops or stock.
- (vii) Prize money from A & P shows, less entrance fees and other related expenses.
- (viii) Compensation for stock condemned.
- (ix) Refunds from Income Equalisation scheme.
- (x) Decreases in the number of livestock held at Nil Value (see section 6.8.4 Valuation of Livestock).
- (xi) Net Income from the sale of timber.  
Provisions relating to farm forestry are contained in section 6.8.8.

### 6.8.3 Farm Expenses

Private expenses in the nature of household stores, domestic wages, repairs to household equipment etc. are to be treated as private drawings, and must not be charged against farm income. Similarly, the private portion of domestic expenses, electricity and car depreciation should also be regarded as drawings.

In addition to the appropriate business expenses, farm expenses will include the following:

- (i) Legal expenses incurred in arranging finance for the purchase of, or in arranging for the lease or renewal of a lease of, income producing assets.
- (ii) Legal expenses incurred in borrowing or renewing loan moneys employed as capital in the production of assessable income.

- (iii) Telephone (excluding personal toll calls).
- (iv) Proportion of car expenses (including depreciation) applicable to business use, on the basis of:
  - (a) Half, where farmer has both car and truck. (It should be noted that the costs associated with the truck are deductible in full.)
  - (b) Three-quarters, where farmer has a car only.
- (v) Stores and rations provided to employees.
  - (a) Supplied to an outside employee (including a partner with less than 20% interest): the farmer can claim the actual cost if accurate records are kept, otherwise the deduction is limited to \$10 per employee per week. This applies where these costs have not already been claimed as a tax deductible farm expense.
  - (b) Supplied to related married employees or part proprietor employees: the actual cost of stores and rations supplied is tax deductible.
- (vi) Accommodation supplied to employees.
  - (a) Supplied to all employees except a partner-manager: depreciation at appropriate rate(s) and all expenses (e.g. mortgage interest, repairs, maintenance, etc.) are deductible in full.
  - (b) Supplied to a partner/manager: the partnership can claim 25% of the costs of the dwelling (refer paragraph (viii), below).
- (vii) Depreciation - see section 6.8.5 below.
- (viii) One quarter of total expenditure on the farm dwelling if situated on the farm - e.g. repairs and maintenance, depreciation, domestic power etc.
- (ix) Repairs and Maintenance costs on sheep yards, sheep dips and fencing. Depreciation may NOT be claimed on these assets, but the outlay costs on these items are usually claimed as development expenditure.

(x) Cost of papers and magazines containing farming information.

(xi) Wages paid to wife.

(a) Payments for cooking duties in respect of permanent employees (including adult members of the farmer's family employed full-time) will be allowed on the basis of:

1 permanent employee - \$12 per week.  
2 permanent employees - \$18 per week  
and thereafter an additional \$3 per employee per week.

It is necessary that the requirements for the payment of wages from husband to wife are met i.e. declaration that the wages are for genuine services, IR 12 completed, regular cash payments, tax and Accident Compensation levy deducted and accounted for.

This payment is in addition to any special arrangements made in respect of seasonal or part-time employees, e.g. shearers.

(b) Payments for work performed on, or on behalf of, the farm may be deductible if the Commissioner of Inland Revenue has given his prior consent to such payments. Before consent is granted, the Commissioner must be satisfied that the payment is for genuine services rendered in producing assessable income for the year.

An application for approval must contain certain details (the Inland Revenue Department provides appropriate declaration forms), but subsequent to approval only written confirmation that wages are still being paid on the agreed basis is required. The declaration should be filed before (or at least as soon as possible after) the wife's employment commences.

(xii) Cost of transporting employees' children to school.  
The cost of transporting the farmer's own children



is regarded as private and therefore not deductible.

(xiii) Accident Compensation Levy

All persons who suffer injury by accident in New Zealand (and in certain cases, outside New Zealand) and who are employees or self-employed at the time of the accident, have cover under the Earners' Scheme of the Accident Compensation Act.

The scheme is funded by a levy paid by employers and self-employed persons. These levies are a tax-deductible expense.

LEVIES ON EMPLOYERS

Every employer, whether an individual, a partnership, trust, company or club, must pay an annual levy by 30 June each year, based on the amount of leviable earnings paid to employees during the year ended 31 March. Levy rates vary according to the industrial activity of the employer.

For example:

Industrial Activity	Class No.	Levy Per \$100
Agricultural Contracting (Fencing, sheep dipping, spraying, harvesting, hay- making, baling, hedge cutting)	104	1.70
Agricultural Contracting (Scrub cutting, grubbing, burning, stumping and clearing)	124	3.15
Shearing	105	1.75
Cereal growing	101	1.20
Drainage or Sewer System	104	1.70
Construction on agricultural land		
Non-mechanised	104	1.70
Mechanised	507	1.90
Eel farming	130	1.75
Fencing-erecting and repairing	104	1.70
General farming	100	1.70

Fish farming	130	1.75
Hop growing	101	1.20
Market gardening	101	1.20
Orchards - including berry fruit	101	1.20
Poultry farming	101	1.20
Spraying - agricultural excluding aircraft	104	1.70
Stock buying	831	0.60
Tobacco growing	101	1.20

#### LEVIES ON THE SELF-EMPLOYED

Generally, owner-operators, partnerships and share-milkers are all regarded as self-employed for accident compensation purposes. The levy payable is 1.07% of the year's taxable farm (business) income, with a maximum levy of \$200.30 and a minimum levy of \$55.64 (based on the assumption that farm income is at least \$5,200. Alternatively the farmer may declare his minimum income to be \$11,180 (the average wage) in which case his minimum levy will be \$119.63). The minimum levy for a part-time self-employed person is \$10. Further considerations apply where dual earnings are received (i.e. a person is both self-employed and an employee). This levy must be paid by 7 March each year.

The above is a general introduction only, and queries regarding levies should be directed to the Inland Revenue Department. Queries regarding compensation claims should be directed to the State Insurance offices except in Dunedin where queries should be directed to the Accident Compensation Commission itself.

#### (xiv) Energy Conservation Expenditure

The total cost of acquiring and installing new plant, machinery or equipment for the purpose of energy conservation may be written off in the year the expenditure is incurred. (This excludes expenditure of a private nature such as to the family residence.) In addition, the cost of improving or altering plant, as insulating such assets or buildings for the purposes of energy conservation will also qualify for the 100% first year write-off. This deduction has been replaced by a loans scheme as from 1 April 1982. Binding

contracts made before that date will continue to qualify for the deduction.

- (xv) Various incentives, income levelling schemes etc (see below).

#### 6.8.4 Valuation of Trading Stock

##### 1. General Principles

Trading stock includes anything produced or manufactured; anything acquired or purchased for purposes of manufacture, sale or exchange; live-stock; but excludes land.

In the case of any business owned or carried on by the taxpayer, the value of the trading stock at the beginning and at the end of every income year must be taken into account when calculating assessable income. Where the value of the trading stock at the end of the income year has increased over the value at the beginning, the amount of the decrease is an allowable deduction against assessable income for that income year.

In general, the taxpayer has the option of valuing his trading stock at:

- (i) cost price; or
- (ii) market selling value; or
- (iii) replacement price.

However, the Commissioner of Inland Revenue may approve a lower valuation for trading stock other than livestock where obsolescence or other special considerations materially affect its value.

##### 2. Consumable Aids

Items consumed in the production of trading stock but which do not form part of the final product are regarded as consumable aids and not as trading stock. Therefore, expenditure on items such as fuel, farm chemicals, fertiliser held for spreading and hay held for winter use would be fully deductible in the year the expenditure is incurred, even although some unconsumed stocks may be held at the end of the year.

### 3. Growing Crops, Fruit and Vegetables

Crops, fruit and vegetables, standing timber and other products which grow from the land and are attached to the land are regarded as part of the land itself, i.e. a capital asset. Growing crops are not regarded as trading stock unless and until they are harvested or severed from the land.

### 4. Valuation of Livestock

Livestock is regarded as ordinary trading stock and the taxpayer has the following options:

1. Cost price, market selling value, or replacement price.
2. Standard Value.

A "standard value" is the value selected by the farmer and approved by the Inland Revenue Department, for each particular class of livestock. This value is maintained over time, irrespective of actual cost or subsequent market value. Generally the market value will greatly exceed standard value, but the farmer does not have to revalue or adopt market value where he continues his farming operation.

Standard values may be altered but only with the approval of the Commissioner. In practice, however, a note attached to the accounts is sufficient where the increase is to an amount less than current market value.

It should be noted that the Inland Revenue Department has now established minimum standard values as follows:

- Sheep, mixed	\$ 6	
- Cattle, dairy and beef		
- rising one year	\$ 30	
- others	\$ 70	
- Deer		
	Red/Wapiti	Fallow/Sika
All female animals	\$200	\$100
All male animals	\$150	\$ 75

(The previous approved values were hinds \$150, stags \$100, and yearlings \$50.)

These values apply to persons who commenced farming on or after 1 July 1980 for sheep and cattle, or 25 October 1979 for deer. It is proposed to review these standard values every three years.

Standard values are not available to dealers in livestock or for high priced stud stock (which should be valued at purchase price, with annual revaluations downwards over its useful life).

In addition:

- (a) Where new or additional property and livestock are purchased, the value of livestock may be progressively written down to standard value over a period of up to three years. A farmer is not bound to immediately adopt standard values. He may adopt cost price, market value or replacement value for a period not exceeding three years, and then elect to adopt standard values. However, once the write-down commences, it must take place over no more than three consecutive years.
- (b) Reliefs are available by allowing the spreading of resultant large incomes either forward or backward over three years in the event of a sale occasioned by death, retirement, adverse events, expiry of lease etc.
- (c) For income tax purposes, gifts of livestock to children who are at least 18 years old and who use those stock in a farming operation, may be made at a reasonable standard value, i.e. not unduly low. Note, however, that if gift duty is payable it is assessed on market value less consideration paid (if any).

### 3. Nil Value Scheme

The nil value scheme is an incentive scheme aimed at deferring the tax liability on increases in certain livestock numbers over a basic number until the stock is sold or otherwise disposed of, or revalued. The scheme is optional and applies to any taxpayer carrying on a farming business on land in New Zealand.

Main features of the scheme are as follows:

- (a) Applies only to cattle, sheep, pigs, deer (from 1978 income year) and goats (from 1981 income year).
- (b) The "basic number" of the herd or flock is the greater number of a particular class of stock held in the two income years prior to the year when the farmer elects to join the scheme.
- (c) At the end of each income year, all or part of the excess over the basic number in respect of each class may be valued at nil.
- (d) Any decrease in livestock numbers below the basic number of one class can be offset against any increase over the basic number in the other classes on the basis of "specified equivalents", defined as

1 head of cattle = 6 sheep = 4 pigs = 4 deer = 6 goats.

All categories within each class of livestock are regarded as equal, e.g. ewes, lambs, wethers etc. all have the same equivalent rating.

- (e) The Commissioner has power to make an equitable adjustment where there is a change in the basic nature of the farming operation, or an adverse event effects the farm, or other special circumstance.

Example:

A sheep and cattle farmer with a balance date of 30 June, elects to join the scheme at 1 July 1976. His year of first election is therefore the year ended 30 June 1977.

His basic number is estimated as follows:

	Stock on Hand		Basic Number	Standard Value
	30/6/75	30/6/76		
Sheep	3,100	4,000	4,000	\$ 5
Cattle	160	140	160	\$50

Year Ended 30/6/79

Closing Stock: Sheep 4,300, Cattle 160

Valued as:

Sheep - basic number at s.v.	4,000 @ \$5
increase over basic no.	300 @ Nil
Cattle - basic number at s.v.	160 @ \$50

Year Ended 30/6/80

Closing Stock: Sheep 4,500, Cattle 120

The decrease in cattle below the basic number in this year will necessitate a reduction to the 'increase' in sheep numbers closing stock, the reduction being made at the specified equivalent of 1 head of cattle = 6 sheep.

Sheep numbers 4,500

less decrease in cattle  
at specified  
equivalent

40 cattle x 6 240 Valued @ s.v.  
4,260

less basic number 4,000 Valued @ s.v.

Net Increase over  
basic number 260 Valued at Nil

Valued as:

Sheep - number at s.v.	4,240 @ \$ 5
increase over basic no.	260 @ Nil
Cattle - number at s.v.	120 @ \$50

Year Ended 30/6/81

Closing Stock: Sheep 5,000, Cattle 240

Valued as:

Sheep - basic number at s.v.	4,000 @ \$ 5
increase over basic no.	1,000 @ Nil
Cattle - basic number at s.v.	160 @ \$50
increase over basic no.	80 @ Nil

If the farmer wished to value part of the increase over Basic Number at Nil Value, the number valued at standard value is the Basic Number plus the additional stock not valued at Nil. The Basic Number, however, is not altered.

### 6.8.5 Depreciation

Depreciation is an allowance for loss in value of a fixed asset due to fair wear and tear, obsolescence, etc. Not all assets are depreciable - for example, assets which are not used to produce assessable income, or assets which are not subject to wear and tear (such as land), and under no circumstances can depreciation extend beyond cost. Where an asset has a part business and part private use, depreciation is calculated at the schedule rate and then apportioned between business and private (e.g. car depreciation).

There are two basic types of depreciation:

#### 1. FIRST YEAR DEPRECIATION ALLOWANCES

A single first year allowance will be deductible in the year in which certain assets are first used in the production of assessable income, and include:

- |  |     |
|--|-----|
| (a) New or used plant and machinery  | 25% |
| (b) New farm buildings, extensions and capital alterations (not dwellings) (40% prior to 22 June 1979) | 20% |
| (c) Employee accommodation (22% prior to 22 June 1979)   | 20% |

#### 2. ORDINARY DEPRECIATION ALLOWANCES

In the second and subsequent years, ordinary depreciation will be allowed as a deduction from assessable income provided adequate records are maintained. Depreciation is usually calculated as a fixed percentage of either the cost price of the asset (CP method) or the diminishing book value (DV method), and the Inland Revenue Department specifies both the rate and method of depreciation. These schedule rates are the maximum allowable for income tax purposes, although a lesser rate may be claimed if desired.

Selected examples of Schedule Rates of Ordinary Depreciation.

ITEM	%	
Barns - loafing and wintering	10	CP
Bridges - wooden	2.5	CP
- other	2	CP



Buildings - reinforced concrete	1	CP
- brick, stone, concrete	2	CP
- wooden	2.5	CP
- "temporary buildings"	10	DV
Chainsaws	50	DV
Crates - sheep and cattle	15	DV
Dams and Reservoirs - reinforced concrete	1	CP
- other	Maintenance	
Dips - shower type	10	DV
Effluent disposal units on farms	10	DV
	or Development	
Electric Fences	10	DV
Ensilage Pits - concrete walls with sliding roof	10	DV
Feeding out units for cattle	4	CP
Freezers - for dog meat	10	DV
Glasshouses - wooden framed	5	CP
- metal framed	3	CP
- P.V.C. Tunnel House	7.5	CP
	and Maintenance	
Irrigation plant	10	DV
	or Development	
Milking Sheds - built before 1/4/66	4	CP
- built after 1/4/66	10	CP
- conversion to herringbone	10	CP
- herringbone or rotary	10	CP
Motor Vehicles, trucks, bikes and scooters	20	DV
Pig Houses - all types	10	CP
Plant and machinery - motorised	20	DV
- non-motorised	10	DV
Poultry		
Battery type cages	10	DV
Colony houses with wooden frames, iron roofs and netting sides and bases	10	DV
Fowl Houses		
Steel framed	2.5	CP
Wooden framed	5	CP
Silos - erected on farm	10	DV
Slaughterhouses on farms - concrete	5	CP
timber and concrete	6	CP
timber	10	CP
Tractor Safety Frames	100	CP
Trailers	At the rate of the towing vehicle.	

#### 6.8.5 (i) Depreciation of Cars

For tax purposes, the depreciable cost of motorcars and station-wagons (excluding utility vehicles, e.g. land-rover, and vehicles of a "specialised nature", e.g. hearse) has been limited to:

- \$11,000 if purchased after 31 March 1981.
- \$8,000 if purchased between 31 March 1978 and 31 March 1981.
- \$7,000 if purchased between 31 March 1977 and 31 March 1977.
- \$6,000 if purchased between 23 October 1974 and 31 March 1977.
- Actual cost if purchased before 23 October 1974.

#### 6.8.5 (ii) Beekeepers

The cost of frames for supers and hives of a new apiarist or for additional supers and hives of an established apiarist is capital expenditure and not deductible. Ordinary depreciation is not allowable, but first year depreciation may be claimed. However, the full cost of repairs and the cost of replacement frames is a tax-deductible expense.

#### 6.8.5 (iii) Assets Acquired During the Income Year

- (a) BUILDINGS - Depreciation should be claimed on the cost of the building only (excluding land) for each whole or part month used.
- (b) OTHER ASSETS - A full year's depreciation is allowable if the asset was used for more than 6 months of the year or more than half a season if used for seasonal work; otherwise half of the year's depreciation is allowable.

#### 6.8.5 (iv) Assets Sold During the Income Year

- (a) AT A LOSS (i.e. sales price is less than book value).
  - (i) Buildings: Any loss on sale is not tax deductible. However, if no depreciation has been previously claimed, then accumulated deprec-

iation at schedule rates can be claimed in the year of sale.

- (ii) Other Assets: Any loss on sale is deductible in the year of sale. If no depreciation has been previously claimed, the total loss (i.e. cost less sales price) can be claimed when the asset is sold.

(b) AT A PROFIT (i.e. sales price exceeds book value).

- (i) Buildings: Ordinary depreciation recovered is not assessable, but if owned for less than 10 years, any write-back for tax purposes is merely to the extent that the disposal proceeds over and above book value represents a recovery of special, additional, or first year depreciation.
- (ii) Other Assets: Any depreciation recovered is assessable in the year of sale, although it can be used to offset (i.e. reduce) the cost of a replacement asset. If the depreciation recovered exceeds \$1,000, the taxpayer may elect to spread the amount recovered over the year of sale and up to three years back.

It should also be remembered that any excess of disposal proceeds above cost price represents a capital gain which is not taxable.

#### 6.8.6 Farming Investment Allowance

20% of the cost of new plant and machinery used for farming or agricultural purposes may be deducted from assessable income in the year the asset is first used. (The allowance was 40% prior to 22 June 1979.)

The allowance is available to lessees provided the asset qualifies for the allowance, the lease period is not less than 3 years, and both the cost price and the residual value (viz: cost less depreciation at tax rates) are specified.

The allowance is not available for cars, office equipment or any asset which is secondhand, costs less than \$500, has been claimed as development expenditure (see 6.8.7), or where another investment allowance has been claimed for that asset.

The allowance does not affect first year or ordinary depreciation, and is in addition to depreciation claims.

This means that the 20% investment allowance enables 120% of cost to be written off over the working life of the asset.

Where the asset, or an interest or share in the asset, is sold, disposed of, or ceases to be used (which includes the termination of a lease agreement) within 12 months of the date of first use, then that asset, or the portion disposed of, no longer qualifies for the investment allowance. If the allowance has already been claimed, then the tax assessment(s) involved would be amended by the Department.

The provision concerning the disposal of an interest or share in an asset is particularly important in the case of the formation, dissolution, or variation of the membership of a partnership.

#### 6.8.7 Development Expenditure

##### (i) Development Expenditure

Certain expenditures incurred during an income year which normally would be regarded as capital expenditures and therefore not deductible, may be treated as a tax-deductible expense.

Such expenditure may be deferred in whole or in part and claimed at the written election of the taxpayer in the year of expenditure and over not more than nine succeeding years. The types of expenditure which qualify are:

##### (a) Any expenditure incurred in any income year in:

- (i) The eradication or extermination of animal or vegetable pests on the land;
- (ii) The felling, clearing, destruction, and removal of timber, stumps, scrub, or undergrowth on the land;
- (iii) The destruction of weeds or plants detrimental to the land;
- (iv) The preparation of the land for farming or agriculture including the cultivation and grassing thereof, but excluding items specified in (b) below.

##### (b) Any expenditure incurred on or before 31 March 1983, in:

- (i) The draining of swamp or low-lying lands;
- (ii) The construction of access roads or tracks to or on the land;
- (iii) The construction of dams, stopbanks, irrigation or stream diversion channels, or other improvements for the purpose of conveying water for use on the land or for preventing or combating soil erosion;
- (iv) The repair of flood or erosion damage;
- (v) The sinking of bores or wells for the purpose of supplying water for use on the land;
- (vi) The construction of aeroplane landing strips to facilitate aerial topdressing of the land;
- (vii) The construction on the land of fences, including the purchase of wire netting for the purpose of making new or existing fences rabbit proof;
- (viii) The erection on the land of electric power lines or telephone lines;
- (ix) The construction on the land of feeding platforms, feeding yards, plunge sheep dips, or self-feeding ensilage pits;
- (x) The construction on the land of supporting frames for growing crops;
- (xi) The construction of earthworks, ponds, settling tanks, or other similar improvements primarily for the purpose of the treatment of waste products in order to prevent or combat pollution of the environment.

Such expenditure incurred after the above terminating date may be regarded as development expenditure provided the necessary steps have been taken before that date to enter into a binding contract involving substantial expenditure as part of a development plan which has been approved by the Commissioner of Inland Revenue.

Where the taxpayer ceases to carry on business before the total amount is deducted, the taxpayer has the option of:

- (a) deducting the balance remaining in the year he ceased business, or
- (b) reapportioning the amount over the year incurred, and the other years in which he carried on the farming business.

When farming or agricultural land is sold at a profit within five years after its acquisition any development expenditure which has been allowed as a tax deduction, can be recovered. Similarly, any development expenditure allowed on assets purchased can also be recovered if the asset is sold within five years of acquisition.

(ii) Fertiliser and Lime

Expenditure on the purchase and application of fertiliser and/or lime may be deferred in whole or in part, and claimed at the written election of the taxpayer in the year of expenditure and over not more than four succeeding years.

(iii) Tree Planting

Expenditure on planting or maintaining trees which have been planted to provide shelter or to prevent erosion or otherwise for agricultural or pastoral purposes, or in erecting or maintaining fences to protect any such trees, is tax-deductible in the year the expenditure is incurred. This deduction is not to be allowed in relation to expenditure for which the farmer receives a Forestry Encouragement Grant.

### 6.8.8 Farm Forestry

#### 1. Overview

The net profit from the sale of timber will be assessable income, i.e. sale proceeds less the 'cost' of the timber. Where the actual cost is not known, the general position is as follows:

- (a) The assessable profit is the value of the timber when sold less the estimated value of the timber when the land was purchased; or
- (b) Where significant quantities of native timber are involved, the cost may be calculated as the

difference in value between land with standing timber and the same land when cleared.

For income tax purposes, a sale of land with standing timber on it will be regarded as a sale of timber. Under these circumstances, the Commissioner can determine the sale price of the timber and include that value in the vendor's assessable income. (The 'cost' of that timber is an allowable deduction, however.) This provision does not apply:

- (a) Where the trees were planted to provide shelter, prevent erosion, or for other agricultural purposes on the farm; or
- (b) To trees planted or maintained under a forestry encouragement agreement under the Forestry Encouragement Act 1962.

Spreading the cost of timber.

The cost of timber is ordinarily deductible in the year the timber is sold. Where income from the sale of timber is derived in two or more financial years, the total cost of that timber may be apportioned and claimed over the years of sale.

Spreading income derived from timber.

Income from farm forestry qualifies for the Farm Income Equalisation scheme (refer section 6.8.8 (ii)), except where the timber sold was from trees:

- (a) planted to provide shelter or prevent erosion for an agricultural or farming business; or
- (b) planted or maintained under the Forestry Encouragement Act 1962.

when the income may be spread over the year of sale land up to four succeeding years provided the taxpayer makes written application within 12 months after the end of the year of sale.

## 2. Forestry Encouragement Loans (Made under the Forestry Encouragement Act 1962)

Under this scheme, farmers were granted loans to meet the cost of establishing and maintaining limited areas of plantations on farms for commercial purposes. The object of these loans was to encourage the planting

of woodlots on "difficult" land with a view to ensuring an adequate supply of timber for the future. The incentives offered included low interest rates and the remission of half the loan moneys where all obligations are carried out successfully.

Tax implications are as follows:

1. Loan moneys when received are not assessable.
2. Tax-deductible costs allowable are:
  - (a) Expenditures incurred in planting and maintaining trees in excess of any advance made under the agreement.
  - (b) Interest paid under the agreement.
  - (c) Repayments of principal of the loan.

Any taxpayer can claim against income from salary, wages, business or farming, the difference between the amount spent on the woodlot and the advance obtained under the loan scheme.

3. The amount of the loan written off (i.e. remitted) is not assessable income, nor is it tax deductible. However when the timber is eventually sold, the cost of timber is reduced by the amount written off.
  4. Where the taxpayer has been relieved of his liability for unpaid interest and the interest has not been claimed as a tax deduction, the amount so relieved does not form part of his assessable income.
3. Forestry Encouragement Grants (1970 and 1981)

The grants scheme has replaced the loan scheme with respect to farm woodlots under this scheme, the landholder receives a cash grant of 50% of the qualifying expenditure (which includes the labour of the landholder and his family) where trees are planted for commercial purposes in approved woodlots (refer section 1.5).

Tax implications are as follows:

1. The amount received (if any) in respect of labour of the taxpayer and/or his family will be regarded



as assessable income of that taxpayer for that year.

2. The amount received (if any) in respect of 'qualifying expenditure' will not be assessable income. Qualifying costs include:
  - (a) Expenditures incurred in planting or maintaining trees on the land or in preparing or otherwise developing the land for forestry operations; or
  - (b) Rent, rates, land tax, insurance premiums and other like expenses; or
  - (c) Interest on money borrowed for forestry business.
3. Qualifying expenditure in excess of 150% of the amount of the grant can be claimed for tax purposes. This excess expenditure is not tax-deductible in the year the expenditure is incurred: it must be carried forward and deducted under the "cost of forest formula" which is a means whereby the costs of establishing, managing, and developing a forest are capitalised and carried forward until final yield or clear felling begins, when they can be progressively claimed as costs against income in proportion to the area felled each year.

A forestry company has two other alternatives as well as carrying the cost forward - deduct from general income, if any, or carry forward as a loss.

Other costs not qualifying for a grant may nonetheless be tax deductible, such as:

- (a) Depreciation of assets not directly associated with management of tree crop such as administration buildings and workshops.
- (b) Repairs to and maintenance of permanent assets, including permanent roads, bridges, fences and buildings.
- (c) Capital costs of assets other than land and roading, such as machinery and equipment directly associated with management of the tree crop.

(Treat under "cost of forest formula". Note that depreciation is unnecessary under this method.)

The following items also represent costs, which do not qualify for the grant. Those of a capital nature will be added to the value of the appropriate asset, and may be depreciated for tax purposes (except land). Where alternative treatments may be available, the Inland Revenue Department or your accountant should be consulted. Examples of these costs are as follows:

- (a) Land, as well as legal, survey and valuation fees and mortgage expenses.
- (b) Initial consultancy fees relating to the feasibility of a forestry project.
- (c) Permanent buildings erected or purchased.
- (d) Machinery and equipment not directly associated with the management of the tree crop, e.g. roading equipment.
- (e) Permanent roads and bridges. (If road formation is on a permanent access route or is to be used during the life of the crop and for successive crops, it is a capital improvement to the land.)

#### 4. Conversion of 'Loan' to 'Grant'

Farmers who have established woodlots under a Forestry Encouragement Loan may convert to the Forestry Encouragement Grants Scheme. When converted the following provisions apply:

- (a) The outstanding balance of the loan is written off. It is not regarded as assessable income, nor is it tax-deductible. However, when the timber is eventually sold, the cost of timber is reduced by the amount written off.
- (b) Accumulated interest on the loan is written off.
  - (i) Interest previously claimed as a tax deduction is added back to assessable income.
  - (ii) Unpaid interest not claimed as a tax deduction is written off. It is not regarded as assessable income nor is it tax-deductible.

- (c) Future expenditure on the woodlot qualifies for the cash grant under the normal provisions of the Grants scheme.

#### 6.8.9 Income Levelling Schemes

Several schemes are available to taxpayers who derive income from agriculture which may serve to dampen the fluctuations inherent in farm incomes and subsequent taxation payments.

##### 1. Farm Income Equalisation Scheme

This schemes allows a farmer to smooth his income from year to year by permitting him to reduce his assessable income by the amounts which he deposits with the Inland Revenue Department. These deposits are retained in the Farm Income Equalisation Reserve Account in the farmer's name at the Reserve Bank. When amounts are withdrawn at a later date, they become assessable income.

Deposits.

- (i) Assessable income is reduced by the amount deposited during a year. Deposits may, however, be used to reduce the income of the immediately preceding year upon the taxpayer's written election, provided the deposit is made with the shorter of:
  - \* 6 months after balance date; or
  - \* 1 month after the due date for filing the return of income.
- (ii) The maximum amount of deposits in any one year is the assessable farm income for that year, and each deposit must be a minimum of \$200 (except the last deposit to make up the maximum).
- (iii) The minimum period of deposit is one year (able to be relaxed under certain circumstances) and the maximum period for any one deposit is five years.
- (iv) Generally no deposit can be made in a year when the farmer voluntarily withdraws funds from his reserve account.
- (v) 3% interest is paid on deposits held from 1/4/77 (except those withdrawn within one year), and credited to the appropriate deposit.

## Refunds.

- (i) Compulsory refunds are made if a deposit reaches the maximum term of five years, and voluntary refunds (withdrawals) can be made upon the taxpayers written application.
- (ii) All refunds become assessable income in the income year when the application is made, or the immediately preceding year on the same conditions as for deposits.
- (iii) A refund will not attract more tax than the deposit saved.
- (iv) Refunds are made from the oldest deposits first.
- (v) The minimum refund is \$200 unless the account balance is smaller; the maximum is the account balance.
- (vi) Special rules apply where the refund is due to the retirement, death, or bankruptcy of the farmer.

## 2. Deferral of Expenditures on Development and Fertiliser and Lime

- refer to section 6.8.7.

## 3. Nil Value of Livestock

- refer to section 6.8.4.

## 4. Livestock Incentive Scheme

The tax option provides limited flexibility for the smoothing of income - refer to Section 1 of this Manual.

## 5. Estimates of Provisional Income

A provisional taxpayer can estimate his provisional income, and pay provisional tax accordingly. Re-estimates can be made up to the due date of the last instalment of provisional tax - refer to section 6.2.

## 6.9 HORTICULTURE

The following provisions relate specifically to horticulture, but readers should also familiarise themselves with the general farming provisions.

1. Purchase of land, including conveyancing fees, is capital expenditure, and is not deductible. However, legal fees incurred in arranging finance to purchase the land, or in arranging to lease the land, will be tax deductible.
2. Buildings are capital expenditure and subject to depreciation allowances as for a farm (refer section 6.8.5).

i.e. New farm buildings and employee accommodation	First year and ordinary depreciation
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Taxpayer's dwelling	25% ordinary depreciation
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3. Shelter belts.  
The cost of planting and maintaining shelter trees is tax deductible (refer section 6.8.7 (iii)).
4. Development expenditure.

The cost of preparing land for agricultural purposes, including the cost of original fencing, is tax deductible as development expenditure (refer section 6.8.7 (i)). Note that this applies to the preparation of the land only. Thus the cost of fruit trees and of planting them would be capital expenditure of a fruitgrower as it is not regarded as preparation of the land, but rather is part of the operation of fruit growing.

5. Recurring annual costs until production.

Where there is a period between establishment and the production of the first crop, the annual recurring expenses would be tax deductible when incurred notwithstanding that they are incurred to earn profits in future years. For example, an orchardist would be entitled to deduct expenditure on cultivation, pruning, spraying, rates, insurance, depreciation, etc. until the trees reach fruit bearing age.

6. Hail Damage - compensation payments received by orchardists for hail damage made to fill a gap in the profits are assessable income in the year received.

7. Growing crops of fruit, vegetables etc. are a capital asset and are only regarded as trading stock when they are harvested or severed from the ground (refer section 6.8.4).
8. Horticulturists qualify for the Farm Income Equalisation Scheme (refer section 6.8.9 (i)) and the Farming Investment Allowance (refer section 6.8.6).
9. Schedule Rates of Depreciation

ITEM		%
Agricultural plant, and equipment including tractor drawn implements.	10	DV
Self-propelled equipment	20	DV
Cloches	Replacement or Annual Revaluation or Standard Value	
Irrigation/Frost protection plant - pumping unit, sprinklers, standards and pipelines.	10 or Development	DV
Glass houses - wooden framed	5	CP
- metal framed	3	CP
Hop frames	Replacement or Annual Revaluation or Standard Value or Development	
Hop kilns	15	DV
Plastic pots for tomato growing	Standard Value (20c each)	
P.V.C. Tunnel houses	7.5 plus maintenance	CP
Spray plant (orchardists)		
Self propelled and air-blast units	20	DV
Others	10	DV

Tomatoes-structure for shading plants	5	CP
Trickle irrigation equipment in glasshouses.	25	DV

## 6.10 FISHING INDUSTRY

The following provisions relate specifically to the fishing industry but readers should also familiarise themselves with the previous sections.

In general 'fish' includes shellfish and crustaceans.

### 6.10.1 Spreading of Repair Costs on Fishing Boats

Expenditure incurred in making repairs or alterations necessary to obtain a certificate of survey under the 'Shipping and Seamen Act 1952' may be deferred in whole or in part and claimed at the written election of the taxpayer in the year of expenditure and up to four succeeding years. The expenditure covers repairs and alterations to the hull, equipment or machinery, and must be ordinarily deductible as 'repairs and maintenance' (i.e. would not be regarded as capital expenditure).

### 6.10.2 Depreciation

#### 1. First Year Depreciation

Allowances available to the fishing industry include:

(a) New or used plant and machinery	25%
(b) New buildings or building improvements required for fish export hygiene purposes	30%
(c) Employee Accommodation	20%

#### 2. Ordinary Depreciation

In addition to the relevant items specified in section 6.8.5, the following schedule rates may apply.

ITEM	%	
Cool stores and freezing chambers		
Buildings	3	CP
Plant	10	DV

## Fishing Vessels

Registered Hull, including fixed gear and refrigeration rooms.	10	DV
Deck machinery, winches and motors	15	DV
Main engine	20	DV

Fish Processing Buildings 4 CP

Fish Processing Plant 15 DV

Wooden fish boxes and plastic fish containers	Replacement only or Standard Value or Annual Revaluation
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Radio - Receivers	20	DV
- Telephones	20	DV
- Testing equipment	20	DV
- Transmitters	20	DV

### 3. Additional Depreciation on Certain Capital Expenditure on Fishing Boats.

Capital expenditure arising from compulsory surveys of fishing boats carried out by the Marine Department may be written off at the rate of 25% of the expenditure in the year incurred and acquiring, installing or extending equipment or machinery for use in a fishing boat.

It is necessary that the taxpayer keeps full and satisfactory accounts.

### 6.10.3 Fishing Investment Allowance

40% of the cost of new fishing boats (including a small boat belonging to a fishing boat), new plant and machinery permanently on a fishing boat, or new plant and machinery used in rock oyster farming, mussel farming, or fresh water fish farming, may be deducted from assessable income in the year the asset is first used. Expenditure on converting or making structural alterations to a fishing boat to enable it to be used or continue to be used as a fishing boat also qualifies.

The allowance is available to lessees provided the asset qualifies for the allowance, the lease period is not less than 3 years, and both the cost price and the residual value (viz: cost less depreciation at tax rates) are specified.



The allowance is not available for road vehicles, buildings, wharves, jetties and shore installations; office equipment; nets, baskets, ropes, buoys etc; containers, assets costing less than \$500; any asset which is second-hand; where the expenditure has been claimed as development expenditure; or where another investment allowance has been claimed for that asset.

The allowance does not affect first year or ordinary depreciation and is in addition to depreciation claims.

#### 6.10.4 Development Expenditure - Fish Farming

Certain capital expenditure by rock oyster or mussel farmers or freshwater fish farmers may be claimed as a tax deduction if incurred prior to 31 March 1983. Such expenditure may be deferred in whole or in part and claimed at the written election of the taxpayer in the year of expenditure and up to nine succeeding years. The types of expenditure which qualify are:

##### (a) Rock Oyster Farming

- (i) Acquisition and preparation of spatting sticks;
- (ii) Construction and erection of posts, rails, or other structures for the holding of spatting stocks during spat catching and maturing;
- (iii) Construction of fences (including breakwater fences).

##### (b) Mussel Farming

- (i) Acquisition, preparation and mooring of pontoons, rafts, or other floating structures for collecting spat;
- (ii) Acquisition, mooring and outfitting of moored floating platforms from which the collected spat is suspended for subsequent growth;
- (iii) Collecting and depositing of shell or other suitable material on the sea bed to create spatting surfaces;

- (iv) Acquiring, outfitting and mooring of the special long lines on which mussels are cultivated.
- (c) Freshwater Fish Farming
  - (i) Ground testing and drilling of water bores;
  - (ii) The draining of land and the excavating of sites for ponds, tanks and races;
  - (iii) The construction of races, sluices, ponds, settling ponds, and tanks of impervious materials to conduct and contain water.
  - (iv) The supply and installation of pipes for water reticulation;
  - (v) The construction of walls, embankments, walkways, service paths, and access paths;
  - (vi) The supply and installation of baffles and screens for the containing or excluding of fish;
  - (vii) The construction of fencing on the fish farm;
  - (viii) The construction of effluent ponds and channels.

All provisions relating to deductibility of farm development expenditure apply similarly to this expenditure, including the position on termination of the qualifying period where the taxpayer has embarked on an approved "development plan" before that date, as well as recovery of developmental allowed if the area is sold within five years (refer section 6.8.7).

#### 6.10.5 Income Equalisation Scheme

Taxpayers engaged in the business of fishing are able to make deposits under the farm income equalisation scheme, and for this purpose "fishing" includes rock oyster farming, mussel farming, and freshwater fish farming. For details refer to section 6.8.9(i).

## 6.11 EXPORT INCENTIVES

The following section outlines the major incentives which could apply to primary producers who are involved in exporting. For reasons of brevity, only selected aspects have been included, and care must be exercised when applying these guidelines to any particular circumstance. Your accountant or the appropriate authority should be consulted regarding queries.

The following table summarises the previous export incentives:

- \* Increased exports incentive deduction.  
Terminates on 31 March 1983, although exporters may irrevocably adopt the export performance incentive for qualifying goods before that date.
- \* New markets exports incentive.  
Terminated on 31 March 1981, although exporters may irrevocably adopt the export performance incentive for qualifying goods before that date.
- \* Exports incentive schemes for qualifying services and/or projects.  
Terminated on 31 March 1980, and replaced by the tax credit schemes for qualifying services and/or projects.
- \* Export market development expenditure-(ordinary claim)  
Terminated on 31 March 1980, and replaced by the tax credit scheme for export-market development incentive.
- \* Export-market development activities - (self-employed persons)  
Terminated on 31 March 1980, and replaced by the tax credit scheme for export-market development activities for self-employed persons.

The following summarises the tax credit export performance incentives which have been operative since 1 April 1980. All of these incentives currently terminate on 31 March 1985.

- \* Export performance incentive for qualifying goods.
- \* Export performance incentive for qualifying services and/or projects.

- \* Export-market development incentive.
- \* Export-market development incentive for self-employed taxpayers.

#### 6.11.1 Increased Exports Incentive

The increased exports incentive is intended to encourage the exporting of certain goods (other than the traditional basic primary products) by allowing a tax deduction based on the value of the increased export sales made in an income year up to the terminating date of 31 March 1983.

The amount of the deduction is the greater of:

(i) 25% of the increase in export sales; or

(ii) an amount calculated as  $\frac{X}{Y} \times Z$

where "X" is the value of export sales for the current year.

"Y" is the value of export sales for the preceding year.

"Z" is 25% of the previous year's increase in export sales.

The "increase in export sales" for an income year is the excess of the value of the taxpayer's export sales in that income year over the average annual exports in his "base period". The base period is the first three years of the seven income years immediately preceding the income year under consideration.

The deduction may be claimed by any "exporter" or "export merchant" of "qualifying goods" except a co-operative dairy company, a co-operative milk marketing company, a co-operative pig marketing company, or a mineral or petroleum mining company.

An "exporter" is a manufacturer, producer or processor of qualifying goods who must have:

- (a) Exported the goods from New Zealand; and
- (b) Sold or otherwise disposed of the goods to an overseas purchaser; and
- (c) Been the owner of the goods at the time of the sale or disposal.

He can engage a commission agent to export the goods on his behalf so long as he remains the owner of the goods up

to the point of sale to the overseas purchaser; but if the goods are sold or otherwise disposed of to the agent then it is the agent and not the manufacturer who can claim the incentive deduction.

An "export merchant" is the person or firm that:

- (a) Purchases goods from the manufacturer or other supplier and directly contracts the sale of those goods with an overseas buyer; and
- (b) Is responsible to the overseas purchaser for the quality, quantity and delivery of the goods sold; and
- (c) Is entitled to receive payment for the goods from the overseas purchaser; and
- (d) Is actively engaged in seeking out export opportunities for new zealand products.

Qualifying goods.

In general all manufactured goods (i.e. goods incorporating a significant degree of domestic processing) qualify for the incentive but there are specific exclusions.

These are:

- (a) Goods sent overseas by way of gift.
- (b) Goods exported with the intention that they will be returned to New Zealand.
- (c) Goods imported and subsequently exported from New Zealand after being processed, packed, graded, sorted, or incorporated with another product in New Zealand unless the duty free selling price exceeds the original landed cost by at least 35%.
- (d) Goods re-exported from New Zealand without processing, packing, grading, or sorting in New Zealand.

Goods derived from primary industries and unprocessed goods are excluded from the incentive under four categories.

- (a) Animals and animal products and by-products (including fish, dairy produce, meat, meat products, wool, and their respective by-products).
- (b) Agricultural and horticultural products and by-products.

(c) Forest products and by-products.

(d) All minerals, metals occurring in their natural state, metal ores, raw scrap metal, and primary aluminium and aluminium alloys.

There are, however, certain processed products which specifically qualify for the incentive despite their being excluded under one of the above general headings. These are listed in Appendix iii.

Example:

An exporter has achieved export sales during the years ended 31 march as follows:

	Year	Export Sales	
	1971	\$ 6,000	Base Period
Base Period	1972	7,000	1978
for 1979	1973	8,000	
	1974	12,000	7 years
	1975	14,000	immediately
7 years	1976	16,000	preceding
immediately	1977	18,000	1978
preceding 1979	1978	15,000	
	1979	12,000	

The value of export sales for 1979 is \$12,000. The base period for the 1979 year is the 1972 to 1974 years, during which the total export sales were \$27,000.

The increase in export sales for the 1979 year is therefore:

$$\begin{aligned} \$12,000 - \frac{27,000}{3} &= 12,000 - 9,000 \\ &= \$3,000 \end{aligned}$$

The value of export sales for 1978 was \$15,000. The base period for the 1978 year is the 1971 to 1973 years, during which the total export sales were \$21,000. The increase in export sales for the 1978 year is therefore:

$$\begin{aligned} \$15,000 - \frac{21,000}{3} &= 15,000 - 7,000 \\ &= \$8,000 \end{aligned}$$

The increased exports incentive deduction for 1979 will be the greater of the amounts calculated as follows:

(i) 25% of \$3,000 = \$750.00

or

(ii)  $\frac{12,000}{15,000} \times (25\% \text{ of } \$8,000) = \$1,600.00$

The deduction is therefore \$1,600.

New Exporters.

Where there have been no previous export sales, exporters qualify for the additional 25% deduction on all their qualifying export sales in an income year until a base period has been established, i.e. until the sixth year of export.

#### 6.11.2 New Markets Increased Exports Incentive

Exporters who export qualifying goods in more than token quantities before 1 April 1981, to new markets as approved by the Department of Trade and Industry, will qualify for a 15% deduction from assessable income for increases in export sales to a new market in each of the first 2 years of the market development. The deduction is in addition to the basic 25% allowance for the increased exports incentive (above) and applies to the same exporters and range of goods that qualify for that incentive.

A "new market" is an area which the Department of Trade and Industry considers to be a district and separate market, and to which no New Zealand exporter has sent more than token quantities of similar goods in the previous 3 years. A new market can thus include:

- \* an existing product to a new market, or
- \* a new product to an existing market.

The allowable deductions are:

- (i) For the first 12 consecutive month's export sales of particular kinds of goods to new markets, the deduction will be 15% of the value of those export sales, and should be claimed in the income year in which the first 12 months are completed.
- (ii) For the second 12 month period, the deduction will be 15% of the increase in export sales of those goods over the export sales of the same goods in the first 12 month period, and should be claimed in the

income year in which the second 12 months are completed.

Example:

A taxpayer with a 31 March balance date.

Product	Approved New Market	Date of First Sale	1st 12 months ends	Sales 1st 12 months
A	X	1/ 8/75	31/ 7/76	\$100,000
B	Y	1/12/75	30/11/76	\$ 50,000
C	Z	1/ 6/76	31/ 7/77	\$160,000

Product	2nd 12 months ends	Sales 2nd 12 months
A	31/ 7/77	\$140,000
B	30/11/77	\$ 40,000
C	31/ 5/78	\$200,000

The first 12 months sales of products A and B expires within the 1977 income year. Therefore the incentive deduction allowable is:

Product A	15% of \$100,000	=	15,000
B	15% of 50,000	=	<u>7,500</u>
			<u>\$22,500</u>

1978 Income Year.

The second 12 months sales of products A and B expires during the 1978 income year, and the incentive deduction is based upon the increase in sales over the first 12 month period, for each product. The increase in sales for product A is \$40,000, while the increase in sales for product B is nil.

Also, the first 12 month's sales for product C expires within the 1978 income year.

The allowable deduction is therefore:

Product A	15% of \$40,000	=	6,000
B	15% of \$160,000	=	<u>24,000</u>
			<u>\$30,000</u>



1979 Income Year.

The second 12 month's sales of product C expires during the 1979 income year. The incentive deduction is based on the increased sales of product C, and the deduction would be Product C 15% of \$40,000 = \$6,000.

#### 6.11.3 Tax Credit Scheme for Exporters

Where an exporter or export merchant is eligible for the increased exports incentive or the increased new markets exports incentive but is unable to receive the full tax saving because of a loss situation or having insufficient assessable income, the taxpayer can convert the lesser of the value of the incentives or the loss for the current income year into a refundable tax credit of 45c in the dollar. This tax credit is paid to the taxpayer as though it was refund of tax overpaid. Alternatively, the taxpayer can carry forward the loss in the normal manner.

#### 6.11.4 Export Performance Incentive for Qualifying Goods

This incentive basically applies to the same goods and the same exporters and export merchants who qualify for the increased exports incentive and the new markets increased exports incentive. The incentive commenced on 1 April 1980, and allows exporters to choose between the 'new' export performance incentive and the existing increased exports and new markets export incentives (which terminate on 31 March 1983). Once made, the election to adopt the export performance incentive is irrevocable.

The incentive allowance is given as a refundable tax credit, the rate of which varies according to the local domestic content of the goods exported. The amount of tax credit is calculated by multiplying the total value of f.o.b. export sales for a particular product by the specified rate of tax credit. The specified rate of tax credit is found in a schedule prepared by the Department of Trade and Industry which lists export commodities and their associated value added band and the rate of tax credit. The following table shows the domestic value added bands and rates of incentive allowance:

Band	Domestic Value Added	Rate of Tax Credit
A	80 - 100%	11.9
B	70 - 80	10.5
C	60 - 70	9.1
D	50 - 60	7.7
E	40 - 50	6.3
F	20 - 40	4.2
G	0 - 20	1.4

Example:

Assume qualifying goods exported were:

Band A	f.o.b. sales	\$100,000
B	f.o.b. sales	\$200,000
C	f.o.b. sales	\$300,000

Export Performance Incentive is calculated as:

\$100,000	x 11.9%	=	11,900
200,000	x 10.5%	=	21,000
300,000	x 9.1%	=	<u>27,300</u>

Total incentive tax credit	<u>\$60,200</u>
----------------------------	-----------------

#### 6.11.5 Export Performance Incentive for Qualifying Services and/or Projects

As from 1 April 1980, any taxpayer who provided professional or technical services overseas will be entitled to a refundable tax credit of 11.9% of the net foreign currency earnings which are either remitted back to New Zealand or are paid out of funds held in New Zealand. Qualifying services are defined and include advisory services relating to the establishment or development of any farming, agricultural, horticultural, fishing, or forestry project.

Example:

Gross fees from qualifying services	\$20,000
less overseas expenditure	5,000
	<hr/>
Net foreign currency earnings	<u>\$15,000</u>

Net foreign currency earnings transferred  
to New Zealand through the N.Z.  
banking system \$10,000

Tax Credit is 11.9% of \$10,000 i.e. \$ 1,190

#### 6.11.6 Export-Market Development Expenditure Incentive

As from 1 April 1980, any taxpayer who incurs qualifying export-market development expenditure will be entitled to refundable tax credit of 67.5% of such qualifying expenditure.

To qualify for the incentive, the export promotion expenditure must:

- (i) be tax-deductible under general taxation law (i.e. capital expenditure would not qualify); and
- (ii) have been incurred primarily and principally for the purposes of seeking markets (including the retention of existing markets) or the obtaining of market information or market research, or creating or increasing demand for the export of goods that have been manufactured, produced, assembled, processed or packed or graded and sorted in New Zealand. "Services" means services in relation to construction projects, courses of educational training or the furnishing of technical advice or assistance.

Qualifying expenditures in general, are only those costs which are incurred outside New Zealand in promoting exports, and include, amongst others:

- \* Overseas travel and accommodation expenses.
- \* Salaries and wages paid to New Zealand based employees in respect of the time spent outside New Zealand.
- \* Expenses (including those incurred in New Zealand) of advertising outside New Zealand.
- \* Direct costs of providing samples or technical information to persons outside New Zealand, reduced by any consideration received.
- \* Costs incurred outside New Zealand in the preparation or submission of tenders or quotations, or in sales promotion activities or campaigns.

- \* Payments to overseas agents for the purposes of activities carried on outside New Zealand.

Expenditures which do not qualify for the incentive include:

- \* Entertainment expenses.
- \* Director's fees.
- \* Salaries and wages paid in respect of employee's time within New Zealand.
- \* Payments to agents for work carried out within New Zealand.
- \* Costs of advertising inside New Zealand.
- \* Commissions on sales.
- \* Expenditure in respect of which an Export Program Grant has been received. However, the proportion of expenditure not reimbursed by the grant will be allowed as an ordinary deduction from assessable income.

Where the tax incentive credit is allowed in respect of qualifying expenditure, the same expenditure cannot be deducted from assessable income.

Example:

Assume that the taxpayer has received an export program grant (of \$12,800) in respect of qualifying expenditure of \$20,000.

Qualifying Expenditure:

Salaries and Wages	\$17,000
Overseas travel and accommodation	5,250
Net cost of samples	750
Advertising overseas	<u>2,000</u>
Total qualifying expenditure	25,000
less Qualifying expenditure in	
respect of which a grant was made	<u>20,000</u>
Expenditure which qualifies for the	
tax credit	<u>\$ 5,000</u>
Tax Credit is 67.5% of \$5,000, i.e.	<u>\$ 3,375</u>

#### 6.11.7 Export Market Development Activities Incentive for Self-Employed Taxpayers

As from 1 April 1980, any taxpayer (not being a company) who is in business on his own account or as a member of a partnership who has engaged in market research, securing publicity or soliciting business, or supplying services outside New Zealand in relation to construction projects, education training courses, or technical advice or assistance, will be entitled to a refundable tax credit of 67.5% of the "value of time" spent on these export-market development activities outside New Zealand.

The "value of time" is calculated as:

$$\frac{(a \times b) - (c \times \frac{100}{64})}{2}$$

where:

- a is half the minimum hourly rate usually charged by the principal of a New Zealand firm for the particular profession or occupation of the taxpayer. If there is no customary rate, the Commissioner may determine a reasonable rate.
- b is the number of complete hours spent on export-market development activities in the income year.
- c is the amount of any export program grant or export market development grant received in respect of the time spent by the taxpayer in export market development activities.

Example:

Assuming:

- (i) the taxpayer spent 1,000 hours on qualifying export-market development activities;
- (ii) the minimum charge-out rate for the taxpayer's profession is \$20 per hour; and
- (iii) during the year, the taxpayer received an Export Program Grant in respect of the value of time of \$1,920, then the value of time will be:

$$\frac{(\frac{\$20}{2} \times 1,000) - (\$1,920 \times \frac{100}{64})}{2}$$

= \$3,500

Tax Credit is 67.5% of \$3,500 i.e. \$2,362.50

#### 6.11.8 Export Program Grants Scheme

This incentive scheme is to replace both the export-market development grants and the new markets export development grants schemes as from 1 April 1980. The export program grants scheme is formulated to encourage thorough and co-ordinated research into the development and marketing of New Zealand goods and services overseas.

The export program grants scheme provides a cash grant of 64% of the agreed amount of qualifying expenditure for the coming program year. The grant is not assessable for tax purposes, but will reduce the expenditure deductible for tax purposes. The remaining expenditure may be claimed as an ordinary tax deduction. Expenditure which is the subject of a grant does not qualify for the export market development taxation incentive.

Eligible expenditure \$100	
Export program grant	\$64.00
Tax saving on balance (at normal company rates) is \$100-64) x .45	16.02
Overall level of assistance	<u>\$80.20</u>

Grants will be available for a period of up to three years in respect of any one program with payments being made in annual instalments in advance. At the end of each program year an adjustment will be made to the amount of the following year's grant (or the final grant in the case of the last year in the program) in such a way that the total rate of the incentive on actual expenditure is maintained at 80.2 cents in the dollar.

Expenditure qualifying for the grant includes all expenditures eligible for the export market development taxation incentive, plus costs incurred within New Zealand such as salaries and wages and value of time in promoting overseas markets. To qualify under the grants scheme the overseas markets must be approved by the Department of Trade and Industry as having potential for future development.

## 6.12 APPENDICES

### 6.12.1 Appendix I

#### Last Days for Payments By Provisional Taxpayers

Provisional Tax				Terminal Tax	
Balance Month	1st Instalment	2nd Instalment		Companies	Others
Oct 19A1	7 Mar 19A1	7 Sept 19A1		7 Nov 19A2	7 Mar 19A3
Nov 19A1	7 Mar 19A1	7 Sept 19A1		7 Nov 19A2	7 Mar 19A3
Dec 19A1	7 Apr 19A1	7 Oct 19A1		7 Dec 19A2	7 Mar 19A3
Jan 19A2	7 May 19A1	7 Nov 19A1		7 Jan 19A3	7 Mar 19A3
Feb 19A2	7 Sept 19A1	7 Mar 19A2		7 Feb 19A3	7 Mar 19A3
Mar 19A2	7 Sept 19A1	7 Mar 19A2		7 Mar 19A3	7 Mar 19A3
Apr 19A2	7 Sept 19A1	7 Mar 19A2		7 Mar 19A3	7 Mar 19A3
May 19A2	7 Sept 19A1	7 Mar 19A2		7 Mar 19A3	7 Mar 19A3
June 19A2	7 Sept 19A1	7 Mar 19A2		7 Mar 19A3	7 Mar 19A3
July 19A2	7 Nov 19A1	7 May 19A2		7 Mar 19A3	7 Mar 19A3
Aug 19A2	7 Mar 19A2	7 Sept 19A2		7 Mar 19A3	7 Mar 19A3
Sept 19A2	7 Mar 19A2	7 Sept 19A2		7 Mar 19A3	7 Mar 19A3

### 6.12.2 Appendix II

#### Rates of Income Tax for Individuals 1982 Income Year

Taxable Income		Amount and Rate of Tax			
\$	\$	\$			\$
1 -	5,500	0 plus	14.5%	of excess over	0
5,501 -	12,600	797.50	"	35.0	5,500
12,601 -	17,600	3,282.50	"	48.0	12,600
17,601 -	22,000	5,682.50	"	55.0	17,600
22,001 upwards		8,102.50	"	60.0	22,000

### 6.12.3 Appendix III

#### Goods which Specifically Qualify for the Increased Exports Incentive

##### Part A

Reconditioned or rebuilt secondhand plant and machinery.  
Flat galvanised steel products.

##### Part B

Farmed salmon.

Fats and oils of fish, canned and bottled fish, prepared fish dinners, prepared consumer fish packs, fish paste, fish balls, fish cakes, fish fingers, fish sausages, fish extracts, fish soups and fishmeal.

Fish and shellfish of the following species: Barracouta, Black Bream, Blue Hake, Creamfish (Leather Jacket), Hoki (Whiptail), Kahawai, Kingfish, Ling, Mao Mao, Mackerel, Moki, Monkfish, Mullet, Pilchard, Red Cod, Southern Blue Whiting, Trevally, Warehou, Octopus, Squid, Mussel, (farmed or cultivated), Pacific Oysters, and Rock Oysters.

Smoked fish, excluding Snapper and Blue Cod.

Whole smoked eels and smoked eel fillets.

Comb honey in consumer packs and honey dew.

Extracted honey in consumer packs weighing 3 kilograms net or less.

Pollen

Propolis in cake form

Refined beeswax

Chilled or frozen retail consumer packs principally comprising edible meat portions, which have been processed beyond the primal cut stage, have a minimum packing standard of clipped, tied, or sealed wrapping, and are sold for retail consumption without further processing or packaging.

Chilled or frozen retail consumer packs comprising edible poultry portions only, which have a minimum packing standard of clipped, tied, or sealed wrapping and are sold for retail consumption without further processing or packaging.

Chilled or frozen portion controlled cuts of meat, which have been processed beyond the primal cut stage, have been produced with an exacting weight tolerance, and are sold for consumption without further processing or packaging.

Chilled or frozen edible fancy meats (including poultry fancy meats) which are sold for consumption without further processing or packaging.



Dried, concentrated, or evaporated meat or poultry products (other than canned goods) which are sold for consumption without further processing or packaging.  
Manufactured meat or poultry smallgoods (other than canned goods)  
Animal gland or organ extracts and chemicals resulting from the same or from dairy products or dairy waste, for use in the pharmaceutical industry or for research purposes.  
Beef powder  
Catgut processed to a quality suitable for use for surgical, sporting, or musical purposes  
Cholic acid, and products and by-products of cholic acid  
Denatured and processed lamb caeca  
Dried mucosa  
Dried and processed deer by-products  
Edible powders of, or edible powdered offal from, meat or poultry or fish  
Frozen fertilised ova  
Lactose and products and by-products of lactose  
Leather and leather products  
Pet foods not fit for human consumption  
Prepared dinners containing either meat and vegetables or game and vegetables  
Processed cheese  
Processed deep frozen semen  
Selected and tubed natural sausage casings derived from animals other than pigs  
Sera derived from animal blood  
Soup stock  
Spray-dried goat milk powder  
Taxidermy products  
Wool grease and products of wool grease  
Woollen and worsted yarns  
Infant milk formulas having a protein content per 100 calories of reconstituted powder not exceeding 4.0 grams or not less than 1.8 grams, a sodium content not exceeding 80 milligrams or not less than 20 milligrams, and a calcium/phosphorus ratio not greater than 2:1 and not less than 12:10.

#### Part C

Any produce, being fruit, legumes, vegetables, or milled cereals, (including extracts, fats, oils, concentrates, powders, soups, juices, jams, jellies, pastes or purees derived from fruit, legumes, vegetables, or milled cereals) which has been canned, dried, dehydrated, evaporated, individually quick frozen, or otherwise incorporates a significant degree of local processing.

Block frozen berry fruit  
Bulbs  
Fresh cut flowers  
Fresh fruit (other than apples or pears)  
Fresh vegetables  
Retail packet seeds  
Trees and shrubs  
Wine and grapejuice

Part D

Pulp, paper (including newsprint), sawn timber, wood chips,  
and manufactured articles of wood and reconstituted wood

Part E

Kauri gum  
Pottery clay body  
Precious and semi-precious stones (excluding greenstone)  
which has been fully worked and cut for use in jewelry or  
goldsmith's or silversmith's wares  
Processed bentonite  
Pure dried vacuum salt



## **SECTION 7**

### **ESTATE AND GIFT DUTY**

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## 7. ESTATE AND GIFT DUTIES

### 7.1 INTRODUCTION

Both estate duty and gift duty are levied under the Estate and Gift Duties Act 1968 as amended. Both are administered by the Inland Revenue Department.

### 7.2 ESTATE DUTY

#### 7.2.1 Introduction

In broad terms, estate duty is a tax on the total value of property that was owned by a person who has died as that passes from one person to another because of his death.

Estate duty is calculated according to the following general relationship:

Estate Assets
plus Notional Estate
less <u>Exempt Assets</u>
Dutiable Estate
less Allowable Debts
less Matrimonial Home Allowance
less <u>Charitable Allowance</u>

#### FINAL BALANCE

- calculation - Estate Duty
<u>less Reliefs</u>

#### NET DUTY

#### 7.2.2 Property Liable to Estate Duty

1. All property situated in New Zealand. (Property is used in the widest sense to cover all assets including land, cash, proceeds of life insurance policies, etc.)
2. All property outside New Zealand if the deceased was domiciled in New Zealand at the date of death. A credit is allowed in respect of estate duty paid overseas.
3. "Notional Estate", being:
  - (a) Dutiable gifts (i.e. gifts which are or may be liable to gift duty) made within 3 years of

death. Gifts which are exempt from gift duty are also exempt from estate duty - refer section 7.3.3.

- (b) Gifts made before death where the donor has reserved an interest for his lifetime (i.e. gifts with strings attached).
- (c) Property disposed of before death where a benefit passes back to the estate upon his death.
- (d) The deceased's share or interest in any property held jointly, other than a joint family home.
- (e) Where all or part of the deceased's interest in a policy of life insurance on his life has been disposed of to a relative by the deceased within 3 years of death, a proportion of the gross benefits payable at death is included in the dutiable estate. This provision does not apply to a genuine disposition for full consideration to non-relatives.

The value to be included in the dutiable estate is calculated according to the following formula.

Premiums

$$\frac{\text{up to disposition}}{\text{Total Premiums}} \times \text{Gross Proceeds} \times \frac{\text{Proportion of}}{\text{interest disposed of}} \text{ to death}$$

Allowance is then made for any consideration paid to the deceased when the policy was assigned.

Example:

Policy taken out by deceased in 1968. Annual premium \$200. Assigned by way of sale to his wife in 1976 for the surrender value of \$2,000. Deceased dies in 1978, and the policy realises \$5,500.

Amount to be included in the dutiable estate is:

$$\frac{\text{Premiums to date of assignment}}{\text{Total premiums during term}} \times \text{Proceeds}$$

$$= \frac{(8 \times \$200)}{(10 \times \$200)} \times \$5,500 = \$4,400$$

less consideration paid on assignment 2,000

Amount to be included \$2,400



If the deceased has continued to pay the premiums after assignment, then the annual premiums so paid would be treated as gifts within three years of death and included in the notional estate - see (a) above.

- (f) The value of any pensions payable to a survivor on the death of the deceased.

### 7.2.3 Exemptions

1. Non-dutiable gifts made absolutely.
2. The first \$2,000 p.a. of any pension or annuity payable to the surviving spouse of the deceased from a group superannuation scheme.
3. The total of any such annuity payable to a child of the deceased until the child attains the age of twenty years.
4. Accrued War Pensions and Social Security benefits.
5. Personal chattels.

The following exemptions apply to estates of all persons dying on or after 1 June 1978.

- (a) The total value of personal chattels which pass to the surviving spouse.
- (b) Up to \$6,000 for personal chattels which pass to other beneficiaries.

(Between 30 May 1974 and 1 June 1978, the maximum exemption for all personal chattels was \$4,000.)

6. The deceased's share of a residence registered as a joint family home. (Applies to the estate of the first spouse to die.)

### 7.2.4 Allowable Debts

Debts which are owing by the deceased at the time of his death may be deducted from his estate. It does not matter whether the debt was incurred in New Zealand, or overseas.

Reasonable funeral expenses and income tax on income to

date of death are regarded as allowable debts. However, no allowance should be made for any expenses of administering the estate or remuneration of the executor(s).

The amount of any debt owing under any mortgage, charge, or other encumbrance over the joint family home is not an allowable debt.

#### 7.2.5 Matrimonial Home Allowance

In the case of a matrimonial home, the allowance is in respect of the value of the family residence (i.e. the matrimonial home), or other property if the home does not pass to the surviving spouse. The allowance is restricted to one home only, and does not apply to a joint family home.

Value of the Allowance:

- (a) Where the matrimonial home passes to the surviving spouse, the value of the home is the matrimonial home allowance.
- (b) Where property other than the matrimonial home passes to the surviving spouse, the allowance is the lessor of:
  - (i) the value of the matrimonial home; or
  - (ii) the value of the other property passing.

NOTE: Debts secured over the matrimonial home or equivalent property reduce the value of the allowance.

#### 7.2.6 Charitable Allowance

The charitable allowance applies only to estates of persons dying on or after 21 June 1979. Estates of persons who died before that date qualified for the charitable succession relief rather than the charitable allowance.

The level of exemption, however, is the same whichever method of calculation is followed.

Value of the Allowance:

The charitable allowance is the lesser of:

- (i) The value of the charitable succession(s), or
- (ii) \$25,000.

#### 7.2.7 Valuation of Estate

All property included in the dutiable estate will be valued as at the date of death, except that gifts will be valued as at the date of gift. In general, the same principals apply to valuations for both estate duty and gift duty purposes. (Refer to section 7.3.2 - Valuation of Gift).

The value of land and buildings is determined by a special Government valuation, and specifically excludes the timber value of any growing trees. All other property should be valued by persons competent to value the assets concerned. However, it is not necessary to value personal chattels where they have all been exempted from duty. (Refer section 7.2.3.)

Special provisions apply regarding the valuation of annuities, pensions etc. for estate duty purposes, and care should be exercised in assessing such values. Calculation is necessary to establish the value of pensions etc. and reference must be made to the tables contained in the Second Schedule to the Estate and Gift Duty Act. There are four tables in all, and these refer to life expectancies for males and females, expectancy of widowhood for females of various ages, and financial factors for specific time periods. These are reproduced as Tables A,B,C, and D, respectively, in Appendix II (section 7.4). Reference should be made to the Valuation of Succession (section 7.2.8) and to the Example of Estate Duty Assessment (section 7.2.12).

#### 7.2.8 Valuation of Successions

The whole of the estate is divided into various successions (i.e. inheritances) as at the date of death, and each succession, whether it be property, an annuity, or some other future interest, must be valued. The general rules of valuation are outlined in section 7.2.7 (above). In calculating the value of each succession no deduction should be made for administration expenses, the administrators' commission or remuneration, the estate duty payable, or any mortgage or encumbrance where the bene-

ficiary has a right to be reimbursed in respect of such charge. Also, it should be noted that where a matrimonial home allowance has been made, the succession of the surviving spouse is reduced by the amount of that allowance.

#### Valuation of Annuities, Life Interests, etc.

Where an annuity or some other form of future interest is involved, the value of each inheritance is calculated using the tables in Appendix II and the total estate then apportioned between the beneficiaries. Thus if a widow is to receive an annuity for the rest of her life, the value of that annuity is calculated (based on her life expectancy), and this value is the widow's succession; the balance goes to the remainderman. The combined total of the two equals the value of the estate.

An annuity is a fixed sum of money payable each year for a number of years or for life. An annuity may commence as at date of death, or some time thereafter, such as after a certain number of years or upon the happening of some specific event.

#### Example:

Son aged 45 is left an annuity of \$2,000 for life.  
Value of his succession would be:  
Present value of \$1 per annum for life of a male aged 45 (from Table A) is \$14.92971.  
Present value of \$2,000 pa =  $\$2,000 \times 14.92971$   
= \$29,859

A life interest is the right to receive the income for life from a certain fund, or specified assets, or to have the use of an asset for life. The successor entitled to this is the life tenant.

#### Example:

A dies on 18 November 1973 leaving a final balance of \$100,000. Under his will his widow (age 63) receives income for life and on her death estate assets pass to surviving children.

## Successions

Widows:	Present value of income on capital of \$1 for life of a female age 63 (from Table B) is \$0.54800.	
	Present value of income on \$100,000 is	\$54,800
Remainderman:	Present value of interest	<u>\$45,200</u>
		<u>\$100,000</u>

Interests may terminate otherwise than on death.  
Common examples would include:

- (1) Income from residue of estate during her widowhood. Table C should be used.
- (2) Income from estate's farming activities to widow until the youngest child attains the age of 21. Table D should be used.
- (3) Annuity of \$1,040 to son until he attains age of 25. Table D should be used.

### 7.2.9 Calculation of Estate Duty

Estate duty is assessed on the final balance of the estate at the rate set out in Appendix I (section 7.4). The allowance reliefs are then deducted in order to obtain the actual estate duty payable.

### 7.2.10 Reliefs

Reliefs are deducted from the estate duty assessed, where applicable. Available reliefs include the following:

1. Relief from Successive Estate Duties  
(i.e. Quick Succession)

If the estate of a deceased person includes property which was inherited within 5 years of death, relief from duty may be given in the second estate in order to reduce the effect of a double impact of estate duty.

The reduction is applied to the lesser of the duty payable on the particular property in the first and second estates. The reduction is graduated according to the period which has passed between the two dates

of death, as shown in the following table.

Period between Death of Successor and Predecessor	Duty Reduced by
0 - 4 months	75%
4 - 8 months	60%
8 - 12 months	50%
1 - 2 years	40%
2 - 3 years	30%
3 - 4 years	20%
4 - 5 years	10%

## 2. Relief for Gift Duty Paid

Where gifts have been included in the notional estate, the gift duty paid plus interest at 3% p.a. from the date the gift duty was paid to the date of death, will be refunded to the person who paid it. If the donor (i.e. the deceased) paid the gift duty, the amount of gift duty refunded (excluding any interest) is included in his dutiable estate. The total refund under these circumstances is first applied towards the payment of any estate duty and then any excess is refunded to the administrator of the deceased donor's estate.

### 7.2.11 Assessment and Collection

The administrator must file an Administrators' Statement together with various supporting forms within six months after the grant of administration. The forms prescribed for filing are available from the Inland Revenue Department.

An assessment is issued immediately after the accounts are filed, but this assessment may be amended as a result of the Department's examination or from further information received. After any queries have been satisfied, the Department then certifies the final balance and that duty is, or is not, payable.

Once this notice of assessment has been issued, any estate duty payable should be paid within three months after which a penalty of 5% of the unpaid duty is imposed.

Interest at 5% p.a. is charged on the amount of duty unpaid after six months from the date of death. Interest at 5% p.a. is also charged on any unpaid penalty on estate duty calculated from the date the penalty became payable.

### 7.2.12 Example of Estate Duty Assessment

Mr Green died on 30 October 1981 and his estate included the following property (at market value):

Matrimonial home	\$ 65,000
Investments	54,000
Personal chattels	7,000
Cash at P.O.S.B.	3,250
Interest accrued at P.O.S.B.	50
Car and boat	20,000
Mortgage over son's farm	120,000
Interest accrued on mortgage	2,000
Holiday home	30,000

His liabilities were:

Mortgage over matrimonial home	15,000
Accounts payable	1,300
Income tax assessed to date of death	1,400
Funeral expenses	1,200

In May 1958, Green took out a policy of life assurance which has annual premiums of \$300. In June 1978 he sold a half interest in the policy to his wife for \$7,000 which was half the then surrender value. Green continued to pay the premium until his death. The gross proceeds of this policy at death were \$20,000. Green also had a second insurance policy which had a death cover of \$50,000.

Green had also contributed to a superannuation scheme which, on his death, would provide his widow with \$5,000 per annum for the remainder of her life.

In addition, Green had forgiven debts to his son as follows:

1 January 1976	\$10,000	1 January 1979	\$10,000
1 January 1977	\$10,000	1 January 1980	\$10,000
1 January 1978	\$10,000	1 January 1981	\$10,000

Gift duty of \$660, \$180, \$180, \$180, Nil and Nil respectively, had been paid by Green's son. (Refer to section 7.3.4, Calculation of Gift Duty.)

In his will, Green made the following bequests:

To son John, aged 25, debt forgiven	\$25,000
To daughter Sue, aged 19, cash	\$50,000
To St John Ambulance Association	\$ 5,000

To wife Alice, aged 65 - the residue of the estate.

The final balance on which duty would be assessed is calculated as follows:

<u>Estate Assets:</u>	\$	\$
Matrimonial home	65,000	
Investments	54,000	
Personal chattels	7,000 (1)	
P.O.S.B. - cash plus accrued interest	3,300	
Car and boat	20,000	
Mortgage and accrued interest	122,000	
Proceeds of insurance policy - no. 1	10,000 (2)	
- no. 2	50,000	
		331,300
<u>plus Notional Estate:</u>		
Dutiable gifts to son	30,000 (3)	
Interest in life policy disposed of	1,696 (4)	
Superannuation payable to widow	30,908 (5)	
		62,604
		393,904
<u>less Exempt Assets:</u>		
Personal chattels to widow	(1)	7,000
		386,904
<u>less Allowable Debts:</u>		
Mortgage over home	15,000	
Accounts payable	1,300	
Income tax	1,400	
Funeral expenses	1,200	
	18,900	
<u>Matrimonial Home Allowance</u>		
Matrimonial Home	65,000	
less Mortgage	15,000	
	50,000	
<u>Charitable Allowance</u>		
Value of bequest	5,000	
		73,900
FINAL BALANCE		\$313,004
		=====



Value of Successions:

Final balance of estate	\$313,004
Matrimonial Home Allowance	50,000
Charitable Allowance	<u>5,000</u>

Net Value of the Estate \$368,004

Successions:

Son (John)

Gifts	30,000 (3)	
Bequest	<u>25,000</u>	55,000

Daughter (Sue)

Bequest	50,000
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St John Ambulance Association	5,000
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Widow (Mrs Alice Green)	<u>258,004</u>
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Net Value of the Estate \$368,004

ESTATE DUTY CALCULATION:

Estate duty on final balance	\$ 25,201.60
less <u>Reliefs:</u>	

Credit for gift duty paid: (6)

(i) Duty on gift dated

1.1.79	180.00
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plus interest @ 3%  
on \$180 for 2 years

302 days	<u>15.27</u>
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195.27

<u>NET ESTATE DUTY PAYABLE</u>	<u>\$ 25,006.33</u>
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NOTES:

1. The value of personal chattels passing to the widow is totally exempt from estate duty. Thus the \$7,000 could be omitted from the calculation.
2. Green had sold a half interest in the insurance policy to his wife in 1978, so only half the proceeds belong to the estate.

3. Only dutiable gifts made within 3 years of death are included.
4. Green's interest in the life policy is calculated as:

$$\frac{20}{23} \times \frac{300}{300} \times 50\% \text{ of } \$20,000 = \$8,696$$

less consideration received            7,000

Amount included as notional estate    \$1,696

5. The value is calculated as:

Superannuation to widow            \$5,000 p.a.  
less exemption                        2,000 p.a.

Dutiable                                \$3,000 p.a.

Life expectancy for a female aged 65 is 14.84 years, and the present value of \$1 p.a. for her life is \$10.3027 (from Table B). The value of the superannuation is therefore calculated as \$3,000 x 10.3027 = \$30,908.

6. The gift duty paid is not included in the notional estate as it was paid by the son. The estate, however, does receive a credit for the gift duty paid to be offset against the estate duty payable. Similarly the interest due by the Crown on the gift duty paid, although strictly payable to the son, will be offset against the estate duty payable. The estate should account to the son, John, for these accounts.

## 7.3 GIFT DUTY

### 7.3.1 Definitions

A gift is any disposition of property made otherwise than by will, without fully adequate consideration in money or money's worth passing to the donor (the person making the gift).

"Disposition of property" is used in its widest sense to cover any alienation of property, such as any conveyance, transfer, settlement or assignment, including transactions which diminish the value of one estate to the betterment of another. It includes all gifts of property in New Zealand and all gifts of foreign property if the owner is domiciled in New Zealand.

"Consideration" is what one party in a transaction gives to the other party. The most common form is money, but it could be a promise to do or not to do something, or another form of property. Whatever form is involved, its value is calculated in monetary terms.

### 7.3.2 Valuation of Gift

The value of a gift is the monetary value of the property gifted less any consideration paid. The value of land and buildings is determined by agreement between the donor and the Commissioner of Inland Revenue, or by the Valuer-General. All other property is at market value as assessed by a competent valuer.

#### 7.3.2 (i) Date of Valuation

A gift (and any consideration) is valued as at the date the gift is made, which is taken to mean the date at which the donor has put himself in the position where the gift cannot be revoked (i.e. the gift is complete).

The completion dates of some of the more common forms of gift are illustrated in the following chart:

Description of Gift	When Complete
Cash	On delivery to the beneficiary.
Cheques	When the cheque has been cashed. (Until then it can be revoked.)
Land	Except where a valid trust is created, the earlier of the dates on which - (a) the instrument of transfer is registered in the Land Transfer Office; or (b) the beneficiary has possession of all the necessary documents to enable the registration to be effected.
Shares	As for land, except that the instrument of transfer is registered by the company.
Chattels	Where there has been effective delivery of the chattels or there has been a deed of assignment.

Release and  
forgiveness of debt

Normally the execution of a  
legally effective deed of  
release or forgiveness will  
be required.

### 7.3.3 Exemptions from Gift Duty

A dutiable gift is any gift which is or may be liable to gift duty. However, certain gifts are specifically excluded from gift duty, and include:

1. Small gifts, not exceeding an aggregate of \$1,000 (\$400 prior to 1 January 1979) to the same beneficiary in the same calendar year, are not taken into account if they are made in good faith as part of the normal expenditure of the donor.
2. Gifts made towards the maintenance or education of a relative provided the gift is not excessive having regard to the obligation of the donor.
3. Gifts made to charitable bodies.
4. Special exemptions including:
  - \* certain superannuation elections.
  - \* contributions by an employer to superannuation fund.
  - \* certain gratuitous payments to employer to employee.
  - \* settlement of a joint family home.

### 7.3.4 Calculation of Gift Duty

Gift duty does not become payable until the value of any dutiable gifts over any twelve month period exceeds \$15,000 in total value. (Prior to 30 July 1976, gift duty did not become payable until the aggregated value exceeded \$4,000. Between 30 July 1976 and 21 June 1979 (inclusive), this amount was increased to \$8,000). Rates of Gift Duty are detailed in Appendix III (section 7.4).

If more than one dutiable gift is made within a twelve month period, the duty is apportioned to each dutiable gift involved in accordance with the following formula:

$$\frac{a}{b} \times c$$

where - (a) is the value of the dutiable gift.

(b) is the total value of this gift and all other dutiable gifts made within twelve months.

(c) is the amount of gift duty payable on item (b).

It should be noted that the 12 month period is chosen so as to maximise the amount of gift duty payable.

### 7.3.5 Aggregation of Gifts

It is important to note that although gift duty is charged on each individual dutiable gift, the rate of gift duty charged on any such individual gift depends upon the aggregation of the value of all dutiable gifts made at the same time or within twelve months subsequently or previously by the same donor (not being a gift exempted from duty, e.g. to a charity). The day the gift is made is included in the twelve month period, so that gifts completed on the same day each year cannot be aggregated. Furthermore, all dutiable gifts are aggregated, irrespective of the identity of the recipient (donee).

#### Example 1:

Gift to A of \$12,000 made on 1 August 1980.

Gift to B of \$13,000 made on 31 July 1981.

These gifts would be aggregated and be liable to gift duty of \$750, even though each gift is below the exemption level of \$15,000. Note that if the gift to B was made on 1 August 1981, no aggregation would occur as the gifts are not within a twelve month period.

#### Example 2:

Gift to C of \$18,000 made on 1 August 1980 - duty of \$150 paid.

Gift to D of \$15,000 made on 1 January 1981.

These gifts would be aggregated and duty of \$1,850 on the sum of \$33,000 would be payable, less the \$150 already paid.

Special transitional provisions apply where the twelve month period includes gifts made before 22 June 1979. Where the aggregated figure does not exceed \$15,000, the

duty on these aggregated gifts will not change. Where the aggregated figure exceeds \$15,000, the duty on the gift made prior to 22 June 1979 will be assessed at the rates applying at the time of the gift, i.e. at the old rates.

Example:

Dutiable gift made before 22 June 1979 aggregates with a gift made after that date, together totalling more than \$15,000.

Gift of \$10,000 made on 6 June 1979 - duty of \$180 paid.

Gift of \$18,000 made on 24 December 1979.

Total gifts during 12 month  
period \$28,000  
Duty on \$28,000 at old  
rate is \$ 2,700  
Therefore duty on \$10,000  
is

$$\frac{\$10,000}{\$28,000} \times \$2,700 = \$ 964.28$$

Duty on \$28,000 at new rates  
is \$ 1,050  
Therefore duty on \$18,000  
is

$$\frac{\$18,000}{\$28,000} \times \$1,050 = \$ 675.00$$

less duty paid \$ 180.00

Duty Payable \$1,459.29

### 7.3.6 Assessment and Collection

If the value of a gift exceeds \$8,000 or if the aggregated value of this gift and all other gifts made over the previous twelve months exceeds \$8,000, a Gift Statement (form IR 635) must be delivered to the Commissioner by the donor within three months of making the gift.

If the donor fails to deliver the Gift Statement within the specified time, the donee has an extra month to do so.

If gift duty remains unpaid within six months of making a dutiable gift, a penalty of 5% will be added to the unpaid duty.

Interest at 5% p.a. on the duty payable, and subsequently on any penalty levied, will be added to any duty unpaid within three months of making a dutiable gift.

The donor is primarily liable to pay gift duty, but the Inland Revenue can obtain payment from the donee. Unless the terms of the gift provide otherwise, the donee is entitled to recover such duty paid from the donor.

### 7.3.7 Example of Gift Duty Assessment:

Gift made to D on 14 August 1979 of \$12,000

Gift made to E on 18 November 1979 of \$12,000

Gift made to F on 31 October 1980 of \$25,000

Duty assessment is as follows:

Gifts to D and E aggregated - \$24,000

Gift to E and F aggregated - \$37,000

Duty on gift to D is calculated as:

$$\frac{12,000}{24,000} \times 650 = \$325.00$$

Duty on gift to E yields more revenue when aggregated with gift to F, being charged with duty at a higher rate than if aggregated with gift to D.

Therefore, duty on gift to E is

$$\frac{12,000}{37,000} \times 2,650 = \$ 859.46$$

Duty on gift to F is

$$\frac{25,000}{37,000} \times 2,650 = \underline{\$1,790.54}$$

Total gift duty for gifts  
to D, E, and F: \$2,975.00

This calculation has been performed with hindsight, after all gifts are known. However, it must be realised that Gift Statements would be filed for each gift (as they exceed \$8,000), and that gift duty would be assessed on those statements. On a progressive basis, therefore, the duty assessment is as follows:

14 August 1979

Total gifts \$12,000  
Gift Duty payable Nil

18 November 1979

Total gifts for previous  
12 months \$24,000  
Gift Duty payable  
apportioned: \$ 650.00

Gift to D:

$\frac{12,000}{24,000} \times 650.00 = \$ 325.00$

Gift to E:

$\frac{12,000}{24,000} \times 650.00 = \$ 325.00$

31 October 1980

Total gifts for previous  
12 months were \$37,000  
Gift duty payable  
apportioned: \$ 2,650

Gift to E:

$\frac{12,000}{37,000} \times 2,650 = \$ 859.46$

less duty already  
paid = \$ 325.00 \$ 534.46

Gift to F:

$\frac{25,000}{37,000} \times 2,650.00 = \$1,790.54$

Total gift duty for gifts to D, E and F: \$2,975.00

As can be seen, the total gift duty is unaltered.



## 7.4 APPENDICES

### Appendix I.

#### Rates of Estate Duty

##### PART A

###### PERSONS DYING BETWEEN 1 APRIL 1980 AND 31 MARCH 1981 (inclusive)

Final Balance	Amount and Rate of Duty
Up to - \$150,000	Nil
\$150,000 - \$250,000	\$0 plus 35% of excess over \$150,000
Over \$250,000	\$35,000 plus 40% of excess over \$250,000

##### PART B

###### PERSONS DYING BETWEEN 1 APRIL 1981 AND 31 MARCH 1982 (inclusive)

Final Balance	Rate of Duty
Up to \$250,000	Nil
Over \$250,000	40% of excess over \$250,000

##### PART C

###### PERSONS DYING ON OR AFTER 1 APRIL 1982

Final Balance	Rate of Duty
Up to \$300,000	Nil
Over \$300,000	40% of excess over \$300,000

APPENDIX II

TABLES FOR VALUATION OF PENSIONS ETC.

Table A

Present Value of Annuity or Other Interest for Life  
of MALE or Expectant on Death of MALE

Years of Age	Expectation of Life of Male	Present Value of \$1 per Annum	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
0	68.29	19.28531	0.03573	0.96427
1	69.03	19.31080	0.03446	0.96554
2	68.17	19.28117	0.03594	0.96406
3	67.27	19.24885	0.03756	0.96244
4	66.33	19.21357	0.03932	0.96068
5	65.39	19.17665	0.04117	0.95883
6	64.44	19.13758	0.04312	0.95688
7	63.48	19.09622	0.04519	0.95481
8	62.53	19.05334	0.04733	0.95267
9	61.56	19.00747	0.04963	0.95037
10	60.60	18.95988	0.05201	0.94799
11	59.63	18.90948	0.05453	0.94547
12	58.66	18.85664	0.05717	0.94283
13	57.69	18.80124	0.05994	0.94006
14	56.74	18.74441	0.06278	0.93722
15	55.79	18.68488	0.06576	0.93424
16	54.86	18.62391	0.06880	0.93120
17	53.92	18.55941	0.07203	0.92797
18	53.00	18.49340	0.07533	0.92467
19	52.07	18.42335	0.07883	0.92117
20	51.15	18.35084	0.08246	0.91754
21	50.23	18.27503	0.08625	0.91375
22	49.32	18.19663	0.09017	0.90983
23	48.40	18.11378	0.09431	0.90569
24	47.48	18.02716	0.09864	0.90136
25	46.56	17.93660	0.10317	0.89683
26	45.63	17.84085	0.10796	0.89204
27	44.70	17.74068	0.11297	0.88703
28	43.76	17.63473	0.11826	0.88174
29	42.83	17.52505	0.12375	0.87625
30	41.89	17.40904	0.12955	0.87045

Table A - continued

Present Value of Annuity or Other Interest for Life  
of MALE or Expectant on Death of MALE - continued

Years of Age	Expectation of Life of Male	Present Value of \$1 per Annum	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
31	40.96	17.28896	0.13555	0.86445
32	40.03	17.16314	0.14184	0.85816
33	39.10	17.03125	0.14844	0.85156
34	38.17	16.89325	0.15534	0.84466
35	37.24	16.74887	0.16256	0.83744
36	36.32	16.59947	0.17003	0.82997
37	35.40	16.44326	0.17784	0.82216
38	34.48	16.27992	0.18600	0.81400
39	33.57	16.11105	0.19445	0.80555
40	32.65	15.93259	0.20337	0.79663
41	31.74	15.74811	0.21259	0.78741
42	30.83	15.55535	0.22223	0.77777
43	29.92	15.35394	0.23230	0.76770
44	29.02	15.14570	0.24271	0.75729
45	28.13	14.92971	0.25351	0.74649
46	27.25	14.70681	0.26466	0.73534
47	26.38	14.47697	0.27615	0.72385
48	25.52	14.24019	0.28799	0.71201
49	24.67	13.99650	0.30018	0.69982
50	23.83	13.74593	0.31270	0.68730
51	23.00	13.48857	0.32557	0.67443
52	22.18	13.22161	0.33892	0.66108
53	21.38	12.95106	0.35245	0.64755
54	20.59	12.67399	0.36630	0.63370
55	19.82	12.39437	0.38028	0.61972
56	19.06	12.10793	0.39460	0.60540
57	18.32	11.81622	0.40919	0.59081
58	17.60	11.52338	0.42383	0.57617
59	16.89	11.22607	0.43870	0.56130
60	16.19	10.92067	0.45397	0.54603
61	15.50	10.60871	0.46959	0.53044
62	14.82	10.29307	0.48535	0.51465
63	14.16	9.97560	0.50122	0.49878
64	13.52	9.65621	0.51719	0.48281
65	12.90	9.34054	0.53297	0.46703
66	12.29	9.01705	0.54915	0.45085

Table A - continued

Present Value of Annuity or Other Interest for Life  
of MALE or Expectant on Death of MALE - continued

Years of Age	Expectation of Life of Male	Present Value of \$1 per Annum	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
67	11.71	8.70177	0.56491	0.43509
68	11.14	8.38437	0.58078	0.41922
69	10.59	8.06670	0.59666	0.40334
70	10.05	7.75097	0.61245	0.38755
71	9.53	7.43320	0.62834	0.37166
72	9.01	7.11396	0.64430	0.35570
73	8.51	6.79196	0.66040	0.33960
74	8.03	6.48255	0.67587	0.32413
75	7.57	6.17217	0.69139	0.30861
76	7.13	5.87436	0.70628	0.29372
77	6.71	5.58028	0.72099	0.27901
78	6.31	5.29600	0.73520	0.26480
79	5.92	5.01599	0.74920	0.25080
80	5.55	4.73990	0.76300	0.23700
81	5.19	4.47126	0.77644	0.22356
82	4.84	4.20411	0.78979	0.21021
83	4.51	3.94555	0.80272	0.19728
84	4.19	3.69482	0.81526	0.18474
85	3.89	3.45545	0.82723	0.17277
86	3.60	3.21687	0.83916	0.16084
87	3.33	2.99474	0.85026	0.14974
88	3.07	2.78084	0.86096	0.13904
89	2.83	2.57640	0.87118	0.12882
90	2.60	2.37771	0.88111	0.11889
91	2.39	2.19631	0.89018	0.10982
92	2.19	2.02354	0.89882	0.10118
93	2.01	1.86805	0.90660	0.09340
94	1.84	1.71429	0.91429	0.08571
95	1.68	1.56916	0.92154	0.07846
96	1.53	1.43311	0.92834	0.07166
97	1.39	1.30612	0.93469	0.06531
98	1.27	1.19728	0.94014	0.05986
99	1.15	1.08844	0.94558	0.05442
100	1.05	0.99773	0.95011	0.04989

Table B

Present Value of Annuity or Other Interest for Life  
of FEMALE or Expectant on Death of FEMALE

Years of Age	Expectation of Life of Female	Present Value of \$1 per Annum	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
0	72.43	19.41600	0.02920	0.97080
1	72.90	19.42934	0.02853	0.97147
2	72.05	19.40521	0.02974	0.97026
3	71.12	19.37756	0.03112	0.96888
4	70.18	19.34831	0.03258	0.96742
5	69.23	19.31737	0.03413	0.96587
6	68.26	19.28427	0.03579	0.96421
7	67.30	19.24994	0.03750	0.96250
8	66.33	19.21357	0.03932	0.96068
9	65.35	19.17505	0.04125	0.95875
10	64.37	19.13464	0.04327	0.95673
11	63.39	19.09226	0.04539	0.95461
12	62.41	19.04779	0.04761	0.95289
13	61.42	19.00067	0.04997	0.95003
14	60.44	18.95172	0.05241	0.94759
15	59.47	18.90092	0.05495	0.94505
16	58.50	18.84765	0.05762	0.94238
17	57.53	18.79180	0.06041	0.93959
18	56.56	18.73325	0.06334	0.93666
19	55.60	18.67252	0.06637	0.93363
20	54.64	18.60887	0.06956	0.93044
21	53.67	18.54147	0.07293	0.92707
22	52.71	18.47156	0.07642	0.92358
23	51.75	18.39830	0.08008	0.91992
24	50.79	18.32154	0.08392	0.91608
25	49.83	18.24110	0.08795	0.91205
26	48.87	18.15682	0.09216	0.90784
27	47.92	18.06947	0.09653	0.90347
28	46.96	17.97698	0.10115	0.89885
29	46.01	17.88108	0.10595	0.89405
30	45.06	17.78043	0.11098	0.88902
31	44.11	17.67502	0.11625	0.88375
32	43.16	17.56461	0.12177	0.87823
33	42.21	17.44898	0.12755	0.87245
34	41.26	17.32787	0.13361	0.86639
35	40.32	17.20238	0.13988	0.86012

Table B - continued

Present Value of Annuity or Other Interest for Life  
of FEMALE or Expectant on Death of FEMALE - continued

Years of Age	Expectation of Life of Female	Present Value of \$1 per Annum	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
36	39.38	17.07102	0.14645	0.85355
37	38.44	16.93352	0.15332	0.84668
38	37.50	16.78959	0.16052	0.83948
39	36.57	16.64058	0.16797	0.83203
40	35.64	16.48470	0.17576	0.82424
41	34.71	16.32162	0.18392	0.81608
42	33.79	16.15293	0.19235	0.80765
43	32.88	15.97856	0.20107	0.79893
44	31.97	15.79638	0.21018	0.78982
45	31.06	15.60540	0.21973	0.78072
46	30.17	15.40991	0.22950	0.77050
47	29.29	15.20817	0.23959	0.76041
48	28.41	14.99774	0.25011	0.74989
49	27.54	14.78078	0.26096	0.73904
50	26.68	14.55732	0.27213	0.72787
51	25.82	14.32456	0.28377	0.71623
52	24.98	14.08804	0.29560	0.70440
53	24.14	13.83998	0.30800	0.69200
54	23.31	13.58470	0.32077	0.67923
55	22.49	13.32253	0.33387	0.66613
56	21.67	13.05019	0.34749	0.65251
57	20.87	12.77449	0.36128	0.63872
58	20.08	12.49093	0.37545	0.62455
59	19.30	12.19839	0.39008	0.60992
60	18.53	11.89933	0.40503	0.59497
61	17.77	11.59402	0.42030	0.57970
62	17.02	11.28238	0.43588	0.56412
63	16.28	10.95993	0.45200	0.54800
64	15.56	10.63620	0.46819	0.53181
65	14.84	10.30270	0.48487	0.51513
66	14.14	9.96598	0.50170	0.49830
67	13.45	9.62085	0.51896	0.48104
68	12.77	9.27160	0.53642	0.46358
69	12.11	8.92159	0.55392	0.44608
70	11.46	8.56256	0.57187	0.42813

Table B - continued

Present Value of Annuity or Other Interest for Life  
of FEMALE or Expectant on Death of FEMALE - continued

Years of Age	Expectation of Life of Female	Present Value of \$1 per Annum	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
71	10.83	8.20702	0.58965	0.41035
72	10.22	7.85036	0.60748	0.39252
73	9.63	7.49459	0.62527	0.37473
74	9.07	7.15080	0.64246	0.35754
75	8.53	6.80486	0.65976	0.34024
76	8.01	6.46966	0.67652	0.32348
77	7.52	6.13833	0.69308	0.30692
78	7.05	5.82022	0.70899	0.29101
79	6.59	5.49499	0.72525	0.27475
80	6.16	5.18940	0.74053	0.25947
81	5.74	4.88168	0.75592	0.24408
82	5.34	4.58319	0.77084	0.22916
83	4.96	4.29814	0.78509	0.21491
84	4.59	4.00823	0.79959	0.20041
85	4.24	3.73400	0.81330	0.18670
86	3.91	3.47191	0.82640	0.17360
87	3.60	3.21687	0.83916	0.16084
88	3.31	2.97829	0.85109	0.14891
89	3.04	2.75616	0.86219	0.13781
90	2.78	2.53320	0.87334	0.12666
91	2.54	2.32588	0.88371	0.11629
92	2.32	2.13584	0.89321	0.10679
93	2.12	1.96307	0.90185	0.09815
94	1.93	1.79592	0.91020	0.08980
95	1.75	1.63265	0.91837	0.08163
96	1.59	1.48753	0.92562	0.07438
97	1.45	1.36054	0.93197	0.06803
98	1.31	1.23356	0.93832	0.06168
99	1.19	1.12472	0.94376	0.05624
100	1.07	1.01587	0.94921	0.05079

Table C

Present Value of Annuity or Other Interest for Widowhood  
or Expectant on Termination of Widowhood

Years of Age	Expectation of Widowhood	Present Value of \$1 per Annum For Widowhood	Present Value of \$1 Payable on Termin- ation of Widowhood	Present Value of Income on Capital of \$1 for Widowhood
	Years	\$	\$	\$
Up to 20	7.5	6.12479	0.69376	0.30624
21	8.2	6.59213	0.67039	0.32961
22	8.9	7.04336	0.64783	0.35217
23	9.8	7.59895	0.62005	0.37995
24	10.7	8.13101	0.59344	0.40656
25	11.5	8.58483	0.57076	0.42924
26	12.2	8.96931	0.55153	0.44847
27	12.8	9.28751	0.53562	0.46438
28	13.3	9.54509	0.52275	0.47725
29	13.7	9.74712	0.51264	0.48736
30	14.1	9.94674	0.50266	0.49734
31	14.4	10.09104	0.49545	0.50455
32	14.9	10.33156	0.48342	0.51658
33	15.3	10.51709	0.47415	0.52585
34	15.8	10.74614	0.46269	0.53731
35	16.3	10.96866	0.45157	0.54843
36	16.9	11.23044	0.43848	0.56152
37	17.6	11.52338	0.42383	0.57617
38	18.2	11.76874	0.41156	0.58844
39	18.8	12.00617	0.39969	0.60031
40	19.5	12.27376	0.38631	0.61369
41	20.3	12.56989	0.37151	0.62849
42	20.9	12.78526	0.36074	0.63926
43	21.4	12.95789	0.35211	0.64789
44	21.8	13.09463	0.34527	0.65473
45	22.0	13.16300	0.34185	0.65815
46	22.1	13.19556	0.34022	0.65978
47	22.2	13.22811	0.33859	0.66141
48	22.2	13.22811	0.33859	0.66141
49	22.1	13.19556	0.34022	0.65978
50	22.0	13.16300	0.34185	0.65815
51	21.8	13.09463	0.34527	0.65473
52	21.6	13.02626	0.34869	0.65131
53	21.3	12.92370	0.35381	0.64619
54	20.9	12.78526	0.36074	0.63926
55	20.5	12.64168	0.36792	0.63208
56	20.0	12.46221	0.37689	0.62311
57	19.6	12.31145	0.38443	0.61557



Table C - continued

Present Value of Annuity or Other Interest for Widowhood  
or Expectant on Termination of Widowhood - continued

Years of Age	Expectation of Widowhood	Present Value of \$1 per Annum For Widowhood	Present Value of \$1 Payable on Termin- ation of Widowhood	Present Value of Income on Capital of \$1 for Widowhood
	Years	\$	\$	\$
Up to 58	19.1	12.12301	0.39385	0.60615
59	18.5	11.88745	0.40563	0.59437
60	18.0	11.68959	0.41552	0.58448
61	17.4	11.44028	0.42799	0.57201
62	16.8	11.18681	0.44066	0.55934
63	16.1	10.88140	0.45593	0.54407
64	15.4	10.56290	0.47186	0.52814
65	14.6	10.18725	0.49064	0.50936

For widows 66 years of age or over, the expectations of life and widowhood are deemed to be identical, and Table B applies for both purposes.

Table D

Present Value of Annuity or Other Interest for Period  
Other Than Life or Expectant on Event Other Than Death

Years	Present Value of \$1 per Annum for Period	Present Value of \$1 Payable After Period	Present Value of Income on Capital of \$1 for Period
	\$	\$	\$
1	0.95238	0.95238	0.04762
2	1.85941	0.90703	0.09297
3	2.72325	0.86384	0.13616
4	3.54595	0.82270	0.17730
5	4.32948	0.78353	0.21647
6	5.07569	0.74622	0.25378
7	5.78637	0.71068	0.28932
8	6.46321	0.67684	0.32316
9	7.10782	0.64461	0.35539
10	7.72173	0.61391	0.38609
11	8.30641	0.58468	0.41532
12	8.86325	0.55684	0.44316
13	9.39357	0.53032	0.46968
14	9.89964	0.50507	0.49493
15	10.37966	0.48102	0.51898
16	10.83777	0.45811	0.54189
17	11.27407	0.43630	0.56370
18	11.68959	0.41552	0.58448
19	12.08532	0.39573	0.60427
20	12.46221	0.37689	0.62311
21	12.82115	0.35894	0.64106
22	13.16300	0.34185	0.65815
23	13.48857	0.32557	0.67443
24	13.79864	0.31007	0.68993
25	14.09394	0.29530	0.70470
26	14.37518	0.28124	0.71876
27	14.64303	0.26785	0.73215
28	14.89813	0.25509	0.74491
29	15.14107	0.24295	0.75705
30	15.37245	0.23138	0.76862
31	15.59281	0.22036	0.77964
32	15.80268	0.20987	0.79013

Table D - continued

Present Value of Annuity or Other Interest for Period Other  
Than Life or Expectant on Event Other Than Death - continued

Years	Present Value of \$1 per Annum for Period	Present Value of \$1 Payable After Period	Present Value of Income on Capital of \$1 for Period
	\$	\$	\$
33	16.00255	0.19987	0.80013
34	16.19290	0.19035	0.80965
35	16.37419	0.18129	0.81871
36	16.54685	0.17266	0.82734
37	16.71129	0.16444	0.83556
38	16.86789	0.15661	0.84339
39	17.01704	0.14915	0.85085
40	17.15909	0.14205	0.85795
41	17.29437	0.13528	0.86472
42	17.42321	0.12884	0.87116
43	17.54591	0.12270	0.87730
44	17.66277	0.11686	0.88314
45	17.77407	0.11130	0.88870
46	17.88007	0.10600	0.89400
47	17.98101	0.10095	0.89905
48	18.07716	0.09614	0.90386
49	18.16872	0.09156	0.90844
50	18.25592	0.08720	0.91280
51	18.33898	0.08305	0.91695
52	18.41807	0.07910	0.92090
53	18.49340	0.07533	0.92467
54	18.56514	0.07174	0.92826
55	18.63347	0.06833	0.93167
56	18.69854	0.06507	0.93493
57	18.76052	0.06197	0.93803
58	18.81954	0.05902	0.94098
59	18.87575	0.05621	0.94379
60	18.92929	0.05354	0.94646
61	18.98027	0.05099	0.94901
62	19.02883	0.04856	0.95144
63	19.07508	0.04625	0.95375
64	19.11912	0.04404	0.95596
65	19.16107	0.04195	0.95805

Table D - continued

Present Value of Annuity or Other Interest for Period Other  
Than Life or Expectant on Event Other Than Death - continued

Years	Present Value of \$1 per Annum for Period	Present Value of \$1 Payable After Period	Present Value of Income on Capital of \$1 for Period
	\$	\$	\$
66	19.20102	0.03995	0.96005
67	19.23907	0.03805	0.96195
68	19.27530	0.03623	0.96377
69	19.30981	0.03451	0.96549
70	19.34268	0.03287	0.96713
71	19.37398	0.03130	0.96870
72	19.40379	0.02981	0.97019
73	19.43218	0.02839	0.97161
74	19.45922	0.02704	0.97296
75	19.48497	0.02575	0.97425
76	19.50949	0.02453	0.97547
77	19.53285	0.02336	0.97664
78	19.55510	0.02225	0.97775
79	19.57628	0.02119	0.97881
80	19.59646	0.02018	0.97982
81	19.61568	0.01922	0.98078
82	19.63398	0.01830	0.98170
83	19.65141	0.01743	0.98257
84	19.66801	0.01660	0.98340
85	19.68382	0.01581	0.98419
86	19.69887	0.01506	0.98494
87	19.71321	0.01434	0.98566
88	19.72687	0.01366	0.98634
89	19.73987	0.01301	0.98699
90	19.75226	0.01239	0.98761
91	19.76406	0.01180	0.98820
92	19.77529	0.01124	0.98876
93	19.78599	0.01070	0.98930
94	19.79618	0.01019	0.98981
95	19.80589	0.00971	0.99029
96	19.81513	0.00924	0.99076
97	19.82394	0.00880	0.99120
98	19.83232	0.00838	0.99162
99	19.84030	0.00798	0.99202
100	19.84791	0.00760	0.99240

# Appendix III

## RATES OF GIFT DUTY

### PART A

GIFTS MADE BETWEEN 30 JULY 1976  
AND 21 JUNE 1979 (inclusive)

Value of Dutiable Gifts Made Within 12 months	Amount and Rate of Duty			
\$ 1 - 8,000	Nil			
8,001 - 10,000	\$ 0 plus	9% of excess over	\$ 8,000	
10,001 - 12,000	180	" 10%	"	10,000
12,001 - 14,000	380	" 11%	"	12,000
14,001 - 16,000	600	" 12%	"	14,000
16,001 - 18,000	840	" 13%	"	16,000
18,001 - 20,000	1,100	" 14%	"	18,000
20,001 - 22,000	1,380	" 15%	"	20,000
22,001 - 24,000	1,680	" 16%	"	22,000
24,001 - 26,000	2,000	" 17%	"	24,000
26,001 - 28,000	2,340	" 18%	"	26,000
28,001 - 30,000	2,700	" 19%	"	28,000
30,001 - 32,000	3,080	" 20%	"	30,000
32,001 - 34,000	3,480	" 21%	"	32,000
34,001 - 36,000	3,900	" 22%	"	34,000
36,001 - 38,000	4,340	" 23%	"	36,000
38,001 - 40,000	4,800	" 24%	"	38,000
Over \$40,000	5,280	" 25%	"	40,000

### PART B

GIFTS MADE ON OR AFTER 22 JUNE 1979

Value of Dutiable Gifts Made Within 12 months	Amount and Rate of Duty			
\$ 1 - 15,000	Nil			
15,001 - 20,000	\$ 0 plus	5% of excess over	15,000	
20,001 - 30,000	250	" 10%	"	20,000
30,001 - 40,000	1,250	" 20%	"	30,000
Over \$40,000	3,250	" 25%	"	40,000

## SECTION 8

### INDEX



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