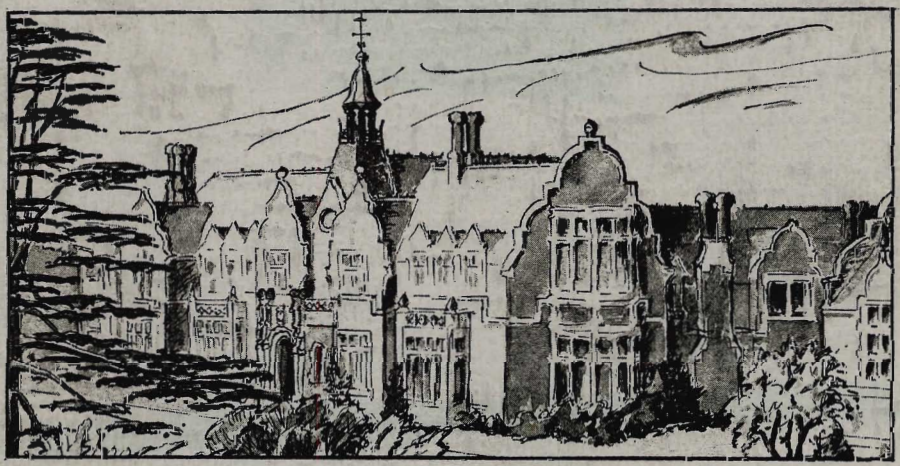
FARM BUDGET MANUAL
Volume Three



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FARM BUDGET MANUAL - 1968/69

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INTRODUCTION

SECTION 1.

GENERAL AND PHYSICAL DATA.

TOTAL CAPITAL INVOLVED

(a) Land and Buildings

Where a recent Government Valuation is available this is probably the best guide there is to the overall value of the property. If the Government Valuation is three or four years old then some adjustment of the figures may be necesssary. This should be done in the light of the movement in land values since its release and include any major improvements made on the farm since the last Valuation. The Unimproved Value is useful in assessing Land Tax where this is not known but the important figure is the Capital Value of the property as a whole.

For budget purposes this is split up between Land and Buildings. If varying grades of land are found on the property then the land value may be split up into several sections valued differently, the total of these summing to the overall Paddock Value. The Capital Value is usually also expressed as a figure per acre of the farm, and per stock Unit carried on the farm or per unit of production (e.g. per lb butterfat) for comparative purposes.

(b) Stock

The numbers to be used in assessing capital tied up in stock should include only the normal breeeding animals and replacements which will be carried. Thus fattening lambs or cull boner dairy cows still on hand when a property was visited in April would not be included in Capital Stock. The value used per head should be autumn clearing sale or Ewe Fair values interpreted on a reasonably conservative basis. As stock numbers are written down the overall carrying capacity in stock units can also be determined.

(c) Plant

Valuations of plant should also be made on the basis of local clearing sales interpreted conservatively. The up-to-date price list for new equipment is very useful in assisting with these assessments.

(d) Working Capital

This is a part of the necessary capital needed to run the property but is often forgotten by people when purchasing a property. On sheep farms and certain types of horticultural properties (e.g. tobacco) income is concentrated in one part of the year but expenses must be met throughout the year and money for this purpose must either be set aside or borrowed. On dairy properties income is fairly evenly spread and this difficulty is not met to the same extent.

There are two sources of working capital:

(1) Farmer's own cash.
(2) Borrowed money. In this case working capital is largely provided by stock firms and Banks. The amount of working capital needed for any one particular farm is a function of total expenditure and the time pattern of income.

With stock firm and bank advances interest is charged on the day to day balance of the account hence the average level of the advance is the working capital figure required for budget purposes. It should not be forgotten however that some farming enterprises reach a peak of advances at certain times of the year much greater than their average level. This may well present financial problems which are not immediately obvious when the average figure is assessed.

Working capital requirements are difficult to assess accurately. Each property and each farming type tend to have their own individual characteristics. The table below presents a rough guide only. It is constructed by considering the working capital requirements as a percentage of the value of land, buildings, stock and plant.

Table I - Working Capital Requirements of Various Farm Types

Farm Type	Percentage of Value of Land Building, Stock and Plant
Dairying (Intensive)	2%
Dairying and Mixed	3%-4% depending on comparative size of dairy enterprise
Sheep and Cropping	4%-5% depending on amount of crop and small seeds
Sheep (Intensive Fat Lamb)	5%
Sheep (Hill Country Store)	6%
Poultry	5%
Market Gardening	5%-10% depending on spread of sales
Orchard or Nursery	10%-15% depending on spread of sales
Tobacco and Hops etc	10%-15% depending on spread of sales

At the end of the set out of capital a summary is usually made showing the total capital involved in the farm. This figure is used later to assess efficiency and it is a very useful guide for later work on farm finance.

STOCK PERFORMANCES AND STOCK RECONCILIATIONS

In constructing a budget for a twelve monthly period it is necessary to isolate the total stock production for the year in question. This is done in a stock reconciliation which sets outs:

1. the number of stock in the varying age groups which are on the property at the beginning of the period (usually taken at 1 July)
2. the numbers of stock bred or bought during the period
3. an estimate of the deaths likely during the year
4. an estimate of the numbers of stock likely to be killed for the house or for dog tucker during the year
5. the numbers of sale stock disposed of during the period
6. and from these figures then deduces the stock which remain on hand in each age group at the end of the period. An example of this is presented overleaf.

From the sales colum of the stock reconciliation it is then possible to extract sale stock numbers for the year which are used in estimating gross income for the year. Similarly from the stock purchases column the necessary figures are extracted to be used in calculating gross expenditure.

Where stock numbers are static this reconciliation will give the normal annual numbers of stock bought and sold but where stock numbers are being increased a false picture of unusually low annual sales or high annual purchases will be obtained. Conversely where stock numbers are falling the opposite effect will occur and annual income as calculated in the Budget will be artificially high.

SHEEP PERFORMANCES

Lambing Percentage

There are two common methods of calculation

1. $\frac{\text{Number of Lambs Docked}}{\text{Number of Ewes Put to Ram}} \times \frac{100}{1}$

2. $\frac{\text{Number of Lambs Docked}}{\text{Number of Ewes alive at Docking}} \times \frac{100}{1}$

The first method is the more usual but the second method is used by some farmers. The first is the only true basis and students should be careful to obtain and calculate the correct figure on each property.

Mortality

An average figure for a ewe flock on low country is 4 to 5 per cent (usually 5 per cent for budget work). In hard country death rates become much higher and less regular from season to season. Deaths in lambs are irregular. Evidence suggests that they are of the order of 15 per cent of the total ewe flock on Plains land between dropping and docking and there is a big field here for better farm management. In budget work this loss is neglected and death rates are considered from docking to sale. Store lambs are normally sold at weaning and fats partly off mothers and partly off feed. Average death allowances are 2-3% for stores and 3-4% for fats.

Lambing Survival

A useful budget approach is to include deaths from docking to sale in a blanket calculation of a lambing survival percentage known as "Percentage Survival to Sale or Flock."

Flock Replacements

The useful life of a breeding ewe varies considerably depending on the type of country on which it is being carried. Eventually ewes must be culled to breed on easier country, or (apart from a few used for dog tucker) sent to the freezing works. It is necessary to make provision for replacement of the total annual loss from the flock (which includes death as well as culls) if static flock numbers are to be maintained.

Age Ear-Mark and Cast-for-Age

On many hill properties an age ear-mark is applied at docking as well as the registered ear-mark. Such properties usually sell cast ewes as "guaranteed Four Year Olds" or "guaranted Five Year Olds" meaning they have produced 3 and 4 crops of lambs respectively and these sheep command a premium at ewe fairs. Other hill properties discard solely on an inspection of the mouths in the autumn and these lines command prices in direct relation to their mouths and general appearance. In many cases there is doubt as to the genuineness of the title "Four Year Old" or "Five Year Old" given to theses lines at ewe fairs or main saleyards.

Culling

It is usual to cull to some extent in hill breeding ewe flocks using Romney, Corriedale or Half-Bred rams and unusual to cull much in fat lamb flocks using the Down type of ram. Culling is heavy in ewe lambs and 2 tooth ewes. Usually total numbers of ewe lambs are sufficient to allow fairly heavy culling in selection of ewe lambs to go into the winter and culls will have a ready sale as ewe lambs to Plains buyers. Even so it is normal to take at least 110% of 2 tooth ewes plus deaths into the winter as ewe hoggets and often 120 or 125%. Ewe lambs winter differently and for this reason it is desirable to be able to cull to some extend as 2 tooth ewes the following autumn. These cull 2 tooths are sold in truck lots at ewe fairs and often bring high prices.

In large ewe flocks on hill country it is the practice to cull in the autumn at the 4, 6 and 8T stage for such things as bearing trouble, bad udders, poor constitution etc., and small lines of 4, 6 and 8T ewes may be offered at ewe fairs. Usually these are a particularly bad buy for Plains farmers.

Home Killing and Dog Tucker

On sheep properties an allowance of $\frac{1}{2}$ a sheep per household per week is an approximate guide. Where single men are employed this allowance should be stepped up. It is usual to carry over cull lambs for house meat but wether hoggets may be bought. On small properties dogs will be fed on household scraps, offals from home killings and an occasional old ram or ewe. On larger holdings more dogs are needed and a proportion of old ewes will be killed for dog tucker.

Rams

It is usual to purchase rams as "one-shear" at local ram fairs. Ram fairs are stud or flock and the average farmer purchases at "flock" fairs. Rams will last "on average" 4 breeding seasons and are usually disposed of by killing for dogs. The usual allowance is 5 per 200 ewes with more rams on harder country and perhaps as low as 1 per 100 ewes on the best flats and lowlands where the country is good and rams are tested by a veterinary surgeon before the season starts.

Sheep Reconciliation and Methods of Calculating Annual Draft Necessary to Maintain the Ewe Flock

It is essential in any budgetary estimate to state the number and performance of the sheep flock on the property and to tie this up in a stock reconciliation covering a twelve month period. An example is given here of a store sheep unit carrying 2,000 ewes and breeeding own replacements. Ewes last 5 seasons and 100 per cent of lambs survive to weaning. Mortality in the ewe flock is 5 per cent and approximately 5 per cent of the 4, 6 and 8 tooth ewes and the 5 year ewes are culled each year. Twenty per cent of the 2 tooth ewes are culled before going into the ewe flock.

Procedure is as follows:

1. Establish the total loss from the ewe flock annually which is 5% deaths and 5% culling or approximately 200.
2. Ewes are kept 5 seasons so divide this total loss by 5 to get the approximate loss in each age group of the flock 200 + 5 = 40. There are more sheep in the younger age groups but stock losses tend to increase with age after the 2T year so equal annual losses have been allowed.
3. In a flock being kept for 5 seasons, more than 1/5th of the sheep are 2T, more than 1/5th are 4T, approximately 1/5th are 6T, less than 1/5th are 8T and less again are 5 year olds because of deaths. The flock composition is found by taking 1/5th of the total flock and calling this 6T ewes, e.g.

   2,000 + 5 = 400 6T ewes

   The number of sheep in each other age group is then found by adding or subtracting the appropriate number of annual losses per age group, e.g. number of 2T ewes =

   400 + (2 x 40) = 480 2T
4. Flock Composition:

480	2T	ewes
440	4T	ewes
400	6T	ewes
360	8T	ewes
320	5 years	ewes
2,000		

5. Cull mixed age ewes for sale. These make up half of the annual loss per age group, e.g. $\frac{40}{2}$

20	4T	ewes
20	6T	ewes
20	8T	ewes
20	5 year	ewes
80	for sale annually	

STOCK RECONCILIATION

Class of Stock	No. at 1st July	Stock bought	Natural Incr-eased	Stock Sold	Deaths and Miss'g	Kill for House or D.T.	Trans-fers within flock	Sub-To-tal	Stock at 30 June
Wether Lambs	-	-	1000*	950	-	-	50	1000 1000	-
Ewe Lambs	-	-	1000*	370	-	-	630	1000 100	
Ewe Hoggets	630	-	630	99	31	20	480	1260 630	630
2T Ewes	480	-	480	20	20	-	440	960 480	480
4T Ewes	440	-	440	20	20	-	400	880 440	440
6T Ewes	400	-	400	20	20	-	360	800 400	400
8T Ewes	360	-	360	20	20	-	320	720 360	360
5 year Ewes	320	-	320	280	20	20	-	640 320	320
Rams	50	13	-	-	3	10	-	63 13	50
Killers	60	-	50	-	1	49	-	110 50	60
	2740								2740

* This is the number which survive to sale or entry to the home hogget flock.

6. Cast for age ewes for sale are 320 less half the annual loss per age group (deaths only as they are all being culled.)
e.g. $320 - \frac{40}{2}$

= 300 less say 20 for dog tucker
= 280 C.F.A. ewes to sell

7. Two tooth ewes required are sufficient for 20% culling.

$\therefore \quad 480 \times \frac{120}{100} = 576$ of which 96 will be culled

Ewe lambs to be kept at weaning to ensure this number of 2T ewes allowing 5% death rate in ewe hoggets.

$= \quad 576 \times \frac{100}{95} = 607$, say 610 and cull 99 2T

8. Lamb disposal: 100% survival to sale or flock

$\therefore$ 1,000 wether lambs to sell less 50 killers
1,000 ewe lambs less 610 to flock gives 390 to sell
Less 20 culls for house mutton and dog tucker
= 370 ewe lambs to sell

9. This stock performance will now be formally summarized in a stock reconciliation. (over page)

10. Summary of Sales:

Wether Lambs:	Prime fat off the mothers	9% = 90		
	Second fat off the mothers	1% = 10		
	Prime fat off Feed	50% = 500		
	Seconds Fat off Feed	35% = 350	=	950
Ewe Lambs			=	370
2T Ewes			=	99
Mixed Age Ewes (Culls)			=	80
Cast for Age Ewes			=	280

Summary of Sheep Killed:

49 Wether hoggets and 2T wethers for the houses
20 Ewe hoggets (some for the house, rest for the dogs)
20 Old thin ewes for dogs
10 Old rams for dogs

WOOL PRODUCTION

Adult sheep are usually shorn once per year, dry sheep in September October and wet sheep after the dry shearing. Wet ewes may also be shorn pre-lambing (usually August) and this practice is growing in certain districts. The practice of shearing 3 times every 2 years (pre-lambing every second year) is also growing. In the South Island most sheep are first shorn as hoggets 13 months after birth although a proportion, especially Romneys, are shorn as lambs in November - December and January. This practice is more common in the damper districts and particularly in the North Island.

Crutching

Lambs which are not shorn are crutched in January-February. Ewes are crutched in June-July and may also be lightly crutched or "ring-crutched" before rams go out.

Yields and Main Classification

The main classifiction of wool is into fleece wool, bellies, pieces, necks and locks. In addition there are crutchings and often dags and dead wool. For budgeting purposes these last two may be neglected although they may be appreciable on big proprieties and when wool prices are very high.

A useful classification of wool is into fleece and oddments. An average weight of fleece wool from good ewes is 7.5 lb. Bellies will be about 0.5 lb, pieces about 1 lb or just under, necks 0.25 lb, and locks 0.1 to 0.2 lb. These last are often put in with pieces in the clips of small farmers. Ewe crutchings are of the order of 0.5 to 0.66 lb making a total of a 10 lb clip for the year. This is where a good class of sheep are fed well. As a guide it may be said that a few flocks have averaged 12 lb and some as low as $6\frac{1}{2}$ to 7 lb.

A Canterbury Plains ewe of the Corriedale or Half bred type would average a total clip of about 9 lb or just under.

Romney ewes would average $9\frac{1}{2}$ to 10 lb

Hoggets shown as lambs would average 7 - 8 lb

Long woolled lambs clip about $2\frac{1}{2}$ - 3 lb

Lambs crutch about $\frac{1}{4}$ - 1/3 per head

Budgeting Procedure

When quoting wool weights it should be clear that figures refer to numbers actually shorn and that weights include crutchings and do or do not, include lambs wool (if it is district practice to shear lambs.)

Obtain shearing tallies by deducting $\frac{1}{2}$ to 2/3 of the annual deaths, depending on the month of shearing, assess the wool weight per class of sheep and obtain the total wool yield per class of sheep, add the totals, then with the weighted price for the whole of the fleece clip assess the income from wool. Normally current quotations for the Average Grade of the major class of wool in the clip are a good guide to overall price per lb.

An example: No's at 1.4 ...	less deaths	shearing tally	Wgt/sheep including crutching	Total
1000 ewes	30	970	10 lb	9700
400 hoggets	6	394	$7\frac{1}{2}$ lb	2955
1050 lambs shorn		1050	$2\frac{1}{2}$ lb	2625
lambs crutched				
100 rams and killers	30	70	10 lb	700
	Total shorn	2484	Total Clip	15,980 lbs

BEEF CATTLE PERFORMANCE

Cattle are rapidly becoming a general feature of Canterbury Plains farming. They are a characteristic feature on Banks Peninsula and in the foothills and appear to be on the increase in the back country. Banks Peninsula buys larger numbers for fattening as do some farmers on heavier wet areas of the Plains. Values vary greatly from month to month and a cloase check should be made with current reports when doing budgets.

Calving Percentage

On places rearing store cattle an average calving percentage is 85. As the ruggedness of the country increases this percentage quickly decreases down to about 60%. Harsh winter conditions will lower the percentage as well.

Deaths

A usual figure is 2-3%. This varies too with the nature of the country. It may be as high as 5-6% in years with a hard winter and late spring.

Replacements

A breeding cow will usually produce about 6 calves. Heifers are mated to calve down at 3 years old. About 20-22% of the number put to the bull are usually 2 year old heifers. This allows for some not getting in calf. Bulls last about 4 seasons on average.

Sale Stock

Weaners - A number of farms on better country follow this practice of selling weaners and keeping the maximum number of cows. All weaner steers and about half the weaner heifers will be sold here.

Yearlings Some farmers hold their weaners over the winter and sell in the spring to fat lamb farmers. All the steers and 75% of the heifers will be sold in this case.

2 and 3 year old Stores

This is the usual practice on the regular hill country in both islands. No weaners or yearlings are sold. All the 2 and 3 year old steers are marketed at the regular spring fairs.

The 2 year old heifers will be sold either fat, or forward to lowland farmers some for breeding and some for fattening. In this case both steer and heifer prices are fairly closely related to export schedule prices in the north Island.

Fat Cattle

For the greater part of the year in the South Island it is a butcher's market, although with more topdressing cattle are becoming more important in the South Island. The present export schedule covers N.Z. except for Southland where a yield grading system is operated based on the yield of red meat per carcase. Export schedules are printed in the daily press each Monday and in the monthly Journal, The Meat Producer.

Stock Reconciliation

As an example of the usual set of a stock reconciliation for beef cattle a herd of sixty breeding cows and replacements selling 2 year old store cattle has been adopted. Cows last six breeding seasons apart from an odd death or cull and calving percentage is 84%. Overall death rate is 2%.

Class	No. on hand 1.7	No. bought	Nat. increases	Sales	Deaths	Killers	Trans. within flock	Sub-Total	Est. on hand 30.6
Steer	-	-	25	-	-	-	25	25 25	-
Heifer Calves	-	-	25	-	-	-	25	25 25	-
1yr old Steers	25	-	25	-	1	-	24	50 25	25
1yr old Heifers	25	-	25	-	-	-	25	50 25	25
2yr old Steers	24	-	24	24	-	-	-	48 24	24
2yr old Heifers	25	-	25	12	1	-	12	50 25	25
Breeding Cows	60	-	12	11	1	-	-	72 12	60
Bulls	2	1	-	1	-	-	-	3 1	2
	161								161

Summary of Sales:

24	2 year old store steers
12	2 year old breeding heifers
1	cull fat 3 year old heifer
1	cull boner bull
10	cull breeding cows
48	

Dairy Stock Performances

(a) Cow Production

1. Butterfat production

Work from butterfat figures supplied to the factory not from herd test figures. For budget purposes obtain from the farmer as many years factory production as possible, the number of cows and heifers to be milked that season and estimate the number of effective milkers, assess factory fat per cow and compare the total production with previous production, taking due regard to the season and also efficiency, past and present of the management of the farm.

2. Town Milk production

The above remarks also apply to town milk producing properties. Here the concept is total gallons sold. The main difficulty in assessing gallons per cow, is to obtain the effective number of cows milked in the year. A useful method is to total the number of cows milked per month for the whole year. A Town supply cow usually milks for $9\frac{1}{2}$ months so this total is then divided by 9.5.

(b) Herd Replacements

1. Herd wastage

An analysis of wastage and culling figures produced in 1961-62 the N.Z. Dairy Production Marketing Board are as follows:

Sold for dairying	1.45%	
Low Production	6.81	
Accident and Injury	0.58	
Old age and sundry	2.26	11.10
Disease		
Sterility and abortion		4.34
Calving trouble		0.07
Mastitis		0.98
Tb.		2.47
Bloat		0.74
Metabolic disorders		0.29
Death and sundry		1.20
Total disease wastage		10.09
Total wastage		21.19

For budgeting purposes 18-23% could be taken, the figures assessed after obtaining all the pertinent factors about the farm, the management and the district. Cull cows are invariably sold as boners; for prices see Beef Schedule.

2. Calving percentages (Calves produced per 100 cows and heifers wintered)

N.Z. calving percentage averages 90% (5-7% of cows fail to get in calf while a further 3-5% cows mated abort).

Approximately 4% of the calves born die at birth, or are born dead, this leaves an effective calving percentage of 86%.

3. Number of heifers available as replacements

In effect this is 43 heifer calves available for rearing, but it includes late calves and free martins which are not suitable and are disposed of as bobby calves. They amount to approximately 20%. Thus you have left 32 heifer calves suitable for rearing. Losses from one month to 2 years approximate 10% and of those which survive to the 2 year old stage 5% prove not in calf. Thus we eventually have 27 heifers that will calve into the herd. As approximately 20% are required to maintain the numbers in a herd, it can be seen that there are 7 heifers which can be sold for dairying or need not have been reared. It is usual for a farmer to ensure he has sufficient replacements by having the number of yearling heifers equivalent to 25% of his milking herd.

4. Bulls

The average herd life of bulls is $4\frac{1}{2}$ years, this means that having been used in the herd for the first time when 15 months old the average bull would be 6 years old when culled.

The main causes of loss or disposal are, prevention of inbreeding, poor results from progeny, sterility, accidents, and because of not being able to manage a bad tempered beast. The increasing use of A.B., plus the high remuneration received from a potter bull in recent years has tended to reduce the active life of bull in a herd.

(For potter bull realisations see Beef Schedule)

(c) Stock Reconciliation: (Seasonal Supply Herd)

An example of the usual set out of the stock reconciliation for a normal seasonal supply dairy herd is presented below. The herd comprises 80 cows and replacements. Effective milkers number 74.

Class	No. on hand 1.7.	No. bought	Nat. increases	Sales	Death	Killers	Trans within flock or herd	Sub Total	Est. on hand 30.6
Heifer Calves	-	-	36	14	2	-	20	36 36	-
Bull Calves	-	-	36	35	1	-	-	36 36	-
Yearling Heifers	20	-	20	2	2	-	16	40 20	20
Milking Cows and Heifers	80	-	16	13	-	-	-	96 16	80
Bulls	2	-	-	-	-	-	-	2 -	2
	102								102

Summary of Sales:

49	Bobby Calves
2	2 year old in calf heifers
13	Cull cows
64	

(d) Stock Reconciliation: (Town Supply Herd)

Unlike the normal dairy reconciliation this has autumn born calves on hand to begin and end. It also differs in that the heifers are usually not calved down until aged $2\frac{1}{2}$ years. An example for an 80 cow herd which both breeds and buys replacements is presented below. This is common practice since wastage is rather higher in town supply herds and less calves are usually reared since whole milk is being sold.

In effect the herd has been split into two - the spring calvers (30% of the total) and the autumn calvers (70% of the total). Note that the autumn calves go into the spring herd while the spring calves go into the autumn herd.

Class	No. on hand 1.7	No. bought	Nat. Increases	Sales	Deaths	Trans within flock or herd	Sub Total	Est. on hand 30.6
Heifer calves (autumn born)	6	-	25	18	1	6	31 25	6
Bull calves (autumn	-	-	25	24	1	-	25 25	-
18 mth old heifers	6	-	6	-	1	5	12 6	6
Spring clvg cows	25	-	5	4	1	-	30 5	25
Heifer Calves (spring born)	-	-	11	4	1	6	11 11	-
Bull clvs (spring born)	-	-	11	11	-	-	11 11	-
Yearling heifers	6	6	6	-	-	12	18 12	6
2 yr old heifers	12	-	12	-	-	12	24 12	12
Autumn Calvers (cows in milk)	55	-	12	9	3	-	67 12	55
Bulls	2	1	-	1	-	-	3 1	2

(e) Town Milk Production

The milk year operates from September 1st to August 31st. The price in any one particular year is by a special formula to the guaranteed price for butterfat supplied to cheese factories. It is computed by the N.Z. Milk Board who purchase the milk, on a guaranteed quota basis, from local producer associations. The system of payment for quota milk, quantities in excess of quota, penalties for deficiencies, standards that town milk have to comply with, and seasonal payouts will become apparent when students visit town supply farms.

1. Quota Milk

The N.Z. Milk Board are guaranteed a daily quota supply by the local association, who in turn organise the obtaining of this quantity by allocating to farmer suppliers a daily quota for the whole year. The farmer must take out shares in the association to become a supplier and his milking shed and stock must comply with certain standards as set down by the Agriculture Department. The basis for allocation of quotas varies from one district to another, but with Canterbury Dairy Farmers Ltd., increases in quota are now (1969) related to the amount of surplus milk supplied in the months of February, June, July and the supplier's other lowest month of the year.

2. Quantities in excess of Quota (surplus milk)

All milk produced on a town supply farm is taken by the local association, and the milk in excess of requirements is usually sent in from the receiving depot to a local dairy factory, where a lower price is obtained. In the spring months nearly all producers send in milk above their quota, but in other months of the year a proportion of the producers are unable to meet their full quota, whilst other farmers do have an excess supply, and it is in these months that this excess milk is accepted at full quota prices.

The acceptance of surplus milk varies with the seasons; in general the Canterbury Dairy Farmers Ltd, pay out on the following basis:

September to January	-	full price paid for quota + 5% all excess at surplus milk prices.
February and March	-	full price paid for quota + 15% all excess at surplus milk prices.
April and May	-	full price paid for quota + 20%, all excess at surplus milk prices.
June and July	-	full price paid for quota + 25%, all excess at surplus milk prices.
August	-	full price paid for quota + 20%, all excess at surplus milk prices.

3. Calving Pattern and Analysis of Production

Because the seasonal production of milk is so important on a town supply farm it is necessary to estimate the likely pattern of production

(quota and non-quota milk) on a monthly basis so that likely deficiencies can be remedied and income can be more accurately estimated. To do this a table showing cows calving, and numbers in each month of their lactation, is drawn up. In such a table cows calving means the number which actually calve down and enter the herd rather than total cows carried, (i.e. effective milkers). Another point to note is that if say 10 cows are calving in August then because some calve late in the month they will only be an effective 5 for the whole month.

Besides a knowledge of numbers of cows in milk each month and the month of lactation which they are in it is necessary to know the average production per cow per day in each month of lactation, to assess overall monthly production. The average Canterbury town supply herd produces and sells about 750 gallons of milk per effective cow. A good herd of Friesians well managed and fed should produce about 900 gallons per effective cow while one or two top herds are producing about 1050 gallons per cow. Lactation patterns of production in gallons per day per cow for each month of lactation are given below for each of these three levels of production.

Period	750 gals/cow	900 gals/cow	1050 gals/cow
1st month	$3\frac{1}{2}$ gals/day	4 gals/day	$4\frac{1}{2}$ gals/day
2nd month	4 " "	$4\frac{1}{2}$ " "	5 " "
3rd month	$3\frac{1}{2}$ " "	4 " "	$4\frac{1}{2}$ " "
4th month	3 " "	4 " "	$4\frac{1}{2}$ " "
5th month	3 " "	$3\frac{1}{2}$ " "	4 " "
6th month	$2\frac{1}{2}$ " "	3 " "	$3\frac{1}{2}$ " "
7th month	2 " "	$2\frac{1}{2}$ " "	3 " "
8th month	$1\frac{1}{2}$ " "	2 " "	$2\frac{1}{2}$ " "
9th month	1 " "	$1\frac{1}{2}$ " "	2 " "
10th month	1 " "	1 " "	$1\frac{1}{2}$ " "

In the spring months of September, October, November and December 5% should be added to the calculated total monthly production to allow for the spring flush.

The calving pattern outlined below as an example is of the 80 cow herd for which a stock reconciliation was constructed.

CALVING SCHEDULE

Month	Cows Calvg	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
July	-	-	-	-	-	-	-	-	-	-	-	-	-
August	14	-	7	14	14	14	14	14	14	14	14	14	-
Sept.	9	-	-	5	9	9	9	9	9	9	9	9	9
Oct.	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov.	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec.	-	-	-	-	-	-	-	-	-	-	-	-	-
Jan.	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb.	10	10	10	10	10	10	-	-	5	10	10	10	10
March	18	18	18	18	18	18	18	-	-	9	18	18	18
April	15	15	15	15	15	15	15	15	-	-	8	15	15
May	8	8	8	8	8	8	8	8	8	-	-	4	8
June	-	-	-	-	-	-	-	-	-	-	-	-	-
Year	74	51	58	70	74	74	64	46	36	42	59	70	60

From the calving schedule and the table of daily production one can quickly work out the total daily production and then multiply by days in the month obtain the monthly production. For July in the table above we have at the 900 gallons per cow level of production:

10" x 3 (6th ") = 30
18" x 3½ (5th ") = 63
15" x 4 (4th ") = 60
8" x 4 (3rd ") = 32

185 gallons per day

and 185 x 31 = 5735 gallons for the month

This information for each month is tallied up and inserted in a schedule of estimated milk sales. Using the information set out in sub sections 1. and 2. above together with price data for each period total production is divided between that sold at quota price and that sold at surplus price and is valued accordingly. A quota of 80 gallons per day is assumed.

SCHEDULE OF ESTIMATED MILK SALES

Month	Estimated Total Gals.	Gals. sold at Quota price	Value $	Gals sold at surplus price	Value $
July	5,735	5,735		-	
August	5,920	5,920		-	
September	6,960	2,400		4,560	
October	6,770	2,480		4,290	
November	5,640	2,400		3,240	
December	4,600	2,480		2,120	
January	3,110	2,480		630	
February	2,515	2,515		-	
March	3,940	3,940		-	
April	5,760	2,880		2,880	
May	6,880	2,976		3,904	
June	6,360	6,360		-	
Year	64,190	42,566		21,624	

PIG PERFORMANCE

(a) Pig Production when associated with the Dairy Herd

Breeding Herds

The essential point to establish is the number of breeding sows to be carried in any one farming season. The herd will be in one of three states - static numbers or herd numbers increasing or decreasing. With static numbers it is fairly easy to establish the essential budgetary points of number of breeding animals required to maintain the herd and the number of chopper sows for sale at the end of their breeding life. The boar situation can be determined similarly. With changing herd numbers attention to the age of the sows is important and common sense provides the answer. Sows last on average about four years (7-8 litters) while boars are usually disposed of after three years because of difficulties with inbreeding.

Sale Numbers

The essential points are the number of litters per year, the litter size and the mortality. The answers are essentially an assessment of the inclination and standards of husbandry of the pig owner. The performance figures given below are taken from a Pig Council Survey conducted in 1950. In general the farmers in the survey would be above average in pig management.

Sow Cow Ratio

The Pig Council Survey average was 1 sow per 9.8 cows. In general efficient levels of production could be considered to be as follows:

Weaner production	1 sow per 4 cows
Porker production	1 sow per 6 cows
Baconer production	1 sow per 10 cows
Mixed Porker & Baconer	1 sow per 8 cows

Pigs born per Litter

The average figure was 9 piglets born per litter

Pigs weaned per Litter

The average figure was 7 piglets weaned per litter

Litters per Sow per Year

The average figure was 1.8 litters per sow per year

Pigs Sold per Sow per Year

The average figure was 12 pigs sold per year.

Within the increasing trend towards specialist pig production not reliant on skim milk feeding added management improvement has resulted and in this situation average production has improved. Figures of 2 litters per sow per year and 14 pigs sold per sow can reasonably be expected.

In general losses up until weaning amount to 20-25% of the total number of pigs born with post weaning losses about 3-5% of the total number of pigs born. Litters per sow range from 1.6 to 2.0 on average per year depending on levels of efficiency. The number of pigs sold per sow over New Zealand as a whole calculated from A. &. P. statistics is only 10 so that it is obvious the Survey farmers are above average in their pig management.

Stock Reconciliation (Pigs)

As an example of a stock reconciliation for pigs the following situation is outlined. A farmer running 50 cows on cream supply has 8 sows producing almost all porkers. Efficiency is above average so that 9 pigs are born per litter and 7 are weaned.

The 8 sows produce 14 litters in the year and after allowing for post weaning deaths 95 porkers are sold each year.

Class	No. on hand 1.7	No. bought	Nat. Increases	Sales	Deaths	Killers	Trans within flock or herd	Sub Total	Est-on hand 30.6
Young Pigs	14	-	126	95	31	-	-	140 126	14
Breeding Sows	8	2	-	2	-	-	-	10 2	8
Breeding Boar	1	-	-	-	-	-	-	1 -	1

Pig Prices

The crux of the matter is supply and demand. Where the supply is insufficient to meet demand or is fluctuating relating to demand there will be a fluid price level set by auction prices in accordance with the level of these two factors. This is largely the case in the South Island. Local supply is insufficient to meet demand and so auction prices at Addington and Burnside set the return to the producer. No study of these has as yet been made and students are directed to observe the prices in Wednesday's Press each week. For South Island budgets take 90 per cent of current Addington realisations for fat pigs. Store pigs must be interpreted according to the time of the year.

(b) Pig Production when farmed on an intensive "pigs only" basis

(i) Sows

Management of the sow herd is critically important as a means of generating profit in the pig enterprise. The sow production cycle is approximately 26 weeks and in excess of 2 litters per sow per year should be aimed for. Minimum sow perforamce of specialist pig units should be as follows:

No./litter born	=	11.0
No./litter reared	=	8.5
Litters/year	=	2.0
Pigs weaned/sow/year	=	17.6

Feeding of Sows

Sows are usually grazed during pregnancy, the amount of supplementation depending on the nutritive value of grass eaten.

The following is a satisfactory level of feeding for sows:

Mating:	2 weeks at 6lb/day	84	
	2 weeks at 4lb/day	56	
			140lb meal + grass
Pregnancy:			
	1st month pregnancy	4-6lb/day	
	2nd and 3rd months pregnancy	1-3lb/day	+ good grass, clovers or Lucerne
	Last month pregnancy	3-5lb/day	476lb meal + grass 462lb meal

Lactation: 6 weeks at 11lb/day

No. Piglets	lb/Day
4 - 6	8
7 - 9	11
10 - 12	13

TOTAL MEAL/LITTER REARED 1078lb + grass

Compounded sow rations $56 - 58/metric ton.

(ii) Young Pigs

A palatable, concentrated and easily digestible meal should be provided from approximately 10 days age.

Two examples of suitable creep mixtures:

Milk powder	25%	25%
Meat meal	5%	10%
Barley meal	62.5%	65%
Lucerne meal	2%	-
Sugar	5%	-
Salt	0.5%	-

+ Vitamin and mineral additive.

Retail prices for pre-starter rations are $5.00 - $5.50 per 50lb bag. (11c/lb). Starter rations $7.00 - $7.50 per 125lb bag (6c/lb).

Pigs are usually weaned at 5-6 weeks.

(iii) Growing - Finishing Pigs

The following scales provide a guide to weight - for - age to be expected from fattening pigs.

	Liveweight (lb)	Approx Age (wks)	Feed Units/Day
	40	8.5	2
	60	11.5	2.5
	80	14.0	3
pork	100	17.0	3.25
	120	19.5	3.5
bacon	140	22.0	3.75
	160	24.5	4
	180	26.5	4.5

Dressing percentages are 69-73%

High protein weaner-grower meal (or pellets) should be fed to young pigs and a gradual change to a finished ration should take place at 8 - 9 weeks.

The following are satisfactory weaner and finisher rations.

Ingredient	Weaner Grower	Finisher
Meat meal	10	15
Milk powder	7	-
Lucerne meal	3	2
Barley	79.5	82.5
Salt	0.5	0.5

Vitamins and minerals should be added according to manufacturers specifications.

Pea meal as a vegetable protein may be added at up to 15%.

Retail, compounded meal prices are as follows (per metric ton)

Weaner Grower $65 - 68/ton (3.3c/lb)
Finisher Meal $59 - 62/ton (3c/lb)
Baconer Ration $59 /ton (2.9c/lb)

Usually an extra $1.50 - 2.00/ton is paid for pelleting of rations and up to $4/ton is deducted from the above prices if delivered in bulk.

FEEDING STANDARD FOR LIVESTOCK

In any integrated programme of production whether of livestock only, or of stock and crops in combination, it is necessary to be sure that adequate provision has been made for the livestock it is proposed to carry. Two aspects are involved here. On the one hand it is necessary to assess the probable amount of feed which will be grown on the property at different seasons of the year, and on the other hand it is necessary to assess the probable requirement of the livestock in these seasons and balance the stock requirement with the feed available.

This may be done in the highly accurate way adopted by the animal scientist by considering quantities of Digestible Dry Matter and Protein in the various feeds and balancing this with stock requirements (refer Animal Nutrition - I.E. Coop). Because of the complexity of the method a simpler system which can only approximate roughly to the true position has been adopted for farm management work in New Zealand. This is the Stock Unit system which takes as its base the feed requirements of an average Romney ewe plus her lamb at the different seasons of the year. Other stock including cattle and horses are rated on this scale.

Some theoretical difficulties arise when doing this because the spread of feed requirements of the sheep and the dairy cow differ (see Table I below). Provided one remembers this fact which makes fat lamb production much easier than dairy production in areas having a summer drought (see comparative monthly pasture production columns in Table I) little practical

difficulty should be met. Of course it is also necessary to remember the need for a balanced diet when assessing the place of the various supplementary feeds.

Table I Comparison of Monthly Stock Requirements as Percentages

	Standard Ewe flock	Standard Ewe with Twins	Jersey Herd	Friesian Herd	Beef Cattle Herd
January	5.1	4.3	9.0	6.1	10.6
February	5.1	4.3	8.6	5.1	10.7
March	5.3	4.4	8.2	7.4	5.9
April	5.4	4.6	7.8	8.6	5.9
May	5.6	4.8	6.2	9.3	5.9
June	5.8	4.9	5.2	8.6	6.0
July	7.0	7.0	7.5	8.6	7.3
August	10.8	11.5	9.0	9.3	8.1
September	13.3	15.0	10.0	9.7	8.8
October	14.3	15.8	9.7	9.7	10.0
November	14.3	16.0	9.5	9.2	10.3
December	8.0	7.4	9.3	8.4	10.5

Table II Comparison of Monthly Pasture Production as Percentages

	Canterbury Pasture (M-H)	Bay of Plenty Pasture
January	4.3	10.5
February	1.8	9.4
March	6.2	8.3
April	5.7	6.9
May	4.3	4.7
June	3.0	3.2
July	2.8	2.8
August	6.7	7.8
September	17.6	10.1
October	22.5	11.8
November	15.2	12.9
December	9.9	11.6

Table III Classification of Various Classes of Livestock is Ewe Equivalents

Class of Stock	Average Liveweight lbs	Intake of D.M. lbs	Ewe Equivalents		
			May-August	Sept.-Dec.	Jan.-April
Sheep:					
Ewe-B/L x Rom	140	1430	1.1	1.1	1.1
Romney	120	1310	1.0	1.0	1.0
Corriedale	100	1180	0.9	0.9	0.9
Merino	80	1030	0.8	0.8	0.8
Hoggets - ewe	50 - 90	810	0.6	0.5	1.0
Hoggets wether	80 - 90	740	0.6	0.5	1.0
Wethers M.A.	110 - 120	920	0.7	0.5	1.0
Rams	160	1080	0.8	0.5	1.0
Studs - ewes			1.25	1.25	1.25
hoggets			1.0	0.75	1.25
Cattle (1) Beef:					
Br. Cow	1000	8300	6.0	6.0	6.0
Heifer - weaner	300 - 600	4600	3.5	3.5	4.0
yearling	600 - 800	5200	4.0	4.0	4.5
2yr old	800 - 1000	6200	4.5	4.5	6.0
Steer - weaner	350 - 750	5200	4.0	3.5	4.5
yearling	750 - 1100	6600	5.0	4.0	6.0
(2) Seasonal Dairying					
Jersey cow	800	9100	6.5	6	7
yearling			2.5	3	4.5
calf			-	-	2
bull			5	4	5
(3) Town Supply					
*Friesian cow	1200	11700	10+ (x3)	5+ (x2)	5+ (x2)
Heifer 2 yr old			10	5	5
1 yr old			3	4	5
Calf			-	2	3
Bull			5	4	6
Horses: Hacks			7	5	9

The above ewe equivalent classification is basically from an article by Professor I.E. Coop published in the "New Zealand Agricultural Science" Vol. 1, No. 3, Nov. 1965. The recommended rates for town milk supply dairying have been adjusted however to reconcile with subsequent Farm Management Research which takes into account such factors as high wastage of feed involved in winter milk production etc.

Similarly, stud sheep have been correspondingly increased due to the scoped required in stud sheep farming.

* Town Milk Supply Friesian cow is assessed as follows:

10 E.E. maintenance plus no. gallons milk per day multiplied by 3 during winter and by 2 spring-summer-autumn, i.e. 750 gallons autumn calver cow for May-August is

$10 + (3\frac{1}{2} \times 3) = 20\frac{1}{2}$ E.E.'s

\+ Wether hoggets - winter fattening May-August as 1 E.E.

The above figures should be regarded as approximations and in applying these E.E. factors effects of environment (wind, temperature, grazing pressure, etc.) must be borne in mind.

On rough hill country where cattle and wethers are used to control second growth the feed requirements are lower than those listed since the stock often lose weight then.

A point which should always be borne in mind in assessing probable feed available is the amount of seasonal variation from year to year in the district. In some areas such as coastal Southland this variation is fairly small - feed supplies are reliable - while in other districts like Canterbury and Marlborough the variation between seasons is extreme and must be allowed for by carrying extra supplies of hay as an insurance.

A rough guide to average feed availability from pastures and various crops is contained in Table IV below. Wherever possible it should be supplemented by detailed local knowledge of the district and the farm being budgeted.

TABLE IV - Value of Various Feeding Materials

Winter Feed (May - August)		
Pastures (Canterbury)		S.U. per acre
	Very good	$2 - 2\frac{1}{2}$
	Fair - good	$1\frac{1}{2} - 2$
	Poor - fair	$\frac{3}{4} - 1\frac{1}{2}$
Autumn saved pasture		
	Good	8
	Fair	5
	Poor	2
Roots	Per 1 ton (2240 lbs)	Per 1 ton
	Swedes or Pumpkins	1
	Chou moellier or kale	2
	Mangolds	1
	Fodder Beet	$1\frac{1}{2}$
	Sugar Beet	2
	Turnips	$\frac{3}{4}$

Grain	Per 1 ton (2240 lbs)
Barley	18
Oats	16
Wheat	19
Peas	18

Hay Per 1 ton	Per 1 ton
Good lucerne or clover hay (35-40 bales /ton)	10
Good pasture or av. lucerne (35-40 bales/ton)	8
Fair hay (35-40 bales/ton)	5 - 7
Ryegrass straw (55-60 bales/ton)	3 - 4
Pea straw (55-60 bales/ton)	3 - 4

Ensilage Per 1 ton	
Very good	4
Good	3

Lupins	S.U. per acre
Good	20
Fair	12
Poor	3

Italian ryegrass greenfeed	
Good	20
Fair	12
Poor	3

Greenfeed oats, barley, ryecorn.	
Good	10
Fair	5
Poor	2

If greenfeeds and A.S.P. are required for specifically Lambing Feed they should not be calculated as winter feed.

Lambing Feed

With early lambing there is special need for nutritive lambing feed, separate from winter and spring - summer feed provisions. A guide to feeding rates is: (in relation to onset of lambing, quality of feed, and beginning of spring growth.)

New grass	4 - 5 acres per 100 ewes
A.S.P.	6 - 8 " " " "
Greenfeed oats or barley	6 - 8 " " " "

Spring-Summer Feed (Post Lambing - Weaning)

Medium - Heavy Soils	Grazing (S.U. per acre)	Grazing pre-small seeds (S.U. per acre)
Very Good Pasture	11 - 15	6 - 8
Good Pasture	8 - 10	4 - 5
Fair Pasture	5 - 7	2 - 3
Medium Soils		
Very Good pasture	8 - 10	4 - 5
Good Pasture	6 - 7	2 - 3
Fair - Poor Pasture	3 - 5	-
Lucerne: Very Good	10 - 12	-
Fair	7 - 9	-
Light Land		
Lucerne		
Very Good	8 - 10	-
Good	6 - 7	-
Fair - Poor	4 - 5	-
Pasture		
Very Good	5 - 7	-
Good	3 - 4	-
Fair - Poor	1 - 2	-

Summer-Autumn Feed: (January - April)

On sheep farms little trouble is usually experience in carrying stock at this period so a general feed calculation is seldom done. Special fattening feed is usually required for lambs as detailed below but the ewe flock can usually be maintained on pasture pickings plus some poorer quality hay in districts subject to drought.

On dairy farms, particularly in districts subject to summer drought this period can critically affect annual production so that adequate provision of supplementary feeds is necessary. Hay, ensilage, chou moellier and turnips can be taken at their winter values. Other feeds as follows:-

Greenfeeds	Maize	2 S.U. per ton
	Millet	15-20 S.U. per acre
Pastures	Best irrigated pastures	8 S.U. per acre
	Good heavy land pasture	6 S.U. per acre
	Fair heavy land pasture	4 S.U. per acre

Fattening Feed

Rates based on the fattening of a lamb to 33 lb in a period 6 - 8 weeks weeks, in an average Canterbury season.

	Lambs fattened per acre
Rape, kale and chou moellier	
Good	25 - 30
Fair	15 - 18
Poor	7 - 12
Pea Stubble	2 - 4
Ryegrass stubble	2 - 3
White clover stubble	3 - 4
Wheat,barley, oat stubble	1 - 2
Good pasture	5 - 6
Fair pasture	2 - 4
New grass and turnips	6 - 8
Lucerne (mature)	8 - 10

Feed Requirements of Pigs

Because pigs are usually hand fed on concentrates and skim milk whereas other stock forage for themselves on pasture most of the year a different system of calculating feed requirements has been adopted for pigs. This is the Meal Unit system which is based on 1 lb of Barley Meal = 1 Unit. Pig Production must be carefully fitted to the seasonal availability of skim milk with most New Zealand pig enterprises to get maximum utilization of feed. (See Animal Nutrition - I.E. Coop.) Provided this is remembered the following total requirements for various classes of pigs can be used satisfactorily.

TABLE V Meal Unit Requirements of Various Classes of Pigs

Boar	2000 M.U. per year maintenance
Sow	2000 M.U. per year maintenance + 900 M.U. per litter production ration
Weaners	40 M.U. covers necessary creep feeding until weaning if the aim is to produce weaners for sale
Porkers	250 M.U. covers total feed (including creep feeding) required for a pig to reach a liveweight of about 120 lbs at the age of four months.
Baconers	500 M.U. covers total feed (including creep feeding) required for a pig to reach a liveweight of about 200 lbs at the age of six months.
Stores	(a) 100 M.U. covers total feed (including creep feeding required by a pig up to the age of 3 months if the aim is to sell light stores. (b) 120 M.U. per month will maintain a store pig over the winter if the aim is spring fattening (c) 250 M.U. additional would be required to fatten this type of pig to bacon weights (6 weeks fattening).

TABLE VI Conversion of Various Foodstuffs to Meal Units

Cereal Grains

Barley, Wheat and Maize	1 lb = 1 Meal Unit
Pollard Bran or Pig Pellets	1¼ " = 1 " "

Note: Oats are too fibrous for pigs

Protein Rich Foods:

Meat meal (good quality)	¾ lb = 1 Meal Unit
Meat and Bone Meal	1 " = 1 Meal Unit
Peas and Pea Meal	1 " = 1 Meal Unit

Milk and Milk Products

Skim Milk	1 gal. = 1 Meal Unit
Whey	1½ " = 1 Meal Unit
Skim milk powder	1 lb = 1 Meal Unit
Buttermilk powder	1¼ lb = 1 Meal Unit

Roots

Fodder Beet (320 M.U. per ton)	7 lb = 1 Meal Unit
Sugar Beet (450 M.U. per ton)	5 lb = 1 Meal Unit
Carrots (280 M.U. per ton)	8 lb = 1 Meal Unit
Swedes (250 M.U. per ton)	9 lb = 1 Meal Unit
Potatoes (560 M.U. per ton)	4 lb = 1 Meal Unit

Other Foods

Good Succulent Pasture	2 lb (dry matter)	= 1 Meal Unit
Molasses	5 lb	= 1 Meal Unit

CASH CROP AND SMALL SEEDS PRODUCTION

Yield

These should be determined after consideration of the district averages, the condition of the property and if possible the growing crop, and past performances on that particular property. There are considerable variations due to season but an experienced man will be able to estimate most crop yields in advance fairly accurately after becoming accustomed to his district.

Peas

There are two major sections of this trade. The first is Field Peas or Maple Peas which are grown mainly on the medium quality soils and may be either contract or free. The bulk of the crop is exported. It is sold in two grades after Machine Dressing.

Standards are	No. 1 Grade	No. 2 Grade
Minimum Size	92% over ¼" in dia. 8% tolerance down to 7/32"	85% over 13/64" in dia. 15% tolerance down to 5/32"
Splits	Not to exceed 0.5%	Not to exceed 2%
Damaged & Sprouted	Not to exceed 1.5%	Not to exceed 2%
Foreign Matter	Not to exceed 0.5%	Not to exceed 2%
Moisture	Not to exceed 15%	Not to exceed 15%

The second section of the pea trade is the Garden Peas. A big proportion of the crop is exported but part of it is used as seed for the production of Freezing Peas - a sub-section of the Garden Pea trade. Garden peas whether for Freezing or threshing are usually grown on the better medium-heavy and heavy soils. Freezing peas are contracted in specific areas near factories while the bulk of the garden peas for threshing are also contracted. For further information on peas consult New Zealand Journal of Agriculture Volume 100 page 57, Volume 102 page 357.

Wheat

The principal basis of the wheat market is the F.A.Q. milling standard:

Bushel weight - not less than 61 lb
Broken grain - less than 4%
Moisture - 15.5% or less

Freedom from weed seeds and musty grains. Wheats are paid for on the F.A.Q. basis at fixed prices.

Fowl Wheats

Owing to the shortage of wheat in New Zealand, the balance of milling requirements being made up by subsidizing imports, non-milling wheat finds a ready market at milling prices as fowl wheat if quality is at all reasonable.

Seed Wheats

There is a small volume of pedigree wheat produced by a few growers from Government stock grade but this can be disregarded for ordinary budgetary purposes. The main seed wheats are produced as Mother (from Pedigree) 8c above milling and Commercial (from Mother) 5 c above milling.

Good lines of milling are of course suitable farmers' seed.
Reference: New Zealand Journal of Agriculture Volume 100, pages 280 to 343.

Barley

There are two sections of this crop. The first and most important is Malting barley which is grown on contract and the other is feed barley

which may be contract or free.

Malting Standard:	Skinned grains - not more than 5%
(No. 1 Grade)	Screenings (pinched grain) not more than 15%
	Moisture content - not more than 15%

Main varieties for malting are Research (medium soils) Kenia and Carlsberg (heavy soils). Varieties for feed are Cape, Wong and Black Skinless. For other information refer Canterbury Chamber of Commerce Agricultural Bulletin No. 361 (August 1959).

Oats

This crop is usually grown on the medium and lighter soils as it is a lower fertility demander than wheat or barley. The main section of the trade are - (a) Milling Oats (Garton's) grown on contract to the porridge manufacturing firms - (b) Algerian and Dun Oats grown for seed to provide for the greenfed oat trade and (c) Oats for chaff.

The New Zealand average yield of oaten chaff is about $1\frac{1}{4}$ tons per acre (variation 1 ton to $3\frac{1}{2}$ tons). Good chaff has a bright colour, a sweet smell and a high proportion of grain to straw. 25-28 bags to the ton is a good standard. Approximately 27 bushels to the ton,grain to straw ratio 45/55. Good average quality up to $70 per ton O.T.S.E. for new seasons F.A.Q. Old seasons $50 - $60 per ton.

Reference: New Zealand Journal of Agriculture Volume 100 page 161.

Linseed

Grown chiefly on the "clay downs" type of country but also a useful crop on heavy land (e.g. Eiffleton) or any reasonably fertile country which is assured of summer showers. New varieties released in recent years which are higher yielding (Redwood and Rocket) and the re-establishment of the linseed oil industry in this country have stimulated new interest in this crop. Grown on contract to the manufacturers.

Reference: New Zealand Journal of Agriculture Volume 102, pages 119 - and 381.

Potatoes

Reference: New Zealand Journal of Agriculture Volume 101 page 218.

The New Zealand crop can be divided into new potatoes and main crop. Approximately 20,000 acres are grown each year to satisfy New Zealand's requirements.

New Potatoes

The main varieties of new potatoes are Epicures and Arran Banners.

Average yields are probably about 3-4 tons of marketing potatoes and for budgeting purposes, an average price of 2-3c per lb could be used, but up to date prices can be seen in the produce reports in the daily newspapers.

Main Crop

The New Zealand and Canterbury average potato yields are approximately 6.0 and 6.5 tons respectively. Certified seed invariably yields 20 - 25% more than uncertified seed.

In Canterbury a 6 ton crop would comprise approximately

4 tons table potatoes
1½ tons seed
½ ton pig

6

"Good Table" potatoes are of good shape according to variety, not more than 15% of which can be passed through a square the sides of which have an inside measurement of 2", the lot shall be free (2%) from green potatoes, second growth, dry or wet rots including blight or frost damage; the lot shall be practically free from earth which shall not exceed 4% by weight of the lot; the weight of the lot affected by mechanical injury including bruises and cuts shall not exceed 6%, the lot shall be practically free from scab or other defects not herein mentioned.

F.A.Q. potatoes are similar to the above except for the figure in brackets.

The Potato Board have a guaranteed payout for surplus potatoes grown on contract.

Payments for surplus potatoes are to be determined on the basis of the F.A.Q. proportion held in pits or sheds at the end of the season. It should be remembered that considerable loss through shrinkage will have taken place by this time.

Seed prices fluctuated widely and no reliable information regarding these is usually available until the crop has been lifted.

The Potato Board levy will be payable on both table and seed potatoes, excepting certified seed carrying the official certification tag of the Department of Agriculture and not exceeding a maximum certification grading size of 6.5 oz, and uncertified seed where the largest tubers are under 4½ oz. in weight. Levy is $1.80 per short ton as from 1 March 1968.

Hay

The important features of hay are:
(i) quality
(ii) points of delivery
(iii) supply and demand

Hay is bulky and costly to transport hence there is little movement of it outside local districts, except in times of shortage.

Lucerne hay sells for 40 cents to 70 cents per bale depending on quality, and bale size.

Meadow hay similarly sells for from 30 cents to 40 cents per bale. Increasing use is made of ryegrass straw which sells for 10 cents to 20 cents per bale.

Small Seeds

The best general reference for these crops is

Small Seed in Farm Management - H.E. Garrett

Ryegrasses and Clovers are usually taken as crops from first and second year pasture areas sown with the crop in mind though some specialist crops are grown. Cocksfoot and Timothy are normally grown as specialist seed areas.

WORK CAPACITY OF FARM MACHINERY AND IMPLEMENTS

(a) Cultivation
(b) Harvesting

(a) Acreage covered by cultivation implements in a given time depends on:

1. size of implement
2. size of traction unit
3. nature of country - general steepness of the contour
4. type and condition of soil - compare light, stony, heavy and clay soils. In wet or dry condition
5. work of the implement - plg. initial work - to harrowing seed bed
6. general organisation - keeping the tractor going by working in shifts; proximity of fuel dumps,
7. breakage and general skill of operator. An experienced man knows the speed at which he gets maximum use out of the implement,
8. extent to which other work is combined, such as going around the sheep,
9. size and shape of paddock

(b) Harvesting machinery. Time depends on:

1. bulk of the crop - heavy or light yields
2. type of crop - wheat or peas, or clovers etc.
3. condition of crop - ease of threshing - lodged oats or ryegrass,
4. weather - hot, dry, vs. damp and cool,
5. month of harvest - late February or March cooler and shorter days, slow-up harvest,
6. previous treatment of crop - windrowing - peas, ryegrass, oats cocksfoot;
   mown with binder or mower - e.g. ryegrass, oats.

Has paddock been rolled or is it still cloddy? e.g.
wheat and peas.

(a) Implements - medium land - 25 - 30 H.P. Tractor

Implements	Hours per Acre
Skim-plough 3F	1
Deep plough 3F	1.33
Single f. swamp plough	4
Double f. semi-swamp plough	2
Grubber 13 tyne	.33
Harrow med. 5 leaf	.2
Harrows heavy 3 leaf Drummond	.33
Tandem discs 7-a-side (8 feet)	.4
Roller 9' Cambridge	.33
Drill 15 Coulter	.4
Mower 6' Lucerne	.5
Mower 6' pasture or clover	.66
Side rake 2 swaths 12'	.33
Baling (engine function)	.33
Topdressing	.25
Buckrake - Lucerne	1.75
Meadow	2. 5

(b) Harvesting

Wheat	6' 500 - 600 bus/day	2 ac/hour
	8' 800 - 1000 bus/day	$2\frac{1}{2}$ ac/hour
	10' 1200 - 1500 bus/day	3 ac/hour
Barley	10% slower	
Peas	1 - 2 ac/hr - depending on size of header and whether windrowed or not	
Ryegrasses	1 - 2 ac/hr	
Clovers	$\frac{3}{4}$ - $1\frac{1}{2}$ ac/hr	

Adjustment to cultivation hours

Heavy land	25 - 33 1/3% up
Stony land	10 - 30 % up
Undulating to steep	10 - 50 % depending on contour

Additional Hours for feeding out, tractor use at lambing. fencing, plus running to and from paddocks.

Example of Working Out Tractor Hours

Cultivation and Harvesting on medium land

Rotation 30 ac O.G. ---- peas --- wheat-barley ---- G.F. S.F. N.G. - ryegrass - W/C - pasture (90 acres)

30 ac O.G. - Peas

deep plg.	1.33
roll	.33
t+ disc 2X	.08
grub 3X	1.00
harrow 2X	.04
roll 2X	.66
drill	.04
roll	.33
harrow	.02
	5.45 hr/ac
=	165 total

30 ac Peas - Wh.

t. disc 2X	.08
deep plg.	1.33
grub 3X	1.00
drill	.04
roll	.33
harrow	.02
	4.1 hr/ac
=	120 total

30 ac Wh - Barley

t. dixc 2X	.08
deep plg.	1.33
grub	.66
harrow 2X	.04
roll 2X	.66
drill	.04
harrow	.02
	4.45 hr/ac
total =	135

Harvest mow 20 hours
heading 15 hours heading 12 hours heading 14 hours

30 ac Barley-Greenfeed S/Fallow N.G.

grub	1.00
roll	.33
drill	.04
plough	
October	1.33
grub 4X	1.33
harrow 4X	.08
roll 4X	1.33
drill	.04
roll	.33

7.25 hours/acre = 220 total

Harvesting

60 acres Mowing ryegrass White clover .66	40 hours
30 acres Heading ryegrass 1½ acres/hour	20 hours
30 acres Heading white clover 1 acre/hour	30 hours

Hay Mowing

10 acres Lucerne 3X mown at 1.5/acre	15 hours
Carting in bales	15 hours

Feeding Out

1 hour/day 100 days	100 hours

Summary

Cultivation plus 5% to and fro 640 + 30	670 hours
Harvesting peas 35 hours, Wheat 12 hours, Barley 14 hours, Small seeds 90 hours	150 hours
Haymaking and carting bales	40 hours
Other - feeding out and sundry jobs	150 hours
Total	1010 hours
say	1000 hours

Pasture topdressing and baling by contract.
Header costs worked out separately: - 110 hours

SECTION 2

REVENUE DATA

1. MEAT (a) sheep

Locally Consumed Lamb and Mutton

There is a considerable volume of sales from farm to wholesale meat buyers direct, the main sales such as Addington and Burnside still set the market in the South Island. The weekly stock report is the best guide to the current situation.

Export Lamb and Mutton

Meat which is exported is graded by the New Zealand Meat Producers Board. The various grades are paid for by means of a meat schedule, details of which are set out below.

As regards lambs, ewes and wethers the payout is based on a separate assessment for meat and another for pelt and wool payment. These schedules are subject to alteration without notice. In the case of meat, prices may be altered to make allowance for any one or a combination of the following:-

1. Changes in meat prices due to supply and demand at Smithfield.
2. Changes in price for by-products, and
3. Chanes in killing charges.

If the meat and pelt schedule remains relatively stable throughout the season for lambs then, other things being equal there should be an increase in return per head due to the increased wool pull later in the season.

In Canterbury many freezing ewes are sold "on the hoof" in the owner's yards.

The following schedule prices were quoted by Borthwicks, at 27 January 1969.

Lambs		Ewes		Wethers	
1st Quality		1st Quality	Per lb	1st Quality	Per lb
Up to 28 lbs	14.2 cents	Under 48 lbs	4.0	Under 48lbs	6.0
29/36 "	13.8 cents	49/56 "	3.25	49/56 "	4.7
37/42 "	12.0 cents	57/64 "	1.75	57/64 "	3.3
0/42 "	11.3 cents	65/72 "	.75	65/72 "	2.4
		73/80 "	.50	73/80 "	1.0
		0/80 "	.25	0/80 "	.25
Omega		0/Fat	.25	0/Fat	.25
U/28 lbs	12.5 cents				
29/36 lbs	12.0 cents	F.A.Q.		F.A.Q.	
		Under 48 lbs	4.0	Under 48lbs	5.5
F.A.Q.		0/48 "	3.25	49/56 "	4.2
				0/56 "	2.8
Up to 28 lbs	13.3 cents				
29/36 "	12.9 cents				
0/36 "	12.1 cents	Canners	2.75	Canners	2.75
		Choppers	.75	Choppers	.75
Alpha	10.7				

Skin Payments

Woolly Lambs

1½ lbs	121	cents/head
1⅝ lbs	124	cents/head
1¾ lbs	128	cents/head
1⅞ lbs	131	cents/head
2 lbs	135	cents/head
2⅛ lbs	139	cents/head
2¼ lbs	142	cents/head
2⅜ lbs	146	cents/head
2½ lbs	149	cents/head
2⅝ lbs	153	cents/head
2¾ lbs	157	cents/head
2⅞ lbs	160	cents/head
3 lbs	164	cents/head
3⅛ lbs	167	cents/head
3¼ lbs	171	cents/head
3⅜ lbs	174	cents/head
3½ lbs	178	cents/head

less 20 cents/head for seedy pelts.

Ewes

½ lb	107	cents/head
⅝ lb	109	cents/head
¾ lb	112	cents/head
⅞ lb	114	cents/head
1 lb	117	cents/head
1⅛ lb	119	cents/head
1¼ lb	122	cents/head
1⅜ lb	125	cents/head
1½ lb	128	cents/head
1⅝ lb	130	cents/head
1¾ lb	133	cents/head
1⅞ lb	136	cents/head
2 lb	139	cents/head
2⅛ lb	142	cents/head
2¼ lb	146	cents/head
2⅜ lb	149	cents/head
2½ lb	153	cents/head
2⅝ lb	157	cents/head
2¾ lb	161	cents/head
2⅞ lb	164	cents/head
3 lb	168	cents/head

Seedy wool - a deduction will be made.

In forecast budgeting the following may be used as a reasonable guide for export meats:

Lamb	Prime 32 lbs	13.0	per lb + wool allowances
	Seconds	12.0	per lb + wool allowances
Ewes	Under 56 lbs	3.5	per lb + wool allowances
	over 56 lbs	1.25	per lb + wool allowances
Wethers	Under 56 lbs		per lb + wool allowances
	over 56 lbs		per lb + wool allowances

Lamb Pelts

Prices for sound pelts in late December 1968 were $12.50 - $13.00 per dozen.

For average receipts budget on $1.00 per pelt.

(b) Cattle

The following Canterbury schedule was in operation at 16th December 1968.

		361/720 lbs	0/720 lbs
G.A.Q. Ox	1.	$18.25/100 lbs	$17.25/100 lbs
	2.	$17.00	$16.00
	3.	$15.75	$14.75
F.A.Q. Ox		$18.00	$17.00
		U/560 lbs	O/560 lbs
G.A.Q. Heifer	1.	$18.25/100 lbs	$16.75/100 lbs
	2.	$17.00	$15.50
	3.	$15.75	$14.25
F.A.Q. Heifer		$18.00	$16.50
		U/600lbs	O/600 lbs
G.A.Q. Cow	1.	$15.50/100 lbs	$14.00/100 lbs
	2.	$14.00	$12.25
F.A.Q. Cow		$17.00	$15.50
Boner Cow, Ox & Heifer	1.	$17.00	
	2.	$16.00	
Overfat Cow, Ox, & Heifer		$12.00	
		U/375 lbs	0/375 lbs
Boner Bull		$17.00/100 lbs	1.$21.00/100 lbs 2.$20.00

Addington market prices for fat cattle for local consumption during December 1968 were as follows:-

Prime steers (550 - 650 lbs)	$105.00	-	$125.00
Prime heifers (450 - 500 lbs)	$ 75.00	-	$ 90.00
Prime cows (550 - 650 lbs)	$ 90.00	-	$100.00
Runners (veal)	$ 50.00	-	$ 75.00
Suckers (veal)	$ 30.00	-	$ 50.00
Bull Beef	$135.00	-	$220.00

The "Press" reports of the Addington Market should be followed regularly and account taken of seasonal variations in price in making budgetary estimate.

Forecasting of beef export schedule prices is very difficult owing to fluctuations in supply in the United Kingdom which affect the schedule here. The above schedule should form a general guide.

(c) PIGS

(i) The Addington market supplies the local trade. Addington market prices in December 1968 were as follows:-

Light Porkers	$14.80	-	$16.30
Medium Porkers	$17.30	-	$19.30
Heavy Porkers	$19.40	-	$21.00
Light Baconers	$21.40	-	$24.10
Medium and heavy Baconers	$24.50	-	$30.50
Choppers	$20.50	-	$33.25

These prices are subject to seasonal variation so up-to-date newspaper reports should be consulted when budgeting.

(ii) The following schedule gives the prices per lb, paid by Canterbury Freezing Companies, to farmers for pigs sold direct to the Freezing works. This schedule is effective from 23/12/68.

PORKERS	60/100 lbs	Prime Exportable	21 cents per lb
		Second Quality	18 cents per lb
		Unexportable Prime	19 cents per lb
		Unexportable Seconds & Mutilated	16 cents per lb
		Condemned	5 cents per lb
BACONERS	101/110lbs	Prime Exportable	23.5 cents per lb
		Second Quality	17 cents per lb
		Unexportable Prime	22.5 cents per lb
		Unexportable Seconds	17 cents per lb
		Condemned & mutilated	5 cents per lb
	111/140lbs	Prime 1	23.5 cents per lb
		Prime 2	20.5 cents per lb
		Second Quality	17 cents per lb
		Unexportable Prime	20.5 cents per lb
		Unexportable Seconds & Mutilated	17 cents per lb
		Condemned	5 cents per lb
	141/160lbs	will be paid as 140 lbs	
	161/180lbs	Prime Exportable	11 cents per lb
		Second Quality	9 cents per lb
		Unexportable Prime	9 cents per lb
		Unexportable Seconds & Mutilated	9 cents per lb
		Condemned	2 cents per lb
CHOPPERS		All Weights	8 cents per lb
		Condemned	2 cents per lb
	Boars	Condemned	NO VALUE

Deductions Insurance 15c per pig, Pig Council Levy 10 cents per Pig. Transport charges as for nearest Works.

2. WOOL

The following were the Average Gross Prices for the Christchurch sale of January 1st and 17th 1969. These can be used in budget work, although reference should be made to up-to-date wool sales and market reports.

Count Ranges	Av. Price per lb in Cents
60/64's Merino	55 cents
58/60's Halfbred	48 cents
50/56's Corriedale	43 cents
48/50's Fine Crossbred	36 cents
46/50's Medium crossbred	33 cents
46/48's Strong crossbred	28 cents

Note that these prices are applicable to clips of average quality in each of the count ranges. Where exceptionally good or poor wool is clipped an adjustment of 1 cent to 2 cents per lb could be made.

In following the wool sale reports from time to time in the press, the quotations for the Average grade of fleece wool in each count range should be noted particularly as this figure is an excellent guide to the overall average price per lb including oddments for the majority of clips.

(3.) DAIRY PRODUCE

(a) Cream to Butter Factories

The payout is based on the guaranteed price (at present 26.59 c per lb) but actual payouts to suppliers will depend upon factory efficiency and transport costs of cream to factories. Advance payouts below the guaranteed price are made each month and the final payment or bonus is made in August of each year. There are three grades of cream: Finest, First and Second. The majority of the cream produced should grade Finest.

The Tai Tapu Dairy Factory for the 1968/69 season is paying the following davance payment:-

Finest	26.59 cents
First	26.09 cents
Second	24.09 cents

(b) Whole Milk to Butter Factories

In many North Island districts this is common practice. The dairy company sends round tankers to collect all the milk from the farms daily. Advantages are:

i. More efficient separation of the cream
ii. Utilization of the Skim Milk to make Skim Milk Powder
iii. For the farmer the problem of keeping pigs to utilize large quantities of skim milk are eliminated.

Payouts vary with the level of factory efficiency and transport costs but usually they are about $3\frac{1}{2}$ cents per lb ahead of those factories which receive only cream. This return comes from the skim milk powder and compensates the farmer in some measure for the pig profits he can no longer obtain.

(c) Whole Milk to Cheese Factories

Is paid for on a butterfat basis. The guaranteed price is 5 cents per lb of butterfat more than for butter factories. Actual payments will depend on the efficiency of factories and returns from the usage of by-products for the manufacture of such items as whey butter and sugar of milk.

(d) Whole Milk to Casein, Milk Powder and Condensed Milk Factories

Usually based on cheese but actual payouts will depend on available contracts to sell overseas. Most pay out more than cheese.

(e) Whole Milk for Town Supply (refer to page for additional data)

The national milk prices have been fixed at the following rate for the 1968/69 season:

22.37 cents first, plus 1.67 cents per gallon quota milk finest.
minus 5 cents per gallon quota milk second grade.

A production incentive allowance equivalent to $1\frac{1}{2}$ cents per gallon on quota finest and first grade milk is paid out all the year round for South Island districts. In practice this allowance is used to stimulate autumn and winter production, i.e. from March until August and additional $3\frac{1}{2}$ cents per gallon is paid for all milk of Finest and First Grades received at quota prices. The Canterbury Dairy Farmers Limited seasonal payments for quota milk during the 1968/69 season are as follows:

CANTERBURY DAIRY FARMERS LIMITED

PRICES 1968/69

		Quota Milk			Surplus Milk		
Month	Full Price Paid For	Finest	First	Second	Finest	First	Second
September	Quota plus 5%	29.28	27.61	24.28	11.13	9.46	6.13
October	Quota plus 5%	18.45	16.78	13.45	11.13	9.46	6.13
November	Quota plus 5%	18.45	16.78	13.45	11.13	9.46	6.13
December	Quota plus 5%	18.45	16.78	13.45	11.13	9.46	6.13
January	Quota plus 5%	18.45	16.78	13.45	11.13	9.46	6.13
February	Quota plus 15%	20.15	18.48	15.15	15.535	13.865	10.535
March	Quota plus 15%	20.15	18.48	15.15	15.535	13.865	10.535
April	Quota + 20% of quota	29.28	27.61	24.28	11.13	9.46	6.13
May	Quota + 20% of quota	29.28	27.61	24.28	11.13	9.46	6.13
June	Quota + 25% of quota	29.28	27.61	24.28	11.13	9.46	6.13
July	Quota + 25% of quota	29.28	27.61	24.28	11.13	9.46	6.13
August	Quota + 20% of quota	29.28	27.61	24.28	11.13	9.46	6.13

* = estimated basis of payment

Less levy of 0.21 c. per gallon

NOTE

(a) Finest grade - is milk which passes a 6 hour reductase test and contains not less than 3.5% butterfat.
(b) First grade - is milk which passes a 4 hour reductase test but fails to pass the 6 hour test and/or contains not less than 3.25%
(c) Second grade- is milk which fails to pass a 4 hour reductase test or contains less than 3.25% butterfat.
(d) A premium of 0.42c per gallon is payable on full price milk from herds which are fee of brncellosis.
(e) A penalty of 0.83c per gallon is applied to milk testing 8.35% S.N.F. and below, and 1.66c per gallon to milk testing 8.20% S.N.F. below.

The penalty is applied on a monthly basis on the average of three solids-not-fat tests per month - on in each 10 day period.

Throughout New Zealand about 96% of the milk supplied is graded Finest and less than 0.5% is graded second. Chilled milk premiums are:

.7c per gallon quota milk of chilled and held: or
.4c per gallon of chilled only.

(f) Bobby Calf Realizations

In Canterbury the majority of calves are of the Friesian breed. Prices paid by the Bobby Calf pools are based on a price per pound less cartage so that average local returns are above the national average, and above what we could expect if Jerseys were the predominant breed on a farm. Budget figures may be adopted are:

Friesian type calves	$7.50 per head
Jersey type calves	$6.00 per head

However many Friesian - type calves are now sold privately for beef production at about $9.00 per head.

4. DAIRY CATTLE

The dairy cattle offered at Addington are not of very good quality by and large, except for some lines of yearling heifers so that the Addington market prices are not a good guide to dairy cattle values. Any clearing sales of dairy farms which occur during the autumn are on such occasions. In Canterbury with a distinct emphasis on town supply dairying there is a considerable premium paid for autumn calving cows and heifers over the prices paid for spring calving cows and heifers. Price ranges are difficult to pinpoint and the following can be considered a guide only.

Good quality Friesian x heifers (autumn calvers)	$100 - 140
Good quality Friesian x cows (autumn calvers)	100 - 120
Good quality Friesian x heifers (12-18 mths old)	50 - 60
Cull boner Dairy Cows (aged) of Friesian x type	60 - 70

Spring calving cows and heifers $20 - 30 per head below the comparab comparable autumn calving figure.

5. BREEDING & STORE STOCK

The main saleyards and ewe and ram fairs are the markets for breeding and store stock.

The following are an analysis of prices paid for these main classes of stock at the beginning of the year and should be used only as a guide. Any marked changes as the year progresses will be seen by noting all sale reports.

(a) Sheep

2T Ewes	Good Romney	to	Ewe Hoggets	Good Romney	to
	Average Romeny	to		Average Romney	to
	Others	to		Good fine wool	to
	Good fine wool	to		Average fine "	to
	Average wool	to	Store Lambs	Ave. Dn. X	to
	Others	to		Ave. Rom. Wthr	to
4yr Old Ewes	Good fine wool	to		Ave. ½bred wthr	to
	Average wool	to	Rams (flock)	(Ave. Quality)	
	Others	to		Southdown	
5yr Old Ewes	Good Romney	to		Dorset Down	
	Average	to			
	Others	to		Romney	
	Good fine wool	to		Corriedale	
	Average wool	to		Halfbred	
	Others	to		Border Leicester	

(b) Beef Cattle

The following prices are guides only - consult press reports for up to date information.

Weaners

Steer calves $40 - $60
Heifer calves $30 - $50

1½ + years

Store Steers $75 - $85
Store Heifers $55 - $65

2½ + years

Forward Store Steers $90 - 100
Heifers $50 - $60

Breeding Cows	$80 - 100
Beef Bulls	$200 - $350

(c) Pigs Prices ruling December 1968.

Small Weaners	$4.00 - $6.10
Best Weaners	$6.30 - $8.20
Slips	$7.80 - $9.10
Small and Medium Stores	$9.10 - $11.30
Large Stores	$14.30

Maiden Sows (Gilts) $25 - 35 (in pigs) $25 - 35
Older Sows (in pig) $20 - 35
Boars (8 - 12 mths) $30.00

6 CROPS

(a) Wheat (South Island Prices for 1968/69 season)

Hilgendorf	$1.65 per bushel O.T.C.S.S.E.)	but = 15c withheld
Arawa	$1.43 per bushel O.T.C.S.S.E.)	to indemnify wheat
All other varieties	$1.45 per bushel O.T.C.S.S.E.)	board against possible marketing loss from 1968/69 harvest. This will be refunded in full to grower if no loss arises from disposal of 1968/69 harvest

Storage increments for what held on farms after hvst,

After April 30th	.05	After May 31st	8c
After June 30th	.10	After July 31st	12c
After August 31st	.14	September onwards	15c

South of Wakouaiti increments are delayed one month.

(b) Barley

Preferred Malting varieties 95 cents contract per bushel
Feed Barleys 85 cents contract per bushel
(If property over 40 miles from Christchurch feed barleys contract price is 82.5c per bushel.)

Seed Barleys. Certified Mother (from Pedigree) 5c above malting
Certified Commercial (from Mother) 5c above malting

(c) Oats (Prices for A grade milling or G.A.Q. quality O.T.C.S.S.E.)

Gartons and other white oats	(contract) 80 cents	(free) 70-75 cents
Algerians		(free) 75 cents

(d) Peas

		1968-69
(i)	Partridge (contract)	$1.50
	(free)	1.80
(ii)	Garden (contract) Greenfeast	1.60
	" Onward	1.90
	" Wm. Massey	1.90
	" Victory Freezer	1.60
	" White Prolific	1.40

(iii) Green Peas for Freezing 2 cents to 4 cents per lb depending on stage of maturity at harvest as indicated by tendermeter.

(e) Linseed

Budget at $70.00 per ton with bonuses for above average quality.

(f) Lupins

$1.30 per bushel

(g) Ryecorn

$1.25 per bushel to farmer

(h) Main Crop Potatoes

Prices of table potatoes vary considerably from year to year depending on the areas planted and yields obtained per acre. Prices have been stabilized to some extent by the introduction of a guaranteed payout scheme by the Potato Board for all surplus potatoes grown on contract to them. The guaranteed basic prices per ton in the South Island are as follows:

Varieties		
Sutton, King Edward & Red King	$32	per "short" ton
Chippewa	$32	per "short" ton
Other Varieties	$30	per "short" ton

Seed potato prices vary from year to year with changes in supply and demand but usually range from $40 - 60 per ton. Potato growing is a specialist occupation and considerable care is needed in attempting to budget forward because of the wide fluctuations in price from year to year.

Potato Board Levy: $1.10 per ton

(i) A number of other specialist crops such as Brassicas for seed are sown in different areas for which price figures have not been obtained. Students will usually get the necessary information for budgeting when on a farm visits to these areas.

7. SMALL SEEDS

The grain and produce reports published at intervals in the "Press" give up to date prices and should be retained as additional information on this subject as the year proceeds. Prices to the farmer on a machine dressed basis vary with the purity and germination of the line of seed and the following can be considered to be a general guide only.

(a) Grass Seeds

Manawa Ryegrass

Certified 2nd generation	$1.35
Certified 1st generation	1.40
Basic	1.45

Paroa

Certified 2nd generation	1.70
Certified 1st generation	1.90
Basic	2.00

Ruanui Ryegrass

Certified 2nd generation + P.P.	2.25
Certified 1st generation	2.30
Basic	2.30

Ariki Ryegrass

Certified 2nd generation	1.90
Mother 1st generation	1.85
Basic	2.00

Grasslands Apanui Coxfoot

Certified 1st generation	0.30
Basic	0.30

Kahu Timothy

Certified 2nd generation	0.30
Certified 1st generation	0.25
Basic	0.27

(b) Clover Seeds

Huia Clover

Certified 2nd generation + P.P.	28 cents
Certified 1st generation	30 cents
Basic	30 cents

Turoa Montgomery Red clover

Certified 2nd generation	0.28
Certified 1st generation	0.30
Basic	0.32

Hamua Broad Red Clover

Certified 2nd generation	0.18
Certified 1st generation	0.19
Basic	0.20

Subterranean Clover

Uncertified	0.18

Tall Fescue 0.20

Prairie Grass 0.08

Wairau Lucerne

Uncertified	0.28
Mother 2nd generation	0.31
Basic	0.32

SECTION 3

FARM EXPENDITURE DATA

1. WAGES

a) Musterers, Packers and Drovers Award - refer Fed. Farmers handbook

Shearers and Shed Hands Award - refer Fed. Farmers handbook

Dairy Farm and Farm and Station Wages - refer Fed. Farmers handbook

Minimum Rates	Dairy Farm	Farm and Station
Under 17 years	$9.05	$6.825 p.w. & found
Between 17 and 18 years	11.325	8.775
Between 18 and 19 years	13.775	10.775
Between 19 and 20 years	16.10	12.85
Between 20 and 21 years	18.325	15.10
Over 21 years	20.55	17.416

If not found an extra $4.25 is payable.
Board allowance is $3.25 for labour occupying a farm house.
Allowance for house is $1.00 per week.
Include in wages to cost of keep of single men at $3.25 per week, over and above wages paid.

Casual

Harvestors 53 cents an hour with rations

Other workers

	per hour		per day	
	Found	Not Found	Found	Not Found
Over 18 years	45½ cents	53 cents	$3.63	$4.25
Under 18 years	31 cents	39 cents	$2.48	$3.10

(b) Shearing Wages

(a) Machines

(1) Main shearing of ewes and lambs

Range: $13.00 to $16.00 per 100 shorn
Majority: $15.00 per 100 shorn
Pre-lamb: $1.00 per 100 higher
Snow-comb: + additional $1 p. 100

(2) Lamb shearing only

Some gangs have different rates for ewes and lambs, lambs being $1.00 per 100 below the ewe shearing rate.

(b) Blades

(1) Contract gangs

(i) Ranges from $26.00 to $36.00 per 100 depending on size of gang, whether a classer included or not, and whether all rations in or various items supplied by the farmers.
(ii) Formula, (all in) 2. (shearing rate) + 15%

(2) Shearers only

Range: $16.00 to $18.00 per 100

Full Crutch: Machines

Range: $4.50 to $6.00 per 100
Majority: $5

Light Crutch:

Range: $3.50 to $4.50 per 100
Majority: $3.50 tup crutch only
$4.00 tup crutch and eye-wig

Full Lamb Crutch:

Range: $3.50 to $5.00 per 100

Woolshed Hands:

(1) Fleeces

$1.00 to $1.25 per hour

(2) Classers

"Ringer" rate or average daily rate per shearer
e.g. At 200 sheep per day at $15.00 per 100
Classer paid $30.00 per day

2. ANIMAL HEALTH

(a) Dog registration fees and Hydatid control fees $2.10

(b) Dip

Diazanon 25% conc.	$19.53 gal.	450 sheep - $0.043 per sheep
Arsenic + derris	$1.85 per 10 lb	100 sheep - $0.018 sheep not blowfly protection

Supreme (24 wk.fly protection) $16.83

(c) Contract Sheep and Cattle dipping

(i) SHEEP DIPPING

(a) Plunge: Application cost, materials, extra.

1 to 300	8 cents per sheep
300 to 3050	3½ cents per sheep
3050 to 6050	3 cents per sheep
6050 and over	2½ cents per sheep

(b) Mobile Shower:

(1) $32 per 1,000 plus materials
(2) 5c to 6c per sheep, including materials, depending on length of wool.

(ii) CATTLE DIPPING

(a) Mobile shower: Materials extra

15 cents to 25 cents per head per dipping

(b) Gun or hand wand

$4.00 per hour per gun, materials extra.

(a) Mobile shower: Materials extra
15 cents to 25 cents per head per dipping

(b) Gun or hand wand
$4.00 per hour per gun, materials extra.

(d) Drenches

Drench	Size of Pack	Cost	Dose rate	Cost/head
Selenium	450 cc bottle	$1.50	Sheep & lambs 1 cc	0.33 cents
Thibenzole	1 gallon	$21.60	Lambs 11 cc sheep 19cc	lambs 5.26 cents sheep 9.07 cents
	5 gallons	$100.80	(4520 cc in	lambs 4.91 sheep 8.47
	10 gallons	$131.40	1 gallon)	lambs 3.20 sheep 5.52
Nilverm	$\frac{5}{8}$ gallon	$11.90	Lambs 15 cc	lambs 6.33 sheep 8.44
	1 gallon	$15.57	Sheep 20 cc	lambs 5.17 sheep 6.88
	$2\frac{1}{2}$ gallons	$35.64		lambs 4.73 sheep 6.30
	5 gallons	$66.87		lambs 4.44 sheep 5.91
Loxon	1 gallon	$14.99	Lambs 14cc Sheep 21 cc	lambs 4.64 sheep 6.97
	5 gallons	$70.83		lambs 3.45 sheep 6.58
Bovizole	1 pint	$5.76	Calves 55 cc	57.6
	3 pints	$16.56		53.4
	1 gallon	$41.40		50.48

(e) Vaccines

Vaccine	Size of Pack	Cost	Dose rate	Cost/head
Black Disease	100 cc	.54	Sheep & lambs	1.08
			Cattle 5 cc	2.07
Blackleg	100 cc	$ 1.76	Sheep 2 cc	3.52
Malignant Odema	200 cc	3.51	Cattle 2 cc	3.51
	500 cc	8.46		3.38
Malignant Odema	100 cc	1.22	Sheep & lambs 2cc	2.44
Multine 5	100 cc	3.51	Sheep & lambs 2cc	7.02
	200 cc	6.84		6.84
	500 cc	16.20		6.48
	1000 cc	31.86		6.37
Pulpy Kidney	50 cc	.59	Sheep + lambs 2cc	2.36
	100 cc	1.22		2.44
	200 cc	2.25		2.25
	500 cc	5.13		2.05
	1000 cc	9.72		1.94

Vaccine	Size of Pack	Cost	Dose rate	Cost/head
Pulpy Kidney				
Blackleg	100 cc	1.94	Sheep + lambs 2cc	3.88
	200 cc	3.87		3.87
	500 cc	9.36		3.74
Pulpy Kidney				
Malignant Odema	100 cc	2 oz	Sheep + lambs 2cc	4.06
Scabine	150 dose	1.13	-	0.07
Triple	100 cc	2.79	Sheep + lambs 2 cc	5.58
	200 cc	5.58		5.58
	500 cc	13.50		5.40
	1000 cc	25.65		5.13

f. Pencillin

Sheep	100,000	$0.99	doz.	Cows	25,000	$0.78
	500,000	1.98	doz.		50,000	$0.90
	1,500,000	2.07	½ doz.		100,000	$1.15

Disinfectants

Stericide	$2.50	per gal.
Zoltas	$2.95	per gal.
Kerol	$3.60	per gal.
Camfosa	$3.75	per gal.
Detol	$4.30	per gal.
Formalin	$37.00	for 44 gal. drum
Bluestone	$17.00	per 1 cwt

Footrotting costs estimate $2. per 100

Docking rings $2.70 per packet of 500.

Veterinary Club Membership

$8.00 plus $3.50 per visit, $2 per re-visit - plus drugs (Canty)

Tb. Testing

Bi-annual testing - nil fee to farmer under normal circumstances.

Dairy Farm - total animal health expenses approximately

$2.00 per cow (factory supply)
$2.50 per cow (town milk supply)

3. BREEDING EXPENSES

(a) Artificial breeding.

Group service $1.50 - $2.25 per cow in calf for specific spring and winter mating seasons. (2 return services). Frozen semeh available all year round at $2.00 plus 9 cents per mile per insemination. Nominated bull $2.50 per insemination above basic fee or group service.

(b) Herd Testing

(S.I. Herd Improvement Assn) Monthly testing, $5.00 herd fee plus $7.60 per cow. Minimum fee $37.00 for 20 cows. Bi-monthly testing $3.00 herd fee plus .10 per cow. Minimum fee $25, for 20 cents. For 2 tests per season (Nov/Jan) Herd fee is $2.00 + 55 cents/ cow. Minimum fee is $13 for 20 cows.

4. CASH CROPPING EXPENSES

(a) Contracting rates

(i) Contract Heading

Wheat and Barley -	when crop runs over 30 bu/ac 13½c per bu.
Oats	when crop runs over 36 bu/ac 11½c per bu.
Peas and Lupins	when crop runs over 38 bu/ac 17½c per bu.

Where heading is carried out on hill country bushel rates are increased by 20%.

Browntop, Clover and linseed, - hourly rates.

Grass seed - hourly rates or $4.00 per acre where crop runs under 30 bushel/acre. Over 30 bushels 12½c per bushel.

Hourly rates - minimum charges: Basis $1.10 per foot per hour.

Under 8 ft header	$8.80	per hour
10 ft header	$11.00	
12 ft header	$13.20	

Self propelled header $10 to $17 per hour

Where peas, browntop, linseed, white clover and grass seed are direct headed an extra $1.00 per acre is charged.

Chaff Cutting:	Oatsheaf	22½ c	per bag for full gang (6 men)
	Straw Chaff	25 c	per bag for full gang
	Oaten hay	40 c	per bag for full gang
	Lucerne	45 c	per bag for full gang
	Basic rate	15 c	per bag for full cutter and 1 man
			2½c per additional man

Wheat Levies: See Fed. Farmer's Hand book.
Total levies amount to 69 cents per 50 bushels.

(ii) Contract Mowing

$3.25 per hour, less 25 cents large paddocks: average rate 2 hours per acre.

(iii) Contract Windrowing

$2.00 per acre windrowing only
$2.50 per acre including conditioning
Minimum rate $8.00 per hour (applies in small paddocks and in heavy crops).

(iv) Potato	digging	$2.00 to $3.50 per hour: average rate ½ ac/hr
	planting	$5.00 per hour, two men two rows: average rate ½ to 1 acre per hour.

(b) Sacks (ex store)

The farmer pays	37.5 cents	for 48" sacks and 32 c for 23" sacks but
gets a rebate of	25 cents	for 48" sacks and 22 c for 23" sacks hence
Charge to farmer	12.5"	for 48" sacks and 10 c for 23" sacks

Double brushed sacks (2nd hand)

Farmer pays	31 c	for 48" sacks and 28 c for 23" sacks but gets
rebate of	20 c	for 48" sacks and 17 c for 23" sacks, hence
Charge to farmer	11c	for 48" sacks and 11c for 23" sacks.

Potato sacks - no rebate is paid. Usually second hand sacks are bought for 28 cents each.

The sacks containing the seeds bought in, would be kept for the seconds off the header and the seed held onto by the farmer for future sowings, so discount them in working out a budget.

A bale holds 250 x 23" sacks.

Capacities:

Ryegrass Perennial	7 bu. M.D. in 48" sacks, 5 bu. F.D.
H.I. Italian	6 bu. M.D. in 48" sacks, 4 bu. F.D.
Cocksfoot	100 lb M.D. in 48" sacks, 60 lb
Phalaris	140 lb in double 23" sacks, M.D. 120lb single sacks F.D.
Timothy	140 lb in double 23" sacks, M.D. 100 lb single sacks F.D.
Clovers & Lucerne	160 lb in double 23" sacks, M.D. 120 lb single sacks F.D.
Wheat	3 bu. F.D. in 23" sacks
Barley	3½ bu. F.D. in 23" sacks
Oats	3½ bu. F.D. in 23" sacks
Field Peas	3 bu. F.D. in 23" sacks
Garden Peas	2½ bu. F.D. in 23" sacks
Lupins	3 bu. F.D. in 23" sacks
Linseed	1½ cwt
Potatoes	160 lb sack, 14 sacks per ton, 48" sacks.

Quantities of sacks required by farmer

The farmer requires sacks to transport his F.D. product to the store and having been Machine Dressed there, a heavier weight can be put into the bag. As indicated above, clovers, phalaris and timothy are delivered in single sacks but when Machine Dressed are put into double sacks.

Working on a M.D. basis the approximate number of sacks required by a farmer are as follows:

Ryegrass	1 sack per 3¾ bushels M.D.
Clovers	1 sack per 80 lb M.D.

Twine

Seaming - 96 thread per hank - 82½ per 2 hanks

(c) Machine Dressing and Certification as at 1.2.68

Certification charges:

Entry fee. Only payable on potatoes, the charge being $2.00 per acre. Fields for certification must be entered before 20th November.

Machine dressing certificate charges covering sealing all lines of certified seeds are:

Ryegrass all varieties	3 c bush M.D.
Cocksfoot, Timothy, Phalaris	2½c per 10 lb M.D.
Browntop, Clovers, Lucerne	1 c per 3 lb M.D.
Wheat, Barley, Oats	1 c per bush. M.D. seed lines

Purity and germination Certificate $2. per line, plus 10% when business is transacted through the merchant.

Seed certified under laboratory test - Ryegrass 2 c per bu
White Clover 1c per 4lb

Grain and Seed

(except Milling Wheat and Malting Barley)

Consolidated Dressing and Store Handling Charges

(Receiving and delivering, sampling, weighing, dressing, brushing of sacks and disposal of offal).

Ryegrass - Perennial, Italian & Short Rotation	per 100 lbs	$1.00
- each additional time through	per 100 lbs	0.50
Cocksfoot	per 100 lbs	3.10
Clovers - White, red, lucerne Alsike etc.	per 100 lbs	2.70
Wheat and Ryecorn	per 100 lbs	0.40
Barley	per 100 lbs	0.45
Field Peas and Lupins	per 100 lbs	0.45
Garden Peas and lupins	per 100 lbs	0.60
Oats - Dressing and Clipping	per 100 lbs	0.55
Linseed	per 100 lbs	0.80
Grass seed - (Fine) - Browntop, Fescue, Dogstail & Timothy	per 100 lbs	2.70

Turnips, Chou Moellier, Kale and Mustard	per 100 lbs	$2.70
Rape	per 100 lbs	2.00
Prairie Grass	per 100 lbs	4.00
Yarrow	per 100 lbs	5.25

Separating White Clover and Ryegrass	per sack	0.35
Separating Mixed Oats and Ryegrass	per sack	0.35
Ceresan or Agrosan Dusting	per bu.	0.12
Orthocide or Spergon Treating	per bu.	0.25
Blending Clovers & Blending Grass	per sack	0.60

Box Hire - $2.50

A box is deemed to hold 13 saxks of grasses.
A box is deemed to hold 18 sacks of grain.

Farmers usually get only their small seeds dressed, and in ordinary circumstances seed goes once through the dressing machines.

Field dressed ryegrass dress out approx.	25% offal leaving 75% M.D.
Field dressed clovers dress out approx.	33% offal, leaving 2/3 M.D.
Field dressed timothy dressed out approx.	25% offal, leaving 75% M.D.
Field dressed cocksfoot dress out approx.	25-33% offal, leaving 75-67% M.D.

In budgeting it is usual to discuss M.D. yields, thus for ease of working, the following examples have been calculated to show the relationship between actual costs incurred in dressing and what the cost is per M.D. product.

(a) Ryegrass

Twenty acres yield 30bu/acre M.D. = 600 bu. M.D.
Actual quantity sent in for dressing was 800 bu (600 bu. is 75% of 800 bushels).
Consolidated charge, 16,000 at $1.00 % $160
= 26.6 cents bu. M.D.
Certification charges - 3c bushel M.D. 3
29.6 cents bu. M.D.
For ease of working use 30 cents per bushel M.D.

(b) White Clover

Twenty acres yielding 200 lb/acre M.D. = 4,000 lb M.D.
Actual quantity sent in for dressing was 6,000 lb F.D.
(M.D. = 2/3rds F.D.) No. of bags F.D. at 120 lb/bag = 50 bags

Consolidated charge 6,000 lbs at $2.70% = $162

Certification charge 4,000 lbs at 1c per 3lb 13.33
$175.33

Total dressing and certification = 4.4 c per lb M.D.

Portable Seed Cleaners

Wheat, Barley, Oats	15 c per bushel in. Dressing and Pickling 16½ c bu. PLUS cost of pickle.
Peas and Lupins	15 c bushel in.
Grass seed	15 c bushel in.
Clover, White and Red	2½ c per lb in.
Cocksfoot, Dogstail and other seed	at $4.00 per hour
Cocksfoot	2½ c per lb in.

5. CULTIVATION CONTRACTS

(a) Tracklaying machines plus implement

Basic rates:

(i) D2 equivalent $4.50 to $5.00 per hour
(ii) D4 equivalent $6.00 to $6.50 per hour

Average costs:

Ploughing	$4 to 4.50 per acre
Giant discing	$5 to 6 per acre
Chisel ploughing	$4 to 4.50 per acre
Discing	$1.75 to $2 per acre
Grubbing	$2. to $2.50 per acre
Rolling	$3. to $4.50 per acre
Drilling	$1.75 to $2. per acre

(b) Wheel tractors

Basic rates: $3.50 to $4.00 per hour (50 to 60 H.P. tractor)

Average costs:

Ploughing	$2.80 per acre
Discing	1.50 per acre
Grubbing	1.00 per acre
Grubbing & harrowing	1.25 per acre
Rolling (Cambridge)	70 per acre
Rolling & harrowing	85 per acre
Harrowing	60 per acre
Drilling	1.20 per acre
Drilling & harrowing	1.75 per acre
Heavy rolling	1.00 per acre
Over drilling (disc coulter)	2.00 per acre

Note:
Small or awkward paddocks at basic per hour rate.

6. DAIRY SHED EXPENSES

Cow covers	$6.00 each lined; $3.60 unlined
Inflations	$1.85 doz. changed 5 - 6 sets year or 1 set moulded cost $4.20/doz
Milk rubbers	0.27 foot changed 1 set year
Air rubbers	0.175 foot changed ½ set year
Claw rubbers	1.025 doz changed 2 sets year
Hose rings	1.70 doz changed 1/3 set year
Galvanised buckets	1.775
Milk buckets	3.30 calf buckets $1.175
Oil - separator	1.20 gal. plant. Teat salve $1.35/4lb tin
Detergents - Alkali	0.216 acid $0.45 lb
Sterilizers - H.T.H.	.40 lb

Brooms 14 inch $1.05 Separator brush set $7.00
Costs per cow milked - factory supply $2.00
- town milk supply $2.50

7. ELECTRICITY

Costs per cow milked - Factory supply shed (milking and water heater) $2.00 per cow
- Town milk supply shed (milking and water heater) $2.80 per cow
- Owners household is excluded
- Power to outbuildings, whares, motors would total $25 - 50 per year.

8. FEED

(a) Haybaling contract rates

10 cents bale or 11 cents bale if sledged.

Cartage of haybales ex paddock to barn allow 8 cents bale
Baling twine 20 lb per ball $3.40 per ball
200 bales per ball = 1.7 cents per bale
Round bales use binder twine - 120 bales per ball -
Binder twine 19 cents per lb; for 5 lb ball 95 cents per ball
= 0.74 cents per bale

(b) Forage Harvesting

1 Forage harvester, 1 tractor and 1 man $3.55 per hour.

(c) Stock foods

Calf starter ration	$4.70	per	125 lb	bag
Calf Grower ration	$4.20	per	125 lb	bag
Calf Vitamin meal	$4.90	per	125 lb	bag

Moose Nuts

(i) Pure Linseed nut $87.00 per ton (2000 lbs)
(ii) Linseed Balanced nut $80.60 per ton (2000 lbs)

Peerless sheep nuts	$82 per ton
Molactrate block	$2.15 per 50 lb block
Denkavit	$7.08 for 50 lb bag.
Molasses	$3.75 per 5 gallons
Agricultural salt	$2.35 per cwt
Rock Salt	$3.50 per 112 lb bag.
Barley meal	$59.25 per ton $4.60 per 150 lb bag
Bran	$3.45 per 120 lb bag

9. FREIGHT AND CARTAGE

For transport charges see Federated Farmers' Handbook.
Carting haybales from paddock to stack 7 cents per bale.

Railway charges, obtainable out of Railways Department Tariff book and Classification book.

Stock Capacities of Railway Wagons

J. wagon	60 - 65 fat sheep; 75 fat lambs; 70 - 80 store sheep; 90 - 100 store lambs

JC wagon plus 1/3 J S wagon is double a J.
H wagon 8 fat steers; 12 store cattle
HC wagon plus 1/3 HT wagon is double an H

Classified Rates are

H and J wagons	Class M
HC + JC wagons	M + 1/3
S + T wagons	M double rate

Produce

Fertilizers, Grain and Potatoes and Class E
Ryegrass is Class E plus 50%
Clovers are Class D
Wool is Class H

Rates In $ Miles	E per ton	E + 25% per ton	E + 25% per ton	H per bale	M per wagon
30	2.10	2.70	3.10	0.58	6.60
40	2.45	3.10	3.70	0.81	8.20
50	2.80	3.50	4.20	1.01	9.75
60	3.15	3.95	4.75	1.15	10.50
70	3.50	4.40	5.25	1.27	12.00
80	3.70	4.65	5.55	1.36	12.60
90	3.85	4.80	5.80	1.46	14.70
100	4.00	5.00	6.00	1.55	16.80
110	4.20	5.25	6.30	1.63	18.90
120	4.40	5.50	6.60	1.725	21.00
130	4.55	5.70	6.85	1.81	23.10

10. FERTILISERS

(a) Price list of main lines of K.P. Fertiliser ex Hornby Works September 1968.

N.P.K.				Farmers Nett Price O.T. Hornby per Ton BULK
0	9	0	Superphosphate	23.90
0	8	0	Aerial Super	23.55
0	7	0	Serpentine Super	23.05
0	7	0	Reverted Super	21.95
7	6	0	Ammonis Super 2/1	32.90
5	7	0	Ammonia Super 3/1	30.90
0	9	0	Boron Super	26.90
0	7	0	Boron Reverted Super	25.00
0	9	0	Cobalt Super	28.35
0	9	0	Copper Super	33.50
0	9	0	Granulated D.D.T. Super	34.55
0	5	14	Lucerne Mixture	40.30
0	9	0	Molybdate Super	27.35

	0	6	14	30% Potash Super	29.35
	0	8	0	Sulphur Super (200 lbs)	28.50
	0	7	0	Sulphur Super (400 lbs)	32.10
	4	5	10	Potato Fertiliser	32.35
	2	6	0	Turnip and Rape Fertiliser	26.55
	2	6	0	Boron Turnip and Rape Fertiliser	28.55
	0	9	0	Weedophos M.C.P.A. Super (Standard)	35.30
	0	9	0	Weedophos M.C.P.A. Super (Extra Strength)	40.60
	0	9	0	Weedophos 2, 4-D Super (Standard)	34.85
	0	9	0	Weedophos 2, 4-D Super (Extra Strength)	39.95
	0	0	48	Potassium Chloride (Muriate of Potash)	38.75
	21	0	0	Ammonium Sulphate (Sulphate of Ammonia)	47.35
*	18	20	0	Di-Ammonium Phosphate	103.70
*	46	0	0	Urea	85.90

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* Available Bags Only

Bagged fertiliser is supplied at $3.30 per ton above bulk prices. Bagged ammonium sulphate and bagged potassium chloride are $4.15 above Bulk prices.

All prices are subject to alteration without notice.

Spreading: Contract rate 50 cents per acre plus 10 cents per acre on worked ground.

(b) Aerial Topdressing and oversowing

Basic application rate $60 per flying hour.

(1) Super application: minimum rates:-

(i) $6.50 per ton when topdressing near the airstrip.

(ii) Approximately $8.50 per ton when topdressing 1000 ft above the airstrip.

N.B. If less than 12 tons to be sown, Min. rate $8 per ton.

(2) Lime Application:

$3.00 to $4.50 per ton at application rate of 1 ton per acre.

(3) D.D.R. prills:

Application rate 35c to 50c per acre depending on acreage.

(4) Oversowing with small seeds

(i) If seeds mixed with super and super load not reduced, no charge.
(ii) Seed sown alone: Charged by the hour at $70 per hour.

11 LIME

Cost at works $2.00 per ton

(a) Spreading: 50 c per ac at ½ ton/ac on pasture
60 c per ac at 1 ton/ac on pasture
80 c per ac at 2 ton/ac on pasture
an extra 10 c per ac. on cultivated ground. An extra 10-20c per acre on undulating country.

Together with rail and cartage, total costs spread on paddocks are from $5.00 to $6.00 per ton.

Aerial spreading - good acreage going $4.00 per ton.

(b) Lime Transport Assistance

Lime transport assistance applies only to lime applied for the first time on previously unlimed lime responsive soils.

Assistance available is

(i) by rail

1st 15 miles nil
next 100 miles 75% of rail charge

(ii) by road after rail

1st 3 miles nil
next 7 miles 3.4 cents per ton per mile
additional mileage 5 cents per ton per mile

(iii) by road direct from limeworks in area served by rail

1st 3 miles nil
next 27 miles 3.4 cents per ton per mile
additional mileage nil

(iv) by road direct from limeworks in area not served by rail

1st 3 miles nil
next 17 miles 3.4 cents per ton per mile
additional mileage 5 cents per ton per mile

12. SEEDS ex merchants' stores (subject to alteration)

(a) Wheat

Aotea Uncertified	$2.208 nett.	Hilgendorf $2.475 nett
2nd generation	$2.275 nett	2.542 nett
1st generation	$2.308 nett	2.575 nett

Arawa less 17c bushel

Treating 12c per bushel
Sacks at $0.25 each = 8 cents bushel. Total extra cost - $0.20 bushel.

(b) Barley Uncertified $1.60 nett plus treating $0.15 bushel
2nd generation $1.68 nett sacks 1.68 bushel
1st generation $1.73 "Total"extras= 0.24 bushel

(c) Oats All varieties quoted at $1.35 - $1.50

(d) Lupins Borre and Bitter blue $1.80 bushel nett

(e) Ryecorn Both C.R.D. and N.A.I.B. cost about $1.60 bushel nett

(f) Maize $3.50 bushel (feed)

(g) Peas Contract price plus $0.35 bushel plus treating 0.25 bushel and sacks 0.275 bushel. Total extra 0.875 bushel.

(h) Freezing Peas $5.00 bushel

(I) Small Seeds Retail prices from merchants are $0.10 to 0.15 per lb and $0.30 to 0.40 per bushel more than the price paid to the farmer.

Root Seeds	Rape	0.30 per lb	Chou moellier	$0.45
	Turnip	0.45 per lb	Fodder Beet -	
	Swede	0.45 per lb	unsegmented	0.75 per lb
			segmented	0.85 per lb

(j) Aerial application

Variable according to quantity and distance ranging from 20 cents to 50 cents per acre.

(k) Seed Requirements

With any seed that is not grown on contract it is usual to buy a quarter of the seed requirement, the other $\frac{3}{4}$ is retained from the crop that has been harvested that season; except for Algerian oats where for best germination usually 2 year old seed is sown. If a farmer is retaining a high frade on the Certification scale then he buys all of his grass seed. If using his own seed it will be treated.

13. STOCK SELLING CHARGES

(a) Yard Fees

Addington

Sheep	4c
Fat Cattle	50c
Store Cattle	30c
Vealers	20c
Dairy Cows	40c

Amberley

Sheep	5c

Addington

Calves	25c
Bulls	$1.00c
Porkers	10c
Baconers	10c
Store pigs	5c

Coalgate

Sheep shareholders	7c
Non Shareholders	8c
Rams	25c
Calves Shareholders	70c
Non Shareholders	80c
Cattle Shareholders	80c

Culverden

Sheep	5c
Rams	10c
Horses	25c
Dogs	10c

Non Shareholders	90c
Horses	25c
Pigs	10c
Dogs	25c

Hawarden		Little River	
Sheep	8c	Sheep	5c
		Cattle	25c
		Rams	10c

Sheffield		Oxford	
Sheep	5c	Sheep	5c
Rams	12c	Rams	12c

(b) Addington Trucking Charges

Unloading or loading at Rail siding:
Cattle, sheep and pigs $0.45 per truck
Unloading sheep from Road Transport

1. Lots up to 65 head $0.017 per head - max. of 0.45
2. Lots over 65 head 0.45 per 65 plus 1 c per head
3. Cattle 0.45 per truck

Loading into Road Transport

1. Lots up to 50 head 1 c per head - max. of 0.53
2. Lots over 50 but not over 100 $0.525 plus 1 c per head over 50 - maximum of $0.90
3. Lots over 100 $0.90 plus $0.075 per 100 in excess of 100

(c) Commissions on Stock sold through a Stock and Station agent

Saleyards		Clearing Sales	
Sheep	3%	Sheep	3¾%
Fat Cattle	3%	Store Cattle	3¾%
Store Cattle	3%	Pigs	5 %
Vealers	5%	Dairy Cows	5 %

Saleyards		Clearing Sales	
Dairy Cattle	5%	Implements & Sundry	5%
Pigs	3¾%	Furniture	10%
Horses (Bloodstock)	6%	Special Sales	
Horses	5%	Stud Cattle	5%

14. SHEARING EXPENSES

(a) Shed Expenses

Wool packs ex store $1.50 each
Assess number used at 3 per 1,000 lb wool.
Twine 40 threads per hank. 65 c per hank = 7 c per bale
Glue 8 oz tin 30 c

Eartags.	$3.60 per 100 + 60 c if stamped.
Emery paper - fine	45 c per sheet
- coarse	45 c per sheet
Shearing plant running expenses - Electricity	$10.00
	Full motors 20 cents/hour

(b) Wool Charges

Receiving, weighing, cataloguing etc	.42 c/lb
Reclassing and/or Binning of Fleece	.84 c/lb
Reclassing and/or Binning of oddments	1.36 c/lb
Wool Board Levy	. 7 c/lb
Straight bales of dags (no sorting)	.75 c/bale
Grouping or Interlotting Fee	.80 c/bale
Commission	. 2% gross proceeds
Sheep's back insurance (optional)	15.04 c per $100.00 gross proceeds
Government Earthquake Insurance	1.03 c per $100 gross proceeds
Chatham Island Insurance	.50 c per bale

15. TREES

Planting (per 100)

Pinus	$3.00 2 year trees
Larch)	
Thuya)	
Picarta)	
Arizonica)	
Benthami)	$5.00 to $6.00 2 - 3 year trees
Poplars)	
Oregons)	
Cedar)	

16. WEED & PESTS CONTROL

(a) Weed Sprays

Spray	Cost/gal	Rates of Appl'n/ac	Cost/acre
MCPA	$5.34	1½ - 4 pints	$1.00 to $2.67
24D (Ester)	5.10	1 - 4 pints	.64 to $2.55
MCPB	7.80	3 - 4 pints	2.92 to $3.90
24DB (Lucerne)	9.60	2½ pints	3.00
DNBP (peas)	9.18	3 - 4 pints	3.75 to $4.59
Tok E-25 (brassicas	8.00	5 - 7 pints	5.00 to $7.00
245 T Low Volitile	9.86	1 gal. 2ft gorse	9.86
TCA 90	0.44lb	20 -40 lbs	8.80 to $17.06
Dalapon	0.45lb	5 - 15 lbs	2.25 to $ 6.75
Barban (wild oats)	20.00	2 - 3 pints	5.00 to $ 7.50

Tordon 50 D	17.55
Tordon 75 T	25.65
Paraquat	25.00

(b) Pests

Spray	Cost/gal	Application	Cost/acre
Rogor 40	$23.73	12 - 16 fl oz	$1.80 to 2.40
Malathion 50%	$11.00	1 - 2 pints	$1.37 to 2.74
Lindane 20%	$ 8.59	2 pints (brassicas Protn)	$2.14
D.D.T. emulsion 20%	$4.72	2 pints	$1.18

(c) Hormone Weedkiller and Insecticide Application

(a) Aerial application - spraying

(1) Fixed wing 'planes (materials extra)

(i) Crops and pasture - Weedkillers

Application rate 10 galls approx. water per acre.
less than 40 acres $2.00 per acre
Over 40 acres $1.75 to 1.50 per acre

- Insecticides

Application rate when materials -
Very toxic, up to $3.00 per acre
Less toxic, down to $2.00 per acre

(ii) Gorse and broom

Application rates $3.00 to $4.00 per acre at 24 gallons of water per acre.

(2) Helicopters - Gorse and broom spraying

(a) Application (flying time) approx. $10.50 per acre.

Plus 245T. on gorse or broom approx $7.00 per acre
Tordon on broom approx $24.00 per acre
Tordon on gorse approx $32.00 per acre

(b) Ground application (materials extra)

Spraying -

(1) Boom: Range 90c to 1.50 per acre depending on quantity of water applied.

(i) Hormone weed killers 90c to $1.00 per acre
(ii) Insecticides (depending on quantity of water and poison risk to ope operator) $1.25 to 1.50 per acre

(2) Gun or hand wand: $4 to $5 per hour plus $1 per hour per extra gun.

Granules and prills - $1 per acre

17. REPAIRS AND MAINTENANCE

The best way to estimate the likely expenditure on repairs and Maintenance for all non-motorised machinery, buildings, fences, sheep and cattle yeards, tracks and culverts, is to obtain a figure direct from the farmer. However, if this is not possible then the following rates can be used as a rough guide, only.

Dwelling		$2\frac{1}{2}$%
Farm buildings		$2\frac{1}{2}$%
Piggeries		5%
Water supply	up to	5% depending on type of water
Implements and Plant		$7\frac{1}{2}$% - 10% depending on use
Roads, tracks and culverts		5% - 10% depending on locality
Yards and dip		5%

Fences - Sheep 20 c to 25 c per chain - (for the years expenditure
Dairy 10 c to 15 c per chain - on repairs and maintenance)

18. VEHICLE OR MOTOR EXPENSES

(a) Fuel and Oil, and Grease

Light trucks and cars	:	allow 3 cents/mile
Heavy Trucks	:	allow 5 cents/mile
Wheel tractors Petrol	:	allow 45 cents/hour
Diesel	:	allow 35 cents/hour
Crawler tractors	:	allow 35 cents/hour
Baler	:	allow 35 cents/hour
Header - Tractor drawn	:	allow 35 cents/hour
- Auto	:	allow 45 cents/hour

(b) Repairs and Maintenance

Once again the best way to estimate the likely expenditure on Repairs and Maintenance for all motorised plant is to obtain a figure direct from the farmer. However if this is not possible then the following can be used as a rough guide:

Light trucks and Cars	2 cents/mile
Wheel tractors (Petrol + Diesel)	15 cents/hour
Crawler tractors	35 cents/hour
Mobile Plant	10% of value

(c) Registration Fees.

Cars $17.95 per year.
Trucks $18.10 per year.
(including heavy trucks)
Wheel tractors $9.15 per year
Trailers $6.45 per year
Motor bikes $11.55

In addition to registration Fees farmers with heavy trucks must pay Heavy Traffic Licence fees as follows:

Laden weight	Fee
2½ tons	$10.67
5 tons	$36.00
7½ tons	$84.00
10 tons	$169.33
15 tons	$318.67
20 tons	$458.67
25 tons	$598.67
30 tons	$738.67

(d) Fuels

83 octane Petrol 35.17 cents per gallon, less 18.6 cents per gallon for agricultural use

. . net price to farmers is 16.5 cents per gallon

93 octane Petrol 38.17 cents per gallon, less 18.6 cents per gallon for agricultural use

. . net price to farmers is 19.5 cents per gallon

Diesoline 15.8 cents per gallon

Multi-service oil (for Diesel and Petrol engines):
$1.24 per gallon, in 44 gallon drums.

Grease (Multi-service) 23 cents per lb

(e) Delivery of bulk fuels

Free delivery up to approximately 10 miles from Christchurch
½ c. gallon up to approximately 20 miles from Christchurch
1 c. gallon up to approximately 30 miles from Christchurch

19. ADMINISTRATION EXPENSES

(a) Accountancy

Accountants have a scale of fees based on input of time taken in compiling returns and services required by their clients.

Some of the reasons why fees vary considerably are:

(i) The adequacy of the presentation of farm records to the accountant by the farmer

(ii) The form of ownership - individual, company, or partnership, and if there is a trust account involved also.

(iii) The amount of information the farmer wants: advice on management, financial advice, trial balances, etc.

(iv) The degreee of intensification of the farming operations.

(v) The amount of administration undertaken by the accountant. Budgeting control, receiver of all income, and payee of all expenditure for the farmer.

The fees definitely bear no relationship to the farmer's capital or net taxable balance, or turnover.

For Lincoln College budgeting purposes assess fees based on the total capital involved, the degree of intensification of the management, and the form of ownership.

$30 fee based on Total Capital of $20,000; increase fee $1.00 for every $1,000 of capital.

For ownership as a Company or as a Partnership use a base figure of $40.

For intensively farmed units, orchards, market gardens, poultry, intensive cropping, use a base figure of $40, for individual ownership.

(b) General Administration

Legal expenses incurred by an established farmer are negligible and can be discounted in budgeting.

Banking charges, stationery and postage vary with size of unit and intensive nature of the management, from $10 to $20.

(c) Telephone

(i) Rentals

Continuous Exchange							
	Indivual	2	3	4	5	6-10	Party
Base rate up to 2 mls	$44.00	$38	$37	$36	$34	$30	
Plus mileage from exchange	$16 per mile					$2.80	$2.00

(ii) Toll Calls

Charges in connection with farming activities vary with services available at the local centre, and degree of management involved. Charges range from $30.00 to $50.00 p.a.

(iii) Mail

Rural mail delivery charges are $2.00 per year
Post Office box rentals are variable but average $5.00 per year.

20. STANDING CHARGES

(a) Insurances

Insurance against loss by fire and accident is not only a matter of prudence but in many cases it is compulsory. One of the implied covenants in a memorandum of mortgage is that the mortgagor shall insure and keep insured all buildings on the mortgaged land. The Worker's Compensation Amendment Act, 1943 makes it obligatory on the part of the employer to insure against his liability under the principal Act unless he is able to satisfy the Compensation court that he has adequate financial resources to meet all probable claims.

In the case of fire insurance premiums vary according to the nature of the risk and the value of the buildings or assets insured, etc. Accident premiums vary with the nature of the work, etc. The following figures are from insurance companies as at 1.1.69.

(i) Buildings (Tarrif Company's) per $100 of value

Dwellings	Brick IR	$0.092	Wood	$0.25
Outbuildings	Brick - concrete or earth floor		$0.100	
	Wood - concrete or earth floor		$0.229	

(ii) Plant: per $100 of value

Fire only -	Farm machinery	$0.35
	Harvesting with power	0.525
	Harvesting without power	0.250
	Tractors	0.525

Comprehensive - Harvesting: self-propelled $7 for first $400 plus $0.75 per $100
Harvesting: tractor-drawn-above less 15%
Tractor: $8.40 for first $400 plus $1 per $200 thereafter.

A rebate of 1/3 no claim bonuses are paid on tractor policies.

All these premiums plus $0.05 per $100 Earthquake and War Risk.

(iii) Crops: - per $100 of value

Fire only -	Crop	Hay
4 weeks	$0.50	
6 weeks	$0.575	
2 months	$0.650	
3 months	$0.775	
6 months	$1.050	
12 months	-	$0.25 flat rate.

(iv) Employer's Liability - based on wages paid

General farm work	$1.30	per	$100
Shearing etc.	0.75	per	$100
Tree felling	6.00	per	$100
Harvesting and hay making	1.30	per	$100

(v) Personal Accident (owner's personal cover)

Details vary, but a typical cover would be as follows:
Death $4,000. Total disablement from accident $30 per week.
Total disablement from disease $30 per week. Premium $34.50 p.a.

(vi) Public Liability - covers damage caused by stock, farm vehicles or fire but excludes registered motor vehicles.

Cover $2,000 - Premium $2.25 Cover $10,000 - Premium $3.75
Cover $4,000 - Premium $2.70 Cover $20,000 - Premium $6.00
Cover $5,000 - Premium $3.00 Cover $30,000 - Premium $13.25

(vii) Wool

From sheep's back to wool store - $0.15 per $100 gross value plus earthquake $0.004 per $100 gross value for 3 months.

Exclude personal and life insurance.

(b) Land Tax see Taxation notes. Section 5.

(c) Rates

The main classes of rates are as follows:

(i) General County rates for the costs involved in administering the County.

(ii) Special rates for ad hoc bodies, e.g. Catchment, Drainage, Boards.

(iii) Special rates for repayment of loans, raised by any local body.

(iv) Water supply charges where stock water is supplied by any local body e.g. water races. County water schemes.

(v) Pest Destruction Board rates where the farm is in a board district.

All counties rate on either the Capital or Unimproved Values. Water and pest destruction rates may be assessed on either per acre, Capital value or unimproved value basis.

For budgeting purposes ask the farmer for the total rates.

(d) Interest

Interest rates vary with personal element, risks, and security offered. They also fluctuate with the Bank's interest charges. At present:

Flat Mortage interest rates are $6\frac{1}{2}$ - 7%
Table Mortgage interest rates are 6 - 7%
Bank overdraft interest rates are 7 - 8%
Stock and Station Agents interest rates are $6\frac{1}{2}$ - 8%

Currents accounts interest:

For assessment of Working Capital see page 6, when budgeting use 7% on total Working Capital.

(e) Rent - charge actual rental paid by the farmer.

Rents on Crown Renewable Leases are $5\frac{1}{2}$% of Crown Rental Value, on leases passed since 1956. Prior to this rents were $4\frac{1}{2}$% of C.R.V. Rentals carry a $\frac{1}{2}$% rebate for prompt payment, thus to calculate C.R.V. gross rentals must be ascertained.

Short term leases - rents usually assessed 5% of Capital Value.

21. DEVELOPMENT EXPENDITURE

(a) Buildings

Dwellings	-	cost between $6.50 and $8.00 per sq ft.
Hay barns	-	vary from $20 - $30 per 100 bales capacity
Implement sheds	-	vary from $1.00 to $2.00 per sq. ft.
Garages	-	$2.00 - $3.00 per sq. ft.
Woolsheds	-	vary from $2.00 to $3.00 per sq. ft.

(b) Fencing

Wire - Plain galvanised	$ per cwt
No 6 gauge	9.88
No 7 gauge	9.43
No 8 gauge	9.43
No 9 gauge	9.51
No 10 gauge	9.56
No 12 gauge	9.73
No 14 gauge	10.08
No 12½ gauge hi-tensile	11.43

Wire - barbed	
3" x 12½ gauge	11.65
6" x 12½ gauge	11.65

Wire - Lacing, 12 14 & 16 gauge	$ per coil
7 lb coils	1.10
14 lb coils	2.15
28 lb coils	3.80

Standards - Flat Wrought Iron	
4' 6" x 1¼" x 5/16"	55 cents each
5' x 1¼" x 5/16"	62 cents each
5' 6" x 1¼" x 5/16"	69 cents each

Standards - Y section (undipped)	
4' 6"	54 cents each
5'	57 cents each
5' 6"	61 cents each
6'	64 cents each

Waratahs	
5'	54 cents each
5' 6"	58 cents each
6'	62 cents each

H Irons	
5' x 1½" x ⅝"	67 cents each

Mild Steel Tees

5' x 1½" x 3/16"	$1.06 each
5' 6" x 1¾" x ¼"	$1.50 each
6' 6" x 2½" x 5/16"	$3.45 each

Posts - Concrete Intermediates

9'	$1.80 each
8'	$1.65 each
6'	$1.25 each

Posts - Concrete Strainers

6' x 5" x 5"	$2.40 each
6' 6" x 6" x 6"	$3.00 each
7' x 6" x 6"	$3.20 each
7' x 7" x 7"	$4.00 each
7' x 8" x 8"	$4.90 each
8' x 8" x 8"	$5.60 each

Posts - Tanolised Intermediates

(a) Natural Round

5' 6" x 4" - 5"	72 cents each
6' x 4" - 5"	75 cents each

(b) ½ round

6' x 5½" face	62 cents each
6' x 6½" face	67 cents each

(c) ¼ round

6'	42 cents each

Posts - Tanolised Strairers

7' x 6"	$1.80 each
7' x 7"	$2.00 each
8' x 6' - 7"	$2.00 each
8' x 7" - 8"	$2.45 each
8' x 8" - 9"	$3.00 each

Stays

(a) Concrete	8'	$1.40 each
	10'	$1.75 each
(b) Tanolised	9' x 3½"	$1.05 each

Stay blocks

(a) Concrete	16" x 10"	35 cents each
	18" x 12"	45 cents each
(b) Tanolised	2'	17 cents each

Staples

(a) Plain	8,9,10 & 11 gauge	13 cents/lb
	12 gauge	14 cents/lb
	14 gauge	15 cents/lb
(b) Barbed	8 gauge	16 cents/lb
	9,10 gauge	17 cents/lb
(c) Contrete Post Staples		15 cents/lb

Battens - Tanolised

2" x 1½" x 3' 4"	$10.00/100
2" x 1½" x 3' 6"	$10.25/100
2" x 1½" x 3' 10"	$12.00/100

Stakes - Tanolised

3" x 2" x 4' 6"	$28.00/100
3" x 2" x 5'	$30.75/100

Gates - Cyclone

12'	$13.50 each
14'	$14.80 each

Boundary Fences - Cyclone

(a) Tightlock Boundary (45 ton Hi tensile)	Normal height	Stays	Per chain $
Tight 8	30" 8 line	12"	4.39
Tight Hog 30"	30" 8 line	6"	5.01
(b) Twinlock Boundary (45 ton Hi tensile)			
	36" 7 line	12"	3.98
	34" 8 line	9"	4.65
	28" 6 line	12"	3.48
	28" 6 line	6"	4.41

(c) Twinlock Boundary (80ton Hi tensile)	Normal height	Stays	Per Chain $
	36" 7 line	12"	3.48
	34" 8 line	9"	4.02
	28" 6 line	12"	3.10
	28" 6 line	6"	3.96

Contract Fencing rate.

(a) On Canterbury Plains

(1) 2 posts to the chain, 5 standards between posts.
5 plain and 2 barbed wire: $3.50 to $4.00 per chain.
Varies according to number of strainers and gateways.

(2) 4 posts, 4 droppers, 5 plain and 2 barbs: $6.00 per chain.

(b) On hills and downs

(1) Rough going:

(i) 2 posts, 4 to 5 standards, 5 plain, 2 barbs: $6.00 per chain

(ii) 2 T-irons in place of posts: $4.00 per chain

(2) Good going:

(i) 2 posts, 4 to 5 standards, 5 plain 2 barbs: $4.50 per chain

(ii) 3 posts, Hurrican (boundary) netting, 1 barb wire, $4.00 per chain.

Contract Post Driving

$5.00 per hour, or within the range of 25 cents to 35 cents per post.

(c) Water Supply

Piping	½" Alkathene	Low Pressure $3.00 per 100.
		High Pressure $12.00 per 100
	¾" Alkathene	Low Pressure $6.00 per 100
		High Pressure $16.00 per 100
	1" Alkathene	Low Pressure $7.00 per 100
		High Pressure $21.00 per 100
	1¼" Alkathene	Low Pressure $9.50 per 100
	1½" Alkathene	Low Pressure $11.00 per 100
	2" Alkathene at ⅛" thick	Low Pressure $16.00 per 100
	2" Alkathene at 3/16" thick	low pressure $37.00 per 100

Concrete Water Troughs

200	gallon	round	$24.00
100	gallon	round	$16.50
70	gallon	round	$11.80
60	gallon	round	$11.80
40	gallon	round	$ 7.75

Concrete Tanks

2000	gallon	10'	high	$112	10'	stand	$124
1000	gallon	10'	high	$ 60	10'	stand	$ 92
800	gallon	10'	high	$ 56	10'	stand	$ 48
600	gallon	10'	high	$ 48	10'	stand	$ 48
400	gallon	10'	high	$ 44	10'	stand	$ 48

(d) Drainage Costs

Field Tiles	4	inch	$12 - 13	per	100 feet
	6	inch	$17 - 18	per	100 feet

Trenching (for Tiles)

Hydraulic back actors $5.50 per hour
Averagre rate of digging for 2' 6" deep trench 1 - 1½ chain per hour

. . Cost per chain $3.66 - $5.50

Open drains

Draglines 25 cents per cubic yard (add 15 cents per cubic yard if machine is on soft ground and working on mats.) Work on approx $7 per hour for a small dragline.

Hydraulic backactons Same as for Trenching, but rate of progress is faster - up to 2 chains per hour.

Well drilling Cost of pipe plus drilling plus screen at bottom of well:
6" pipes $7 - 8 per foot
8" pipes $10 - 11 per foot

Mole draining Rate of work approximately 1 acre per hour. Contract rates for wheel tractors $3 per hour, and for crawler tractors $6 per hour.

(e) Bulk Storage of Wheat - Cost of Storage Buildings

1. Storage in an Existing Shed

(a) By Cross-tying opposite walls with steel rods and installing a moisture barrier of polythene sheet in or on the concrete floor. Extent of modification depends on the construction - Cost - negligible to $0.05/bu.

(b) By installing plywood bins - depends on shed floor being moisture and vermin proof. Available in 20 to 30 ton sizes. Cost $0.10 per bu.

(c) Wire mesh lined with scrim. Made commercially in 20 ton size. Scrim must be replace annually. Cost $0.06 per bu.

2. New Dual Purpose Sheds

(a) Prefabricated - 45 x 20 x 12 ft stud and 6' gable. Steel implement shed. Erected by agents and fitted with eight 20 ton plywood bins on moisture proof concrete floor. Cost $0.375 per bushel.

(b) Large prefabricated 60 x 20 x 10ft. Steel framed, galvanised iron, on both interior and exterior surfaces. Moisture proof concrete floor, sliding door. Erected by agents. Capacity 250 tons. Cost $0.233 per bushel.

3. Single Purpose Storage

(a) Corrugated Steel Silo - imported at moment, thus carry duty. Are permanent, weather and vermin proof - but of little use if grain growing is discontinued.

Cost 2,000 bushel capacity - $0.30 per bu.
3,100 bushel capacity - $0.25 per bu.
3,700 bushel capacity - $0.25 per bu.

(b) Plywood bin on a sledge base. Same as mentioned before but on a sledge base.

Cost 20 ton bin with 17 oz canvas cover on wooden sledge base - approx. $140 or $0.175 per bushel.
30 ton bin - approximately $200 or $0.16 per bushel.

22. DEPRECIATION (refer Taxation notes Sec. 2.9 E)

Depreciation is the diminution in the value of an asset, caused by lapse of time despite maintenance charges being met. The amount to be written off is largely a matter of opinion, as it is difficult to assess the life of plant when it is purchased.

The normal depreciation rates allowed are:

Dwelling	$\frac{1}{4}$ of $2\frac{1}{2}$% (farm share)
Farm buildings	$2\frac{1}{2}$%
Plant and Machinery (excluding motor vehicles)	10% diminishing value (D.V.)
Motor vehicles - Headers Tractors, Balers, Trucks include all implements and machines drawn behind a tractor and driven by the tractor p.t.o.	20% D.V.
Motor car - if half used privately (should be included in $0.075 mile)	$\frac{1}{2}$ of 20% D.V.
Water supply	5%

23. WAGES OF MANAGEMENT

For Lincoln College purposes Wages of Management (W.O.M.) should be based on a married man's salary plus 1% of total farm capital

(T.F.C.) Use the following estimations for a married man's salary:

Town Milk Dairy	$1800
Factory Supply Dairy	$1700
Sheep and Mixed Cropping	$1600

SECTION 4

TAXATION

AN INTRODUCTION TO TAXATION

PRINCIPLES AND METHODS

January 1969, R.H.B. Tonkin.

Students must appreciate that the following notes give a far from complete coverage of this subject and that further reading is essential for a workable knowledge on the topic.

1. Introduction

1.1 Principles of Taxation in theory are:

1. Equality of sacrifice
2. Certainty of assessment and collection
3. Convenience of collection from taxpayer
4. Economy of operation in the tax system and
5. Maintain economic neutrality or not adversely effect the consumers' sovereignty.

1.2 Incidence of Taxation in New Zealand is:			1966-67 $M	%
A. Direct Taxes -	income tax,		664.412	67.1
	estate duty,	21.158		
	gift duty,	1.906		
	land tax	3.506	26.570	2.7
B. Indirect Taxes -				
	customs & excise	92.012		
	sales tax,	78.926		
	highways tax,	70.916		
	stamp duty,	9.578		
	beer duty,	34.734		
	racing duty	12.030		
	other	0.378	298.574	30.2

2. General Interpretation

2.1 Income

Arises from the persuit of gain from either capital or labour. It infers net income, or that after allowing deductions as limited by statute and within the confines of sound accounting principles. The Act does not define the word income but there is case law on the subject.

Once income is established and declared, it cannot be altered unless by express statutary authority.

The transfer or assignment of future income from one source for tax purposes must be for a period of no less than 7 years from the date which the income is to be applied, and it must be outside the control of the settler when so transferred for it not to be assessable in the income of the transferor. Section 105 of the 1954 Act.

2.2 Classes of Income

1. Assessable income - not exempt from income tax other than by special exemptions.
2. Exempt income - not subject to income tax.
3. Non assessable income - not liable for tax but is assessable, i.e. income which only effects the rate of tax.
4. Taxable income - residual of assessable income after special exemptions have been deducted.

2.3 Essential Elements of Income

1. It must be derived or come in, i.e. a gain on revenue, matched against costs,
2. it must be separate from capital,
3. it must not include the accretion or addition of capital,
4. a product of labour, capital or reward: a gift unless made compulsory is not income, nor is a return of a private expense e.g. travelling expenses,
5. not reduced by private expenses,
6. purpose of the transaction is to generate a gain,
7. contain both elements of conformity and regularity, and
8. expressed in terms of N.Z. money currency.

2.4 Assessable and Exempt Income

The difference between assessable and exempt income is that the latter is not taxable while assessable includes all other income. Care should be taken to distinguish between exempt and non assessable income. Non assessable income is not liable for tax but does effect the tax rate. It mainly concerns company taxation and dividends received.

2.5 Assessable Income include

1. Profits or gains from income including inventory valuations,
2. wages, salaries, bonuses, allowances, and gratuities,
3. personal gains accrued by a dealer, prize money won at A & P shows,
4. rent from leases or licences,
5. royalties, rents, annual payments received for water rights,
6. interest above $60, dividends received, annuities and pensions,
7. compensation (refer below), depreciation recovered on sale of asset, insurance claims on crops etc.,
8. refunds of income from wool retention or income equalisation deposits,
9. income from hire of stocks, grazing fees, stud fees, timber sales (apportional over year of sale and 4 subsequent years on application),
10. nominal value of farm produce consumed by the farmer,
11. * rental value of dwelling by shareholder/employee - farm dwelling assessment may be $\frac{3}{4}$ of (3% C.P. of building less depreciation, repairs and maintenance, and insurance,
12. livestock or produce gifted, transferred or exchanged, value is at market value unless made to farmers child, step child or grand child over 18, and
13. income from any other source.

11*. "Sharemilker" rental value of free house except where he owns the herd.

2.6 Compensation and Damages

The general rules in establishing whether or not this is assessable is in the following:

Does the compensation purport to make good a loss of trading profits or is it recompense for the deprivation of a capital asset? If income is not assessable then costs directly associated to the generation of that income are not deductable.

For example, compensation received by fruit growers for hail damage is based on restoration of revenue and is assessable income. Compensation for injury under the Workers' Compensation Act, 1956 is exempt from taxation.

2.7 Exempt Income

Common types are:

1. Gains of a capital nature. (Note - where a fram is sold within 5 years of purchase date any profit on the sale of land up to the amount of development expenditure allowed previously as a deduction will be treated as assessable income in the year of sale or spread back over the years in which the expenditure occurred).
2. War pensions.
3. Social Security benefits except for Universal Superannuation.
4. First $60 interest and building society dividends.

2.8 Deductions

Sections 110 and 111 of principal Act.

Expenditure which is deductable is that which is exclusively incurred in the production of assessable income or as expressly provided for in the Act.

2.9 Specific Items of Deductible Expenditure

A. - General

(a) Land Tax. (In land producing the assessable farm income).
(b) Legal expenses except those incurred in respect of the acquisition of a capital asset.
(c) Car Expenses (three quarters of car expenses - fuel - repairs and insurance, registration - where both car and truck used, the former is reduced to 50%).
(d) Interest and rent
(e) Rations. Where food and lodging provided for employees, an actual cost cannot be computed - $2.00 per week, per man allowable.
(f) Fire Damage - Where farm generally subject to dry summer conditions. Expenditure in repairing damage is deductible.

B. Development Work

Total Deductible Expenditure: can be spread over five years after the year of expenditure.

(1) eradication and extermination of pests, both animal and vegetable,
(2) clearing land of timber, stumps, scrub or undergrowth,
(3) destruction of weeds,
(4) preparation of land for farming, draining swamp,
(5) constructing access tracks or roads, dams, stopbanks, irrigation or stream diversion channels,
(6) preventing or combating erosion
(7) constructing airstrips, fences, sinking bores, etc., but not including troughs and pumps.

C. Farm Forestry

Deductible expenditure in the year of payment:-

(1) Loan interest plus costs over and above expenditure covered by the loan.
(2) Costs of maintaining and planting trees to provide shelter and including fencing costs.
(3) Repayments of the loan

D. Fertilizer and Lime

All this expendiutre is deductible but the taxpayer can elect to defer the deduction, or any part of it, for a period of up to 4 years from the year of expenditure.

E. Depreciation (Section 114 of principal Act.)

D.V. - deminishing value
C.P. - cost price

Bridges - wooden	2½%	C.P.	Glass houses - wooden	5%	C.P.
Other	2%	C.P.	metal	3%	C.P.
Buildings - wooden	2½%	C.P.	Pig styes - concrete	5%	C.P.
reinforced concrete	1%	C.P.	wooden	10%	C.P.
brick or stone	2%	C.P.	both	6%	C.P.
(Dwelling ¼ of C.P. farm expense)			Portable huts	10%	C.P.

Bulldozers, tractors, motor vehicles, hay balers, header harvesters 20% D.V.

Motor cars (a) with both car and truck - ½ of 20% D.V. farm expense,
(b) car only - ¾ of 20% D.V. farm expense

Chain saws	50% D.V.	Fences - electric	10% D.V.
Tractor Safety frames	100%	Dips - spray	10% D.V.
Concrete mixers	15% D.V.	Dams & Reservoirs	1% C.P.
Pipe lines - irrigation	10% D.V.	Grain silos	5% D.V.
		Windmills	10% D.V.
All other non-motorised plant and equipment			10% D.V.

Taxpayers are able to provide in their accounts whatever depreciation rates as are considered necessary, but those claimed for tax purposes will continue to be those laid down by the commissioner of Inland Revenue.

Special Depreciation

On plant and machinery purchased, excluding motor cars or station wagons, and on new farm buildings, or extensions, excluding homesteads but including employee accomodation -

(1) asset costing less than $2000 claim 20% C.P. in first year.
(2) asset costing between $2001 and $4000 claim 10% first year and 10% second year.
(3) asset costing over $4001 claim either
6%, 5%, 4%, 3%, 2%, in consecutive years, or
10%, 5%, 3%, 2%, in consecutive years.

2.10 General Information

For detailed notes on such topics as deductable expenditure, balance dates, provisional taxation, records to be kept, tax dairy, etc., refer to the Information Pamphlets, Farmers Tax Guide or other recommended references. Similar pamphlets on Special Exemptions and Depreciation Allowances, should also be obtained for fuller coverage omitted above.

Other tax saving incentives and livestock relief on sale are also discussed in detail in the Farmers Tax Guide pamphlet.

3. Methods of Assessment

3.1 Individual or Sole Traders

Basic Rates of Income Tax for Individuals:

	from 1st April, 1969
Up to $650 taxable balance	7.85 % tax
$651 to 1700 taxable balance	21.00 % tax
1701 to 2000 taxable balance	24.50 % tax
2001 to 2500 taxable balance	27.50 % tax
2501 to 3000 taxable balance	33.00 % tax
3001 to 3500 taxable balance	34.00 % tax
3501 to 4000 taxable balance	37.00% tax
4001 to 4500 taxable balance	40.00 % tax
4501 to 5000 taxable balance	43.00 % tax
5001 to 5500 taxable balance	45.00% tax
5501 to 6000 taxable balance	49.00 % tax
6001 to 6500 taxable balance	50.00 % tax
6501 to 7000 taxable balance	54.00 % tax
7001 to 7500 taxable balance	60.00 % tax
7501 to 8000 taxable balance	65.00 % tax
8001 to 10,000 taxable balance	66.00 % tax
10,001 to 12,000 taxable balance	67.00 % tax
Over 12,000 taxable balance	67.50 % tax

N.B. The effective rate is found by dividing tax as computed above by the taxable income.

Special Exemptions

(Tax proposals in 1968 Budget)

1. Personal Exemption $275
2. Spouse $240
3. Childs Exemption - dependant infants under 18 and child's income not exceeding $1,040. $135 for 1st four, thereafter $140 ea.
4. Dependant relative - amount spent or if less (1968/69 $156 ea.)
5. Housekeeper (child or infirm adult) amount paid or if less (1968/9 $156)
   apportion if less than full year
6. Donation - school and education ($100 or $50)
   approved donations (and $50) 1968/9 max $100.
7. Life, Personal accident, sickness, wife or child insurance premiums paid by taxpayer but excluding endowment policies of less than 10 years, (except where matures for males over 65 and females over 55 minimum term is 5 years) plus approved superannuation contributions- non members of subsidised superan. fund up to max. 85% of $650 or for members of subsidised superan. fund up to max.85% of $500 Exemption from 1 April 1969 is 85% of previous exemptions for insurance and superannuation.
8. Hardship Exemption - widow, widower, divorced or separated person with dependant child and does not employ a housekeeper because of financial reasons (1968/9 $156)

Other Deductions or Limitations

9. Rents and Royalties - less deduction of actual direct expenses including depreciation at tax rate.
10. Dividends - the average rate of tax on dividends after the rebate, will not exceed 32.5%.

Rebate

A 10% rebate on O.I.T. is refunded up to a maximum of $200. for the 1968/9 income year.

Individuals Income Tax Tables — For quick tax calcualtion refer to the appendix.

3.2 Company Assessment (Resident in N.Z.)

Basic rate of income tax: 1969 - 70

20 cents in the $1 plus 1/48000 of a $1 for every $1 of taxable income up to a maximum of $7200 and thereafter at a flat rate of 50 cents in the $1.

There are no special exemptions, but the following also apply

(1) Non Assessable Income - that income which is not liable for tax in the hands of the recipients, but is used for the purpose of incresing the rate of tax payable on his assessable income.

This only effects ordinary income tax and as such should be calculated on the 1968/69 OIT rate of 12½ cents in the $1.00 plus 1/48000 of a $1 for

every $1 of taxable income up to $7200 where the flat rate of 42½ cents per $1.00 comes in. Included in the class of non assessable income are dividends, or interest on debentures carrying a floating rate of interest, derived by a N.Z. company from other companies (N.Z. or overseas) except dividends from companies which are themselves exempt from income tax (i.e. building societies). (Refer for Staples · A guide to N.Z. Income Tax.)

Example

Assessable income	$2,000		
Non assessable income	400		
Tax rate on	$2,400	=	17½ cents in $1
Therefore tax payable is			
Assessable income	$2,000	at	17½ cents in $1
Tax payable	$350		

2. Interest payable on notes of less than five years are deductable expenses.

3.3 Bonus Issue Tax

Definition of Bonus Issue (B.I.) - capitalisation of the whole or part of (a) amounts standing to the credit of the company's reserves or profit and loss accounts, excluding share premium reserve or capital profits or assets written up in excess of cost.

(b) amounts otherwise available for capitalisation.
Rate of tax - 17½ cents in $1 on nominal value of an issue of bonus shares. This flat rate is payable at source, i.e. by the company, and is not assessable in the hands of the shareholder, and is a final tax. It is liable for payment on the 7th February of the year following the income year in which the bonus issue was made.

Should a company wind up within 3 years of issuing a B.I. and the Commissioner considers the distribution includes the B.I. capitalisation, he is empowered to charge a further 17½ cents per $1.

3.4 Losses Carried Forward: (Sec 137 of principal Act)

Accounting losses may be set off against a taxpayer's assessable income derived from another source during that year or be carried forward and deducted from his assessable income of a future tax year, provided that the loss carried forward shall as far as possible be deducted from the assessable income of the first succeeding year and consecutively thereafter.

For companies to qualify for this exemption it is necessary for their shareholders to remain substancially the same from one last day of the respective income year to the next. Substancially the same is held to be 40% or more of the shareholders.

The time limit of 6 years for losses carried forward has been repealed.

4. Farm Income Equalisation Scheme

4.1 Purpose of Scheme

This scheme is to help the farmer carry out a planned development programme and increase production with the least possible interference through rising and falling incomes. In good income years the farmer can make tax free deposits in the Income Equalisation Account. These reserves will then be available for withdrawal at the planned time to continue a development programme.

4.2 Conditions of Scheme

(1) Voluntary deposits of up to 25% of assessable income in any one year may be made. The minimum deposit is $200 unless the 25% of assessable income is less than $200. (IR 133 form for deposits)

(2) Deposits may be made during the income year or up to one month after the due date of filing a tax return or 6 months after balance date which ever is the earlier. The Commissioner has extended the time to make a deposit until January 31 where a return has been furnished earlier.

(3) The deposit is allowed as a deduction in the year in when it is made. A deposit made within the specific period" may be related back to the previous income year as above.

(4) The minimum period for a deposit is 12 months from the date of deposit and the maximum is five years from the end of the accounting year in which the tax deduction was granted.

(5) Where hardship exists the deposit can be withdrawn before the expiry of 12 months. The minimum refund is $100.

(6) All refunds are made on the first in, first out basis and become assessable income in the year in which the application is made or when compulsory refunds are made.

Where an application for refund is given within a "specified period" it may be related back to the previous accounting year. The "specified period" for a farmer with a 30 June balance date is 30 September in any year.

(7) A withdrawal from the fund and then a deposit in the same year is not allowed, except in the case where a compulsory refund has been made. However, it is possible to make a deposit subsequently followed by a withdrawal in the same accounting year provided the deposit withdrawn was made more than 12 months previously.

(8) Development expenditure or fertilizer expenditure carried forward is not taken account of when assessing the maximum deposit of 25% assessable income. The latter is adjusted to the year in which it occurred.

(9) No interest is payable on deposits made.

4.3 Advantages to the Taxpayer

(1) Money is available for a programme of farm development.

(2) Saving of taxation - example:

No Income Equalisation Deposit	year 1	year 2
Assessable Income	$10,000	$4,000
less development expenditure	-	$2,000
Amended Income	$10,000	$2,000
Less Exemptions	1,200	1,200
Taxable Balance	8,800	800
Income Tax	3,560.50	82.50

Income Equalisation Deposit Made	year 1	year 2
Assessable Income	$10,000	$4,000
Less development expenditure	-	$2,000
Amended Income	$10,000	$2,000
Deposit	2,000	
Withdrawal		2,000
	$ 8,000	$4,000
Less Exemptions	1,200	1,200
Taxable Balance	6,800	2,800
Income Tax	2,299.50	581.50

Income Tax saved by making a $2000 deposit is $762

5. TRUSTS

5.1 Definition

An equitable obligation binding a person (called the trustee) to deal with property over which he has control (and which is called the trust property) for the benefit of persons (called the beneficiaries) of whom he himself may be one, and any one of whom may enforce the obligation.

5.2 Trust Taxation (for Trusts intervivos)

A trustee shall make a return of income derived by him as trustee, separately and distinct from income derived by him in his individual capcity or under any other trust. (Section 155 (c) of the principal Act, 1954).

Proceedure under P.A.Y.E.

The trustee is required to pay provisional tax. For terminal tax the Inland Revenue Department, where necessary, will issue a notice to the trustee showing any balance of tax due or refundable.

5.3 Special Exemptions

A Beneficiaries Income - In respect of each beneficiary who is entitled to income of the trust during the income year, the trustee is allowed for tax purposes all special exemptions to which the beneficiary would be entitled if he had derived the income direct instead of through a trustee.

B Trustee's Income - The trustees income is assessable in respect of all income not paid or audited to a beneficiary or not paid or applied for the benefit of a beneficiary during the income year. Payment on application of income may be executed by the Trustee up to six

six months after balance date in reference to any one income year.

The trustee is entitled to a special exemption of $400 against income assessed for O.I.T. purposes. No other special exemptions for the purp purpose of assessing either O.I.T. or S.S.I.T. is allowed. Trusts formed after 18 July 1968 will not qualify for the Trustees special exemption, and a flat rate of income tax at 35% will be applied to Trustee's income.

Example: A - for the Beneficiaries

- A settlor in a trust formation will loose his special exemptions on those who now become the beneficiearies to the trust and who in so doing claim their respective personal exemptions of $275 per annum. Where applicable, the special exemptions lost to the settlor are:

Wife's exemptions	$240 p.a.
Child's exemption	$135 or $140 p.a.

The childs exemption is only claimable where his/her income does not exceed $1040, for trusts inter vivos the child's income comprises the following:

(i) sums paid in support of child from trust monies within year,
plus (ii) income paid to trust not in support of child;
plus(iii) accumulations of previous years income in trust.

Example

Years income for trust $100 of which $60 is paid, $40 accumulated and previous accumulations $1400. Childs income total $1500 which exceeds $1040, hence unable to claim child exemption.

Example: B - for the Trustee

Trust income held by the trustee and not credited or given to, or paid or applied for a beneficiary is assessed in the normal way. The only special exemption allowable is for $400 in respect of O.I.T. for pre 18 July 1968 trusts.

5.4 General

For elaboration on what constitutes trust income and allowable deductions on the same refer to the section on Trustees in "A Guide to N.Z. Income Tax Practice" by Staples.

6. Land Tax (Part 5, Land & Income Tax Act 1954, and 1968 Amendment Act)

6.1 General

Levied on unimproved value of all land held at 31 March, land tax is deductable for ordinary tax in the financial year of assessment where the land is used in the production of assessable income.

Returns are required from all land owners by 7 May. Payment is on receipt of notice no later than 7 November after which a 10% penalty is imposed. This penalty is reduced to 5% if the sum owing is paid by January the following year.

There is no liability for land tax where the total unimproved does not exceed $60,000.

6.2 Rates of Land Tax

5/12ths	c in $	for first $20,000 of taxable balance	
5/6 ths	c in $	$20,001 to $30,000	taxable balance
1¼	c in $	$30,001 to $40,000	taxable balance
1 2/3	c in $	$40,001 and over	

A rebate of 50% is allowed from tax calculated at the above rate.

6.3 Exemption (Section 7, 1968 Amendment Act)

Ordinary exemption is $60,000, reducing $1 for every $1 when the unimproved value exceeds $60,000 so as to leave no deduction when the value amounts to $120,000. Mortgage exemption has been repealed.

6.4 Examples:

Unimproved Value	Exemption	Taxable Balance	Tax Payable
$60,000	$60,000	nil	nil
70,000	50,000	$20,000	$41.67
80,000	40,000	40,000	145.83
90,000	30,000	60,000	312.49
100,000	20,000	80,000	479.16
110,000	10,000	100,000	645.83
120,000	nil	120,000	812.49
			plus $83.33 per $10,000 in excess of $120,000 U.V.

Method of Calculation:-

Unimproved value for ordinary exemption	$120,000	$70,000
less U.V.	70,000	
ordinary exemption		50,000
Taxable Balance		20,000
Tax computation $20,000 @ 5/12th ¢		83.33
Less 50% rebate		41.66
Tax payable		$41.67

6.5 Special Provisions

(1) Joint owners or Partners - (Sections 58 and 59 principal Act 1954)

(i) Joint owners are jointly assessed and only one exemption is allowed.

(ii) In addition to the joint assessment, each shall be assessed and liable in respect of his individual interest in the joint estate together with any other land owned by him. A credit is allowed for the share of the tax paid in the joint assessment limited to the

extent by which the present assessment is increased through the inclusion of the share of land held jointly.

Illustration

A, B and C are partners: partnership land has U.V. $90,000, mortgage $12,000. A holds 1/3 interest in the partnership as well as holding land in his own name, the U.V. being $65,000, no mortgage.

(a)	Partnership Account - U.V.	90,000		
	Exemption	30,000		
		60,000	=	$624.98
	Less Rebate 50%			312.49
				$312.49

A's share Unimproved value = $30,000.00
Exemption 10,000.00
Tax = 104.16

(b) A's Private Assessment -

	Partnership Share	Private	Aggregate		
U.V.	$30,000	+ 65,000	95,000		
Exempt'n	10,000	+ 55,000	65,000		
			30,000	=	166.66
Less 50% Rebate					83.33
					83.33

Credit for lesser of

	(i) Share partnership tax		104.16		
or	(ii) Aggregate Assessment	$83.33			
	less tax on private land $10,000 =	20.83	62.50	62.50	$20.83

(2) Shareholders in Companies (Section 61 principal Act 1954)

In this instance, all company land is deemed to be owned by the respective shareholders in proportion to which their interest in the paid up capital of the company bear to the total paid up capital.

No shareholder shall be liable under this section if his assessable interest so calculated is less than $1,000.

Assessment interest is based on unimproved value less "Business premises". Business premises means any piece of land included within the area of a building used for business purposes, and a piece of land equal in size to that adjoining it.

(3) Leased Land

The Crown, as land owner, is not assessed for land tax. However, lessees on Crown land are assessed annually on the value of the lessee's interest in the unimproved value. This is calculated in the normal manner.

Private leases, including companies, are assessed for land tax, the lessor or owner being liable for payment.

(4) Trustees

Assessable as if beneficial owner of land held is the trustee.

(5) Life Tenants

Deemed beneficial owner to exclusion of remainderman. Two assessments (Estate and Life Tenant) - aggregate U.V. for calculation of exemption and rate.

If life tenant interest in part only of estate land then 2 assessments on Estate.

7. Estate Duty (Estate and Gift Duties Act 1955 and Amendments)

7.1 Property Liable to Estate Duty

Estate duty is payable on a deceased persons wealth according to the following:

(1) all real and personal property situated in New Zealand,
(2) all real and personal property outside N.Z. if the deceased was domiciled in N.Z. at the date of death. A credit is allowed in respect of death duties payable overseas.
(3) Notional estate being -
gifts made within 3 years of death, valued at the date of making the gift and credit being allowed for gift duty paid against the death duty. Exceptions are those gifts made to charities, education or maintenance of relatives, joint tenancy of property such as that jointly owned, taken as a half share for estate purposes, joint family home, taken at that by which his share exceeds $8,000, for example:

J.F. Home	$20,000
at half share	$10,000
less exemption	8,000
dutiable portion	$ 2,000

property disposed of by the deceased prior to death but in which he reserves an interest for his life: property in annuities purchased or provided by the deceased so that a beneficial interest arises on his death. The first $1000 payable to a widow from a superannuation scheme pension is excluded from the estate.

7.2 Deductions and Expenses Allowable

Debts owing by the deceased at his death are deducted from the total value of the estate.

Reasonable funeral expenses and income tax on income to date of death are also deducted. Estate duty is charged on the balance of the estate.

7.3 Valuation of Property

Land is valued under the Valuation of Land Act 1951 at an up to date Government Valuation. Timber value of trees growing on the land is excluded from the valuation, subject to certain conditions. Other property

such as furniture and effects requires the administrator to submit an inventory and valuation by a qualified valuer to the Inland Revenue Dept. For property other than land or furniture and effects, the Commissioner will accept a valuation made by person competent to value the same.

7.4 Schedule of Death Duty Rates

Net Value of Estate	Basic Duty	Plus Duty on Excess	Net Value of Estate	Basic Duty	Plus Duty on Excess
Less than $ 8,000	nil	5%	$72,000	$14,400	39%
10,000	$100	7%	76,000	15,960	41%
12,000	240	9%	80,000	17,600	43%
14,000	420	11%	84,000	19,320	45%
16,000	640	13%	88,000	21,120	47%
18,000	900	15%	92,000	23,000	49%
20,000	1200	17%	96,000	24,960	43%
22,000	1540	19%	102,000	27,540	45%
24,000	1920	15%	108,000	30,240	47%
28,000	2520	17%	114,000	33,060	49%
32,000	3200	19%	120,000	36,000	51%
36,000	3960	21%	126,000	39,060	53%
40,000	4800	23%	132,000	42,240	55%
44,000	5720	25%	138,000	45,540	57%
48,000	6720	27%	144,000	48,960	59%
52,000	7800	29%	150,000	52,500	51%
56,000	8960	31%	160,000	57,600	53%
60,000	10200	33%	170,000	62,900	55%
64,000	11520	35%	180,000	68,400	57%
68,000	12920	37%	190,000	74,100	59%
			200,000	80,000	40% on excess

7.5 Special Exemption

Widow's exemption - the value of her succession, or the sum of $30,000, whichever is the lessor.

Widower's exemption - the value of his succession, or the sum of $14,000, whichever is the lessor.

Children's exemption (minors only) - the benefit received from the estate, or the sum of $1000 per child, whichever amount is the lesser.

In each case the exemption is limited to the duty at scale rates applicable to above dependence. Refer to examples below.

7.6 Quick Successions

To reduce the effect of a double impact of estate duty, less duty is payable in the second estate on property indentified as being or representing property received from the first estate.

The reduction is on the lesser of the duty payable on the particular property in the first and in the second estate. It is graduated according to the period which has passed between the two dates of death, as follows:

Period between Death of Successor and Predecessor	Duty Reduced by
4 months	75 per cent
8 months	60 per cent
1 year	50 per cent
2 years	40 per cent
3 years	30 per cent
4 years	20 per cent
5 years	10 per cent

7.7 Interest or Penality on Unpaid Estate Duty

Interest at the rate of 5%, is payable on unpaid duty after 6 months from date of death.

A 5% penalty can be levied where no efforts are being made to settle the liability within 3 months of assessment. Extention of time may be granted.

7.8 Examples

(1) Value of succession where there is a life interest in a dutiable estate of say $108,000.
Method of assessment is as follows:-

Value of asset in which life tenancy exists: asset $108,000 at 5%	annuity of $5400 per annum
Life expectancy - widow aged 70 (from tables)	11.46 years
Present value of annuity factor at 5% P.V. of $1 for 11.46 years at 5%	$8.56256
Present value of succession $5400 x 8.56256 =	$46,237
Remainderman's estate	$61,763
	$108,000

(2) Estate duty payable on a $108,000 dutiable estate where the widows succession is $46,000 (as above) and the balance is to be succeeded by the four children of the deceased.

Exemption entitlement:		
Widow's succession $46,000, exemption		$30,000 max
children's succession $62000, exemption		$ 4,000 max
total exemption entitlement		$34,000
Death Duty on $108,000 is	$30,240	
Less exemption 108000 - 34000 of $30,240	9,520	
Estate duty payable	$20,720	

(3) Where, on a dutiable estate of $108,000, there is no life interest clause in the will and the deceased's widow dies within 12 months of the predecessor and leaves the estate to the four infant children, then the position is as follows:

First Estate Assessment -			
Widows succession $104,000, exemption		$30,000 max	
Children succession $4,000, exemption		4,000 max	
		$34,000	
Estate duty on $108,000 is	$30,240		
less exemption 34000/108000 of $30,240	9,520		
First estate duty payable			$20,720
Widows estate - succession	$104,000		
Less estate duty paid	20,720		
	$ 83,280		
Estate of deceased widow after 12 months say		$80,000	
Children's exemption		4,000	
Second Estate Assessment -			
Estate duty on $80,000 is	17,600		
less exemption 4000/80,000 of $17,600	880		
	16,720		
Less quick succession relief at 50%	8,360		
Second estate duty payable			$8,360
Total Estate Duty payable in 12 months			$29,080

Note, the saving in death duties in this example by the inclusion of a life interest clause in the predecessor's will amounts to the duty payable in the second assessment, namely $8,360.

8 Gift Duty

(Estate & Gift Duties Act 1955 and Amendments)

8.1 Definition

A gift is any gratuitous or partly gratuitous disposition of property other than by will, whether with or without an instrument in writing and without full consideration passing.

The disposition of property covers any conveyance, transfer, settlement or assignment. It is used with the widest of meanings, including any transactions involving a person deminishing the value of his estate to the betterment of another's.

8.2 Property liable to Gift Duty

(1) gifts of all property situated in New Zealand
(2) gifts of all foreign real and personal property if the donor is domiciled in New Zealand.

8.3 Gifts Exempt from Duty

(1) gifts made towards the maintenancoe of a relative or the education of a relative and which are not excessive.
(2) small gifts not exceeding an aggregate of $200 to the same beneficiary in the same calendar year.
(3) special exemptions including
settlement of a joint family home
gift of property in aid of a charitable trust
contributions by an employer to superannuation fund.

8.4 Valuation of Property

A Government valuation will be made for reality and all other property will be assessed at market value as provided by a competent valuer to the donor.

8.5 Schedule of Gift Duty Rates

Value of Gift (together with all aggregated gifts within the previous 12 months)		Rate (excess means excess of the value)
Not exceeding $4000		Nil
Exceeding	Not - exceeding	
$4000 -	$6000	9% of excess over $4000
$6000 -	8000	$180 + 11% of excess over 6000
$8000 -	10000	$400 + 13% of excess over 8000
$10,000 -	12000	$660 + 15% of excess over 10000
$12,000 -	14000	$960 + 17% of excess over 12000
$14,000 -	16000	$1300 + 19% of excess over 14000
$16,000 -	18000	$1680 + 21% of excess over 16000
$18,000 -	20000	$2100 + 23% of excess over 18000
$20,000 -	22000	$2560 + 25% of excess over 20000
$22,000 -	24000	$3060 + 27% of excess over 22000
$24,000 -	28000	$3600 + 23% of excess over 24000
$28,000 -	32000	$4520 + 25% of excess over 28000
$32,000 -	36000	$5520 + 27% of excess over 32000
$36,000 -	40000	$6600 + 29% of excess over 36000
$40,000 -	44000	$7760 + 31% of excess over 40000
$44,000 -	48000	$9000 + 33% of excess over 44000
$48,000 -	52000	$10320 + 35% of excess over 48000
$52,000 -	56000	$11720 + 37% of excess over 52000
$56,000 -	60000	$13200 + 39% of excess over 56000
$60,000 -	64000	$14760 + 31% of excess over 60000
Exceeding	64000	25% value of the gift

8.6 Timing of Gifts

Because a donor can make a series of duty free gifts not exceeding $4000 in any 12 month period the timing of when a gift is made becomes important. In general it can be said that a gift is not complete until the donor has put himself in the position where he is unable to revoke it.

The date of completion of some of the more common forms of gift is illustrated in the following chart.

Description of Gift	When Complete
Cash	On delivery to the beneficiary.
Cheques	When the cheque has been cashed, because until the cheque has been cashed it may be revoked.
Land subject to the Land Transfer Act 1952	Except where a valid trust is created, either the date on which — (a) the instrument of transfer is registered in the Land Transfer Office, or (b) the beneficiary has in his possession all the necessary documents to enable the registration to be effected, whichever is the earlier.
Chattels	When 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.

8.7 Disclosure of Gifts for Assessment

Although the beneficiary has a duty to see that gifts are disclosed, the onus rests with the donor. Where the value of a gift exceeds $2000 or where the aggregate of gifts over the previous 12 months exceeds $2000 then the donor is required to file a statement giving particulars with the Inland Revenue Department (IR 635 form)

Failure to file a statement within one month (or three months if the gift is made out of N.Z.) renders the donor liable to a fine of $4 per day or $200 maximum.

Interest accrues on unpaid gifts duty at the rate of 5% from 3 months following the date the gift was made. Likewise, a penalty of an additional 5% accrues on unpaid duty six months from the date of gift.

8.8 Relief from Other Duties When Gifty Duty is Payable

When gift duty is payable the document of conveyance which constitutes the gift is exempt from conveyance or stamp duty and is charged with a duty of $1.50 only.

When property is liable to gift duty and also estate duty (notional estate), the amount of the gift duty paid or payable is deducted from the

sum which would otherwise be payable on the property as estate duty. Gift duty paid will be deducted from the estate duty payable where gifts are included as notional estate.

Present legislation provides for 3% interest on gift duty paid within three years of the donor's death. This refund becomes part of the deceased's dutiable estate.

8.9 Example

An illustration of gift duty assessment -

Gifts made were $3000 on 15th November 1968
$3000 on 12th November 1969
$10000 on 11th November 1970

The duty assessment is:-

	Gift	Basic Duty	Excess	Total	Appartion	To Pay
15.11.68	$3000	Nil			50%	$90
	6000	Nil	2000 @	$180		
					50% $90	
12.11.69	$3000				23%	260
	13000	$960 +	$170	$1130		
11.11.70	$10000				77%	870
	Total gift duty payable					$1220

APPENDIX

Individuals Income Tax Tables:

Income tax assessment is necessary when one wishes to estimate the effect which a given budgeted programme will have upon the farmer's resultant liquidity and what change will likely take place in his capital position as a result of the proposed programme.

Tax Codes

These are assessed on the basis of the exemptions allowed to various groups of people. If the farmer is single his code is "S". If he is married his code is "M" (except in special circumstances) and he has as well a number bside the letter e.g. "M3", giving the number of dependents supported by the taxpayer and for which he can claim an exemption e.g. three children under 18 years of age and each with a personal income of less than $1040.

Although personal life insurance premiums are allowable as an exemption they are not normally incorporated in the tax code but are the subject of an adjustment after the financial year has ended. As we are interested in the net tax liability a short method of calculation is to incorporate the premiums paid (as shown in past accounts) in the tax code.

This can be done by adding 1 to the code for every complete $135 of premium exemption allowed, e.g. this is the allowable exemption for each of the first four children. Other exemptions to which the taxpayer is entitled may be treated similarly.

An example of a tax code for a married man with three children paying $320 per year life insurance premium is as follows:

1.	Married	therefore	M
2.	Three children	therefore	3
3.	$320 insurance at 85% = $272 = 2 x 135	therefore add	2
	"Overall" Code		M5

Calculation of Provisional Taxation

1. Select from the income column in the table overleaf the amount coinciding with the complete dollars of the income on which you are computing tax or, if no such coinciding amount is shown in the income column then select the amount which is smaller than but nearest to the complete dollars of the income on which you are computing tax.

2. The provisional tax liability is the amount which

   (a) appears opposite the amount so selected in the income column and

   (b) is in the column headed by the tax code to be used as calculated above.

N.B.

In actual practice Provisional tax is assessed on last year's taxable income (gained from the accounts). Terminal tax assessment made later in the financial year will assess the amount of tax which should have been paid on the past year's income and the corresponding adjustment is made.

Table IV Calculation of Taxation Reserve Liability

(This table reveals the composite income tax liability assessed on income before special exemptions and is to the nearest whole dollar.)

Assessable Income	Codes - as calculated above							
	S	M	M1	M2	M3	M4	M5	M6
$ 275	0	0	0	0	0	0	0	0
300	2	0	0	0	0	0	0	0
325	4	0	0	0	0	0	0	0
350	6	0	0	0	0	0	0	0
375	8	0	0	0	0	0	0	0
400	10	0	0	0	0	0	0	0
425	12	0	0	0	0	0	0	0
450	14	0	0	0	0	0	0	0
475	16	0	0	0	0	0	0	0

Income	S	M	M1	M2	M3	M4	M5	M6
$ 500	18	0	0	0	0	0	0	0
525	20	1	0	0	0	0	0	0
550	22	3	0	0	0	0	0	0
575	24	5	0	0	0	0	0	0
600	26	7	0	0	0	0	0	0
625	27	9	0	0	0	0	0	0
650	29	11	0	0	0	0	0	0
675	31	13	2	0	0	0	0	0
700	33	15	4	0	0	0	0	0
725	35	16	6	0	0	0	0	0
750	37	18	8	0	0	0	0	0
775	39	20	10	0	0	0	0	0
800	41	22	12	1	0	0	0	0
825	43	24	14	3	0	0	0	0
850	45	26	16	5	0	0	0	0
875	47	28	18	7	0	0	0	0
900	49	30	20	9	0	0	0	0
925	51	32	22	11	0	0	0	0
950	56	34	24	13	2	0	0	0
975	61	36	26	15	4	0	0	0
1000	67	38	27	17	6	0	0	0
1025	72	40	29	19	8	0	0	0
1050	77	42	31	21	10	0	0	0
1075	82	44	33	23	12	2	0	0
1100	88	46	35	25	14	4	0	0
1125	93	48	37	27	16	5	0	0
1150	98	50	39	29	18	7	0	0
1175	103	53	41	31	20	9	0	0
1200	109	58	43	33	22	11	0	0
1225	114	64	45	35	24	13	2	0
1250	119	69	47	36	26	15	4	0
1275	124	74	49	38	28	17	6	0
1300	130	79	51	40	30	19	8	0
1325	135	85	56	42	32	21	10	0
1350	140	90	61	44	34	23	12	0
1375	145	95	67	46	36	25	14	3
1400	151	100	72	48	38	27	16	5
1425	156	106	77	50	40	29	18	7
1450	161	111	82	54	42	31	20	9
1475	166	116	88	59	44	33	22	11

Income	S	M	M1	M2	M3	M4	M5	M6
$ 1500	172	121	93	65	46	35	24	13
1525	177	127	98	70	47	37	26	15
1550	182	132	103	75	49	39	28	17
1575	187	137	109	80	52	41	30	19
1600	193	143	114	86	57	43	32	21
1625	198	148	119	91	63	45	34	23
1650	203	153	125	96	68	47	36	25
1675	208	158	130	101	73	49	38	27
1700	214	163	135	107	78	51	40	29
1725	219	169	140	114	84	55	42	31
1750	224	174	146	117	89	60	44	33
1775	229	179	151	122	94	66	46	35
1800	235	184	156	128	99	71	47	36
1825	240	190	161	133	105	76	49	38
1850	245	195	167	138	110	81	52	40
1875	250	200	172	144	115	87	57	42
1900	256	205	177	149	120	92	63	44
1925	261	211	182	154	126	97	68	46
1950	266	217	188	159	131	102	73	48
1975	271	221	193	164	136	108	78	50
2000	278	226	198	170	141	113	84	55
2050	290	237	209	180	152	123	94	66
2100	302	247	219	191	162	134	105	76
2150	314	258	230	201	173	144	115	87
2200	327	268	240	212	183	155	126	97
2250	339	280	251	222	194	165	136	108
2300	352	292	261	233	204	176	147	118
2350	366	305	272	243	215	186	157	129
2400	379	317	284	254	225	197	168	139
2450	393	330	296	264	236	207	178	150
2500	407	342	308	283	246	218	189	160
2550	421	355	321	295	257	228	199	170
2600	434	369	333	307	267	239	210	180
2650	448	383	345	319	279	249	220	191
2700	462	397	359	332	291	260	231	201
2750	476	410	373	344	303	270	241	212
2800	491	424	387	356	316	283	252	222
2850	507	438	400	370	328	295	262	233
2900	524	452	414	384	340	307	273	243
2950	540	465	428	398	353	319	285	254

Income	S	M	M1	M2	M3	M4	M5	M6
$ 3000	557	479	441	411	367	332	297	264
3050	573	495	455	425	381	344	310	275
3100	590	511	469	439	395	357	322	287
3150	606	528	483	453	408	371	334	300
3200	623	544	499	466	422	385	346	312
3250	639	561	516	480	436	399	360	324
3300	656	577	532	495	450	412	374	336
3350	673	594	549	511	463	426	388	349
3400	690	610	565	528	477	440	401	363
3450	707	627	582	544	492	454	415	377
3500	724	643	598	561	509	467	429	390
3550	741	660	615	577	525	481	443	404
3600	758	677	631	594	542	497	456	418
3650	775	694	648	610	558	514	470	432
3700	792	711	665	627	575	530	484	445
3750	809	728	682	643	591	547	501	459
3800	827	745	699	660	608	563	517	473
3850	845	762	716	677	624	580	534	487
3900	864	779	733	694	641	596	550	504
3950	882	796	750	711	658	613	567	520
4000	901	812	767	728	675	629	583	537
4100	938	849	801	762	709	663	616	570
4200	975	886	836	796	743	697	649	603
4300	1013	923	873	830	777	731	683	636
4400	1053	960	910	867	811	765	717	670
4500	1093	997	947	904	847	799	751	704
4600	1136	1037	984	941	884	834	785	738
4700	1179	1077	1023	978	921	871	819	772
4800	1213	1117	1063	1016	958	908	856	806
4900	1256	1157	1103	1056	995	945	893	842
5000	1299	1197	1143	1096	1035	982	930	879
5100	1342	1239	1183	1136	1075	1021	967	916
5200	1385	1282	1224	1176	1115	1061	1005	953
5300	1429	1325	1267	1216	1155	1101	1045	990
5400	1474	1368	1310	1259	1195	1141	1085	1029
5500	1519	1411	1353	1302	1237	1181	1125	1069
5600	1564	1456	1396	1345	1280	1222	1165	1109
5700	1609	1501	1440	1388	1323	1265	1205	1149
5800	1655	1546	1485	1432	1366	1308	1248	1189
5900	1704	1591	1530	1477	1409	1351	1291	1230

Income	S	M	M1	M2	M3	M4	M5	M6
$ 6000	1753	1636	1575	1522	1454	1394	1334	1273
6100	1802	1684	1620	1567	1499	1438	1377	1316
6200	1851	1733	1667	1612	1544	1483	1420	1359
6300	1900	1782	1716	1657	1589	1528	1465	1402
6400	1950	1831	1765	1706	1634	1573	1510	1447
6500	2000	1880	1814	1755	1682	1618	1555	1492
6600	2050	1930	1863	1804	1731	1665	1600	1537
6700	2100	1980	1913	1853	1780	1714	1645	1582
6800	2151	2030	1963	1902	1829	1763	1694	1627
7000	2259	2130	2063	2002	1928	1861	1792	1723
7200	2367	2238	2165	2102	2028	1960	1890	1821
7400	2483	2346	2273	2207	2128	2060	1990	1920
7600	2603	2459	2381	2315	2235	2162	2090	2020
7800	2724	2579	2498	2424	2343	2270	2194	2120
8000	2854	2699	2618	2544	2456	2378	2302	2227
8200	2984	2828	2740	2664	2576	2495	2410	2335
8400	3115	2958	2870	2790	2696	2615	2531	2447
8600	3247	3089	3000	2920	2825	2737	2651	2567
8800	3379	3221	3132	3050	2955	2867	2776	2687
9000	3511	3353	3264	3182	3085	2997	2906	2815
9200	3643	3485	3396	3314	3217	3128	3035	2945
9400	3775	3617	3528	3446	3349	3260	3167	3075
9600	3907	3749	3660	3578	3481	3392	3299	3207
9800	4039	3881	3792	3710	3613	3524	3431	3339
10000	4171	4013	3924	3842	3745	3656	3563	3471
10200	4303	4145	4056	3974	3877	3788	3695	3603
10400	4436	4277	4188	4106	4009	3920	3827	3735
10600	4570	4410	4320	4238	4141	4052	3959	3867
10800	4704	4544	4453	4370	4273	4184	4091	3999
11000	4838	4678	4587	4504	4406	4316	4223	4131
11200	4972	4812	4721	4638	4540	4450	4355	4263
11400	5106	4946	4855	4772	4674	4584	4489	4396
11600	5240	5080	4989	4906	4808	4718	4623	4530
11800	5374	5214	5123	5040	4942	4852	4757	4664
12000	5508	5348	5257	5174	5076	4986	4891	4798
12200	5642	5482	5391	5308	5210	5120	5025	4932
12400	5777	5616	5525	5442	5344	5254	5159	5066
12600	5912	5750	5659	5576	5478	5388	5293	5200
12800	6047	5885	5794	5710	5612	5522	5427	5334
13000	6182	6020	5929	5845	5747	5656	5561	5468

Income	S	M	M1	M2	M3	M4	M5	M6
$ 13200	6317	6155	6064	5980	5882	5790	5695	5602
13400	6452	6290	6199	6115	6017	5925	5830	5736

Method of Calculating Tax Where Income Exceeds $13,400

Take the tax on $13,400, as above, and for the taxable balance exceeding $13,400 add 67½ cents for every $1.00 of taxable income.

Example:

Person with provisional tax code M2 -

Annual income $14,000	
Tax on $13,400 for M2	$6115
Tax on 600 at 67½ per cent	405
Total provisional tax	$6520

References:

Cunningham and Thompson's Taxation Laws of New Zealand - Vols I, II and III.

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Vol 47 No. 4 Evasion and Avoidance of Taxation - Fahy
Vol 47 No. 5 Income Tax Investigation and Penalties - Fahy

For notes on Livestock and inventory valuations refer to Introduction to Farm Accounting - Tonkin

(Farm Management Notes, Vol. I.)

SECTION 5

GROSS MARGINS

Analysis of Direct Costs and Returns on the Lincoln College Medium Soils

Compiled by R.A. Bonifant

Note: Gross Margin per acre equals the gross revenue less direct costs. It is therefore the amount contributed by the enterprise to the meeting of costs which are fixed in the short term and to profit. In the following Gross Margin calculations, yield and price have been varied to show the effect, of variation of these two parameters on the relative profitability of any particular enterprise.

Gross Margins can be thought of as mechanical guides to short term planning and budgeting. They do not take into account such basic considerations as the husbandries, labour and machinery availability, personal preferences, risk and uncertainty etc.

A. Crops

1. Garden Peas (ex old grass)

a. Gross Revenue

25 bus. @ $1.20	$30.00
25 bus. @ $1.60	$40.00
25 bus. @ $2.00	$50.00

Direct Costs	$	
Cultivation 5 hrs @ $0.3	1.50	
Seed 4 hrs @ $2.78	11.12	
Fertiliser 1¼ cwt @ $1.12	1.40	
Spraying material + 1/3rd hr tractor @ $0.3 ($3.32 + $0.10)	3.42	
Harvesting		
Mowing 1 hr @ $0.3	.30	
Heading ½ hr @ $0.4	.20	
Sacks 8 @ $0.11	.88	
Cartage 8 sacks @ $0.15	1.20	
1¼ cwt Fert. @ $0.08	.10	
Total Direct Costs		$20.12

Gross Margins

$30.00 - 20.12 = $9.88

$40.00 - 20.12 = $19.88

$50.00 - 20.12 = $29.88

b. Gross Revenue

35 bus. @ $1.20	$42.00
35 bus. @ $1.60	$56.00
35 bus. @ $2.00	$70.00

Direct Costs		$	
Cultivation	)	1.50	
Seed	) Same	11.12	
Fertiliser	) as	1.40	
Spraying material	) above	3.42	
Mowing	)	.30	
Heading ¾ hr @ $0.40		.30	
Sacks 12 @ $0.11		1.21	
Cartage 12 @ $0.15		1.80	
1¼ cwt Fert. @ $0.08		.10	
Total Direct Costs			$21.15

Gross Margins

$42.00 - 21.15 = $20.85

$56.00 - 21.15 = $34.85

$70.00 - 21.15 = $48.85

c. Gross Revenue

45 bus. @ $1.20		$54.00
45 bus. @ $1.60		$72.00
45 bus. @ $2.00		$90.00

Direct Costs	$	
Cultivation	1.50	
Seed	11.12	
Fertiliser	1.40	
Spryaing material	3.42	
Mowing	.30	
Heading 1 hr @ $0.40	.40	
Sacks 15 @ $0.11	1.65	
Cartage 15 @ $0.15	2.25	
1½ cwt Fert. @ $0.08	.10	
Total Direct Costs		$22.14

Gross Margins

$54.00 - 22.14 = $31.86

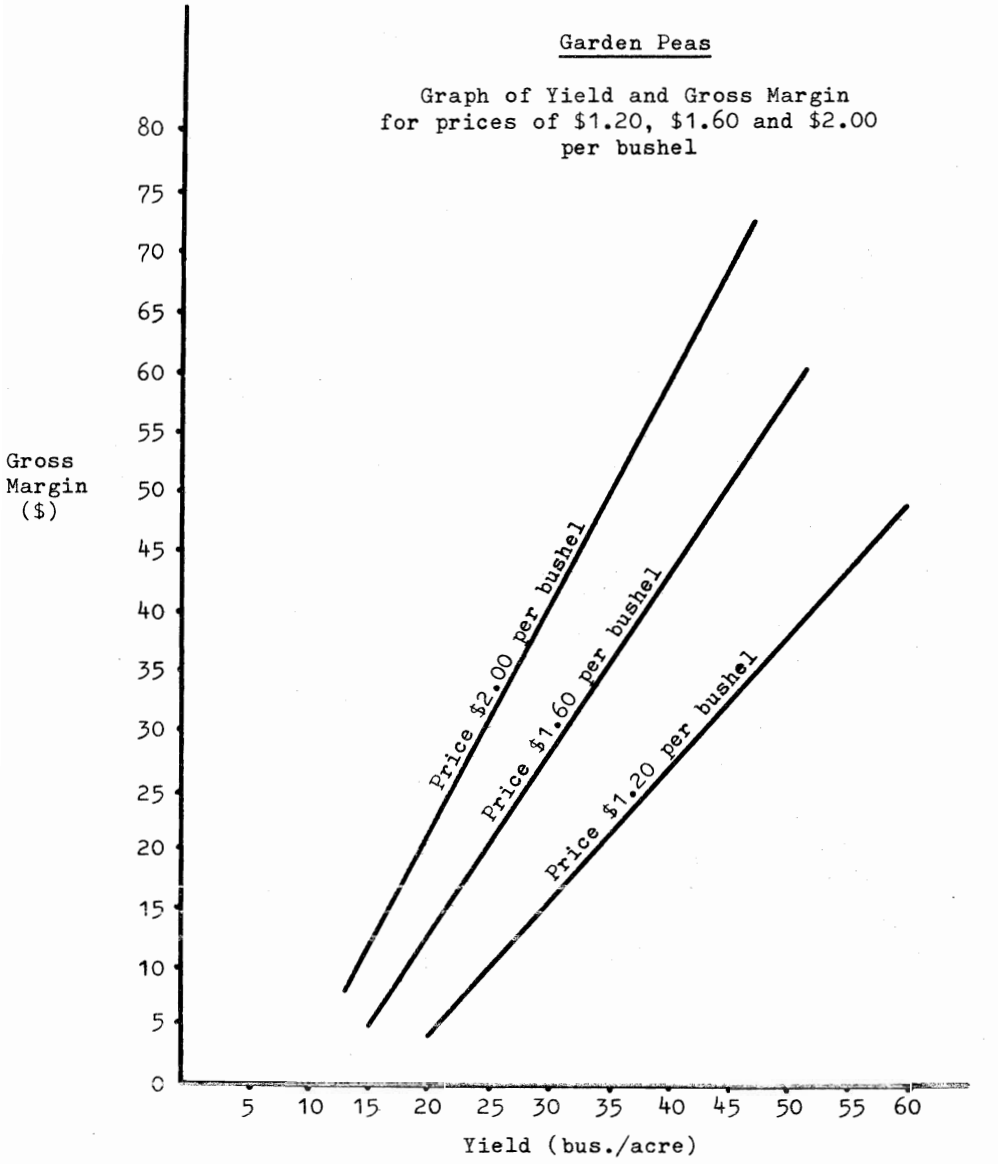
$72.00 - 22.15 = $49.86

$90.00 - 22.14 = $67.86

2. Partridge Peas (ex old grass)

Garden Peas

Graph of Yield and Gross Margin
for prices of $1.20, $1.60 and $2.00
per bushel



a. Gross Revenue

25 bus. @ $1.20		$30.00
25 bus. @ $1.60		$40.00
25 bus. @ $2.00		$50.00

Direct Costs	$	
Cultivation 3 hrs @ $0.30	.90	
Seed 3 bus. @ $2.475	7.42	
Fertilizer 1 cwt @ $1.18	1.18	
Spraying material + 1/3 hr tractor @ $0.30 ($3.32 + $0.10)	3.42	
Harvesting, Mowing 1 hr @ $0.30	.30	
Heading $\frac{1}{2}$ hr @ $0.40	.20	
Sacks 8 sacks @ $0.11	.88	
Cartage 8 sacks @ $0.15	1.20	
1 cwt super @ $0.08	.08	
Total Direct Costs		$15.58

Gross Margins

$30.00 - 15.58 = $14.42

$40.00 - 15.58 = $24.42

$50.00 - 15.58 = $34.42

b. Gross Revenue

35 bus. @ $1.20		$42.00
35 bus. @ $1.60		$56.00
35 bus. @ $2.00		$70.00

Direct Costs	$	
Cultivation)	.90	
Seed) Same	7.42	
Fertilizer) as	1.18	
Spraying) above	3.42	
Mowing)	.30	
Heading $\frac{3}{4}$ hr @ $0.40	.30	
Sacks 12 @ $0.11	1.21	
Cartage 12 @ $0.15	1.80	
1 cwt Fert. $0.08	.08	
Total Direct Costs		$16.61

Gross Margins

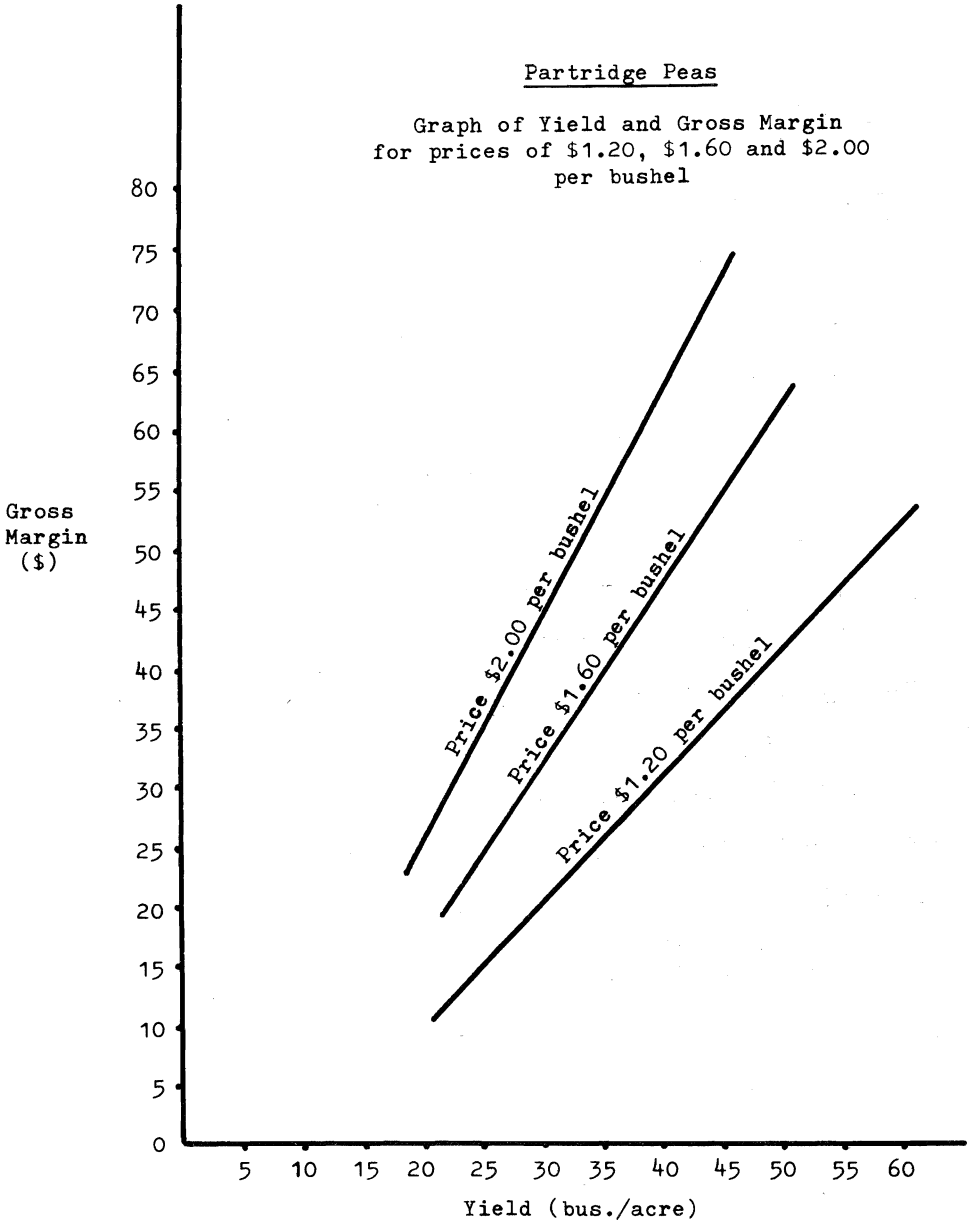
$42.00 - 16.61 = $25.39

$56.00 - 16.61 = $39.39

$70.00 - 16.61 = $53.39

Partridge Peas

Graph of Yield and Gross Margin
for prices of $1.20, $1.60 and $2.00
per bushel



c. Gross Revenue

45 bus. @ $1.20	$54.00
45 bus. @ $1.60	$72.00
45 bus. @ $2.00	$90.00

Direct Costs		$	
Cultivation	)	.90	
Seed	) Same	7.42	
Fertilizer	) as	11.18	
Spraying	) above	3.42	
Mowing	)	.30	
Heading 1 hr @ $0.40		.40	
Sacks 15 @ $0.11		1.65	
Cartage 15 @ $0.15		2.25	
1 cwt Fert. @ $0.08		.08	
Total Direct Costs			$17.60

Gross Margins

$54.00 - 17.60 = $36.40

$72.00 - 17.60 = $54.40

$90.00 - 17.60 = $72.40

3. Vining Peas (ex old grass or Chou)

a. Gross Revenue

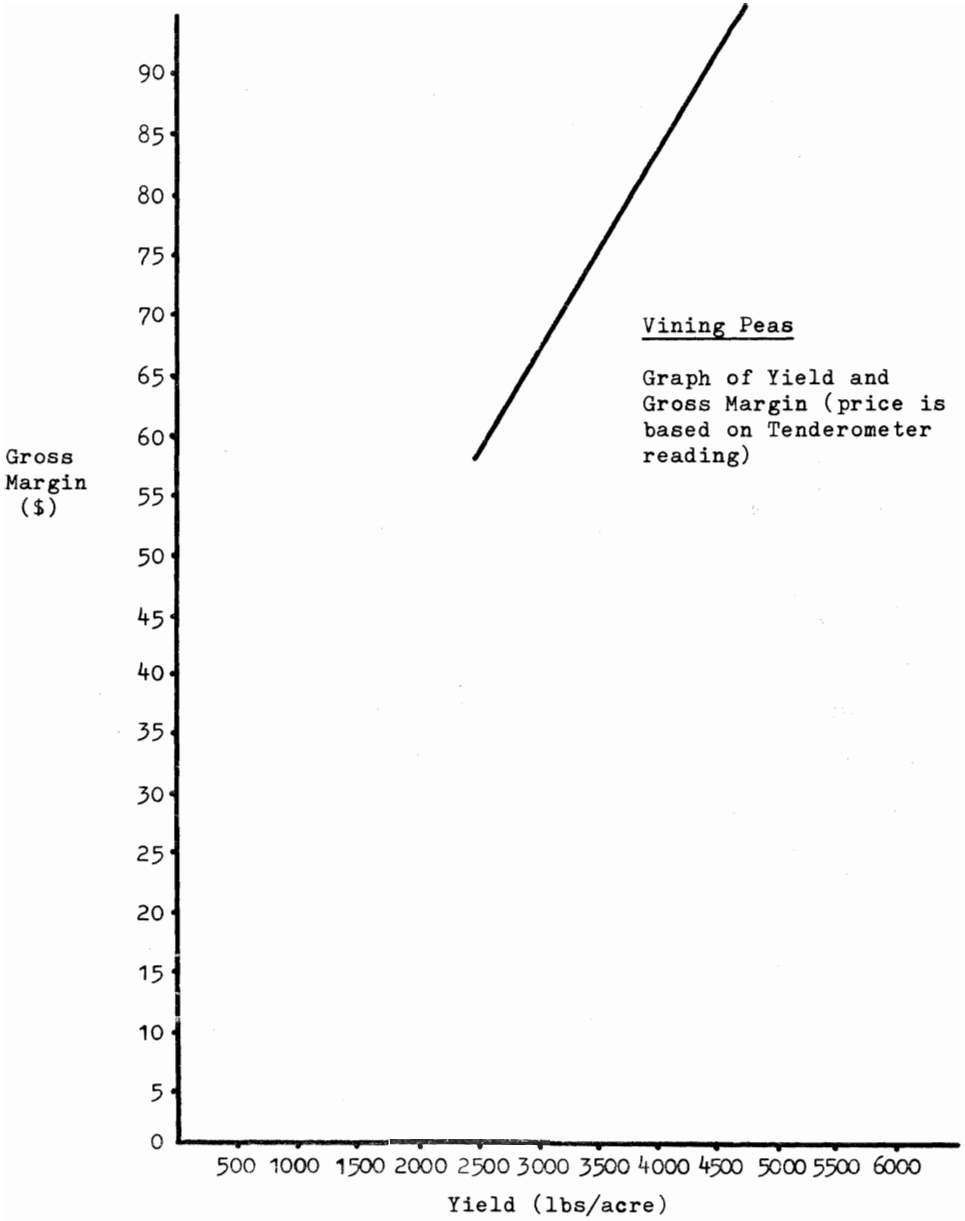
Payout based on tenderometer reading

2500 lbs at average reading of 95 @ $72/ton $80.35

Direct Costs	$	
Cultivation 5 hrs @ $0.30	1.50	
Seed 4 bus. @ $4.00	16.00	
Fertilizer 1 cwt @ $1.12	1.12	
Cartage 1 cwt Fert. @ $0.08	.08	
Spraying	3.50	
Total Direct Costs		$22.2

Gross Margin

$80.35 - 22.2
= $58.15


Vining Peas
Graph of Yield and Gross Margin (price is based on Tenderometer reading)
Gross Margin ($)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000
Yield (lbs/acre)

b. Gross Revenue

3500 lbs of average reading of 100 @ $64/ton $99.99

Direct Costs		$
Cultivation	)	1.50
Seed	) Same	16.00
Fertilizer	) as	1.12
Cartage	) above	.08
Spraying	)	3.50
Total Direct Costs		$22.2

Gross Margin

$99.99 - 22.20

= $77.79

c. Gross Revenue

4500 lbs at average reading of 101 @ $56/ton $112.50

Direct Costs	$
Cultivation	1.50
Seed	16.00
Fertilizer	1.12
Cartage	.08
Spraying	3.50
Total Direct Costs	$22.20

Gross Margin

$112.50 - 22.20

= $90.30

4. Wheat (ex peas)

a. Aotea

Gross Revenue

30 bus. @ $1.30 ($1.45 less approx. 15 ¢ witheld) $39.00

Direct Costs	$
Cultivation 3 hrs @ $0.3	.90
Seed 1.5 bus @ $2.515	3.77
Harvesting, Heading ¼ hr @ $0.4	.10
Sacks 10 @ $0.11	1.10
Cartage 10 sacks @ $0.15	1.50
Levy $0.69/50 bus.	.41

Raking + Ploughing for fire break 1/3 hr @ $0.3	.10	
Total Direct Costs		$7.88

Gross Margin

$39.00 7.88

= $31.12

Gross Revenue

50 bus. @ $1.30		$65.00
Direct Costs	$	
Cultivation	.90	
Seed	3.77	
Harvesting, Heading 1/3 hr @ $0.4	.13	
Sacks 17 @ $0.11	1.87	
Levy $0.69/50 bus.	.69	
Cartage 17 sacks @ $0/15	2.55	
Raking + Ploughing for fire break 1/3 hr @ $0.3	.10	
Total Direct Costs		$10.01

Gross margin

$65.00 - 10.01

= $54.99

Gross Revenue

70 bus. @ $1.30		$91.00
Direct Costs	$	
Cultivation	.90	
Seed	3.77	
Harvesting, Heading ½ hr @ $0.4	.20	
Sacks 23 @ $0.11	2.53	
Cartage 23 sacks @ $0.15	3.45	
Levy $0.69/50 bus.	.96	
Raking + Ploughing for fire break 1/3 hr @ $0.3	.10	
Total Direct Costs		$11.91

Gross Margin

$91.00 - 11.91

= $79.09

b. Hilgendorf

Gross Revenue

30 bus. @ $1.50 ($1.65 less approx. 15 ¢ withheld) $45.00

Direct Costs	$
Cultivation 4 hrs @ $0.3	.90
Seed 1.5 bus. @ $2.782	4.17
Harvesting, Heading ¼ hr @ $0.4	.10
Sacks 10 @ $0.11	1.10
Cartage 10 sacks @ $0.15	1.50
Levy $0.69/50 bus.	.41
Raking + Ploughing for fire break 1/3 hr @ $0.3	.10
Total Direct Costs	$8.28

Gross Margin

$45.00 - 8.28

= $36.72

Gross Revenue

50 bus. @ $1.50 $75.00

Direct Costs	$
Cultivation) Same as	.90
Seed) above	4.17
Harvesting, Heading 1/3 hr @ $0.4	.13
Sacks 17 @ $0.11	1.97
Cartage 17 sacks @ $0.15	2.55
Levy $0.69/50 bus.	.69
Raking + Ploughing for fire break 1/3 hr @ $0.3	.10
Total Direct Costs	$10.41

Gross Margin

$75.00 - 10.41

= $64.59

Gross Revenue

70 bus. @ $1.50 $105.00

Direct Costs	$
Cultivation) Same as	.90
Seed) above	4.17
Harvesting, Heading ½ hr @ $0.4	.20
Sacks 23 @ $0.11	2.53

Cartage 23 sacks @ $0.15	3.45
Levy $0.69/50 bus.	.96
Raking + Plouging for fire break 1/3 hr @ $0.3	.10

Total Direct Costs $12.31

Gross Margin

$105.00 - 12.31

= $92.69

c. Arawa

Gross Revenue

30 bus. @ $1.28 ($1.43 less approx 15 ¢ withheld) $38.40

Direct Costs	$
Cultivation 3 hrs @ $0.3	.90
Seed 1.5 bus. @ $2.498	3.75
Harvesting, Heading ¼ hr @ $0.4	.10
Sacks 10 @ $0.11	1.10
Cartage 10 sacks $0.15	1.50
Levy $0.69/50 bus	.41
Raking + Ploughing for fire break 1/3 hr @ $0.3	.10

Total Direct Costs $7.86

Gross Margin

$38.40 - $7.86

$30.54

Gross Margin

50 bus. @ $1.28 $64.00

Direct Costs	$
Cultivation) Same as	.90
Seed) above	3.75
Harvesting, Heading 1/3 hr @ $0.4	.13
Sacks 17 @ $0.11	1.87
Cartage 17 sacks @ $0.15	2.55
Levy $0.69/50 bus.	.69
Raking + Ploughing for fire break 1/3 hr @ $0.3	.10

Total Direct Costs $9.99

Gross Margin

$64.00 - 9.99

$54.01

Gross Revenue		
70 bus. at $1.28		$89.60
Direct Costs	$	
Cultivation) Same as	.90	
Seed) above	3.75	
Harvesting, Heading ½ hr at 4c	.20	
Sacks 23 at 11c	2.53	
Cartage 23 sacks at 15c	3.45	
Levy $0.69/50 bus.	.96	
Raking + Ploughing for fire break 1/3 hour at 3 c	.10	
Total Direct Costs		$11.89

Gross Margin

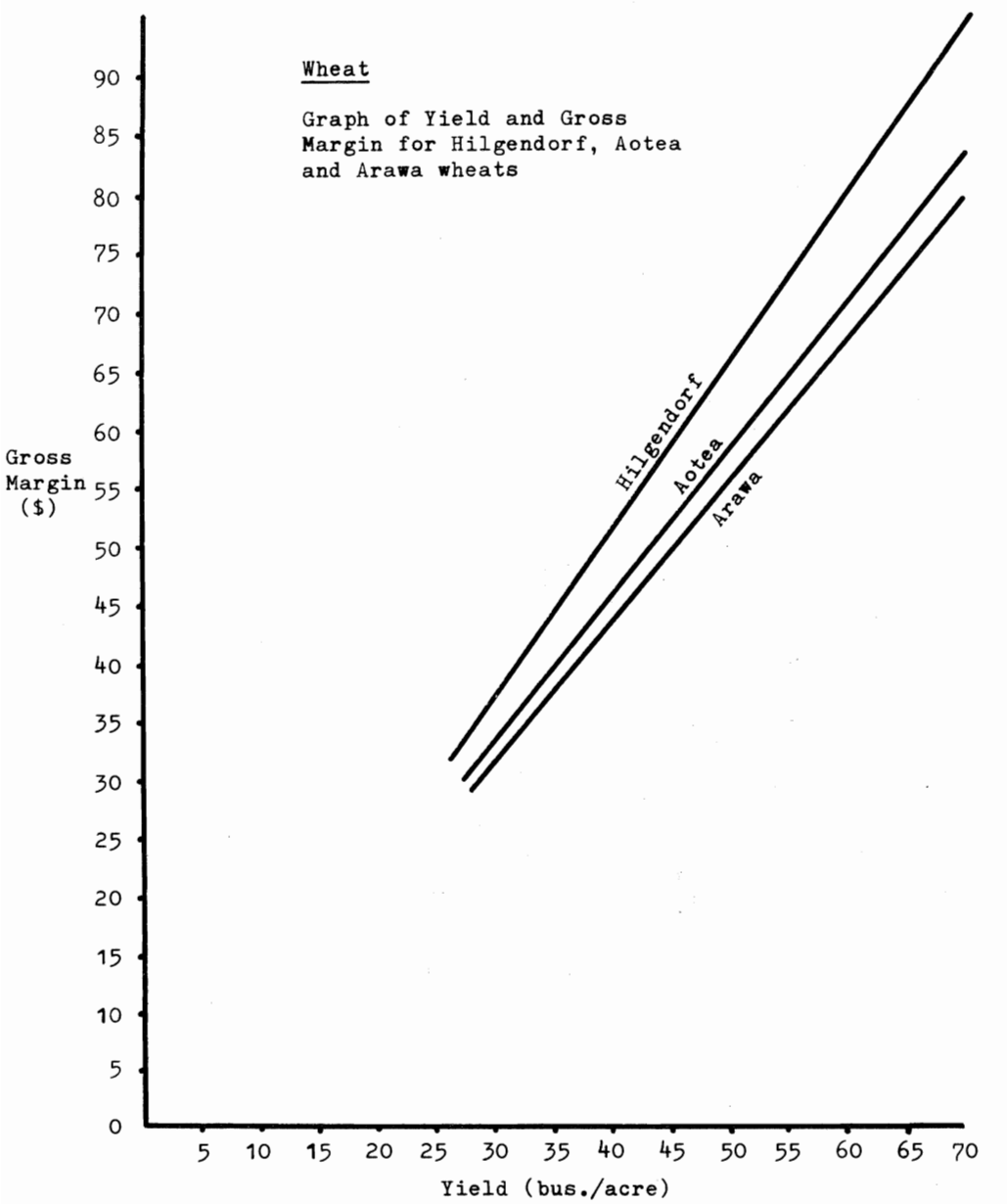
$89.60 - 11.89

$77.71

Summary of Wheat Gross Margins

	30 bus/ac	50 bus/ac	70 bus/ac
Hilgendorf	$36.72	$64.59	$92.69
Aotea	$31.12	$54.99	$79.09
Arawa	$30.54	$54.01	$77.71

This summary can be shown in graphical form as follows


Wheat
Graph of Yield and Gross Margin for Hilgendorf, Aotea and Arawa wheats
Gross Margin ($)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
Hilgendorf
Aotea
Arawa
5 10 15 20 25 30 35 40 45 50 55 60 65 70
Yield (bus./acre)

5. Wheat (ex wheat)

Gross Revenue (Aotea)

45 bus. @ $1.30 ($1.45 less approx. 15c withheld) $58.50

Direct Costs	$	
Cultivation 4 hrs @ $0.3	1.20	
Seed 1.5 bus. @ $2.515	3.77	
Fertilizer 1 cwt @ $1.18	1.18	
Harvesting, Heading 1/3 hr @ $0.4	.20	
Sacks 17 @ $0.11	1.87	
Cartage 17 sacks @ $0.15	2.55	
1 cwt super @ $0.08	.08	
Levy $0.69/50 bus.	.69	
Raking + Ploughing for fire break 1/3 hr @ $0.3	.10	
Total Direct Cost		$11.64

Gross Margin

$58.50 - 11.64

$46.86

Compare this Gross Margin with that of 50 bus. wheat (ex peas) i.e. $54.99. This lower Gross Margin for wheat (ex wheat) is due to lower yield for the second year wheat and to slightly higher cultivation and fertilizer costs.

6. Bulk Wheat (ex peas)

Gross Revenue (Aotea)	$	
50 bus. @ $1.30	65.00	
50 bus. @ $0.15 storage increment	7.50	
		$72.50

Direct Costs	$	
Cultivation 3 hrs @ $0.3	.90	
Seed 1.5 bus. @ $2.515	3.77	
Harvesting, Heading 1/3 hr @ $0.4	.13	
Cartage in bulk @ $1.13/ton	1.51	
Levy $0.69/50 bus.	.69	
Raking + Ploughing for fire break	.10	
Total Direct Costs		$ 7.10

Gross Margin

$72.50 - 7.10

$65.40

Compare this Gross Margin with that for bagged Aotea, i.e. $54.99 Note the economy of bulk handling.

7. Barley

Gross Revenue

50 bus. @ $0.95	$47.50	

Direct Costs	$	
Cultivation 4½ hrs @ $0.3	1.35	
Seed 2 bus @ $1.95	3.90	
Fertilizer 1 cwt @ $1.18	1.18	
Spraying (weeds) materials + 1/3 hr tractor @ $0.3	1.10	
Harvesting, Heading ½ hr @ $0.4	.20	
Sacks 17 @ $0.11	1.87	
Cartage 17 sacks @ $0.15	2.55	
1 cwt Fert. @ $0.08	.08	
Raking + Ploughing for a fire break 1/3 hr tractor @ $0.03	.01	
Total Direct Costs		$12.24

Gross Margin

$47.50 - 12.24

= $35.26

Gross Revenue

60 bus. @ $0.95		$57.0

Direct Costs		$	
Cultivation)		1.35	
Seed)	Same as	3.90	
Fertilizer)	Above	1.18	
Spraying)		1.10	
Heading))		.20	
Sacks 20 @ $0.11		2.20	
Cartage 20 sacks @ $0.15		3.00	
1cwt Fert. @ $0.08		.08	
Raking + Ploughing for a fire break 1/3 hr tractor @ $0.03		.01	
Total Direct Costs			$13.02

Gross Margin

$57.00 - 13.02

= $43 98

Gross Revenue

70 bus. @ $0.95		$66.50

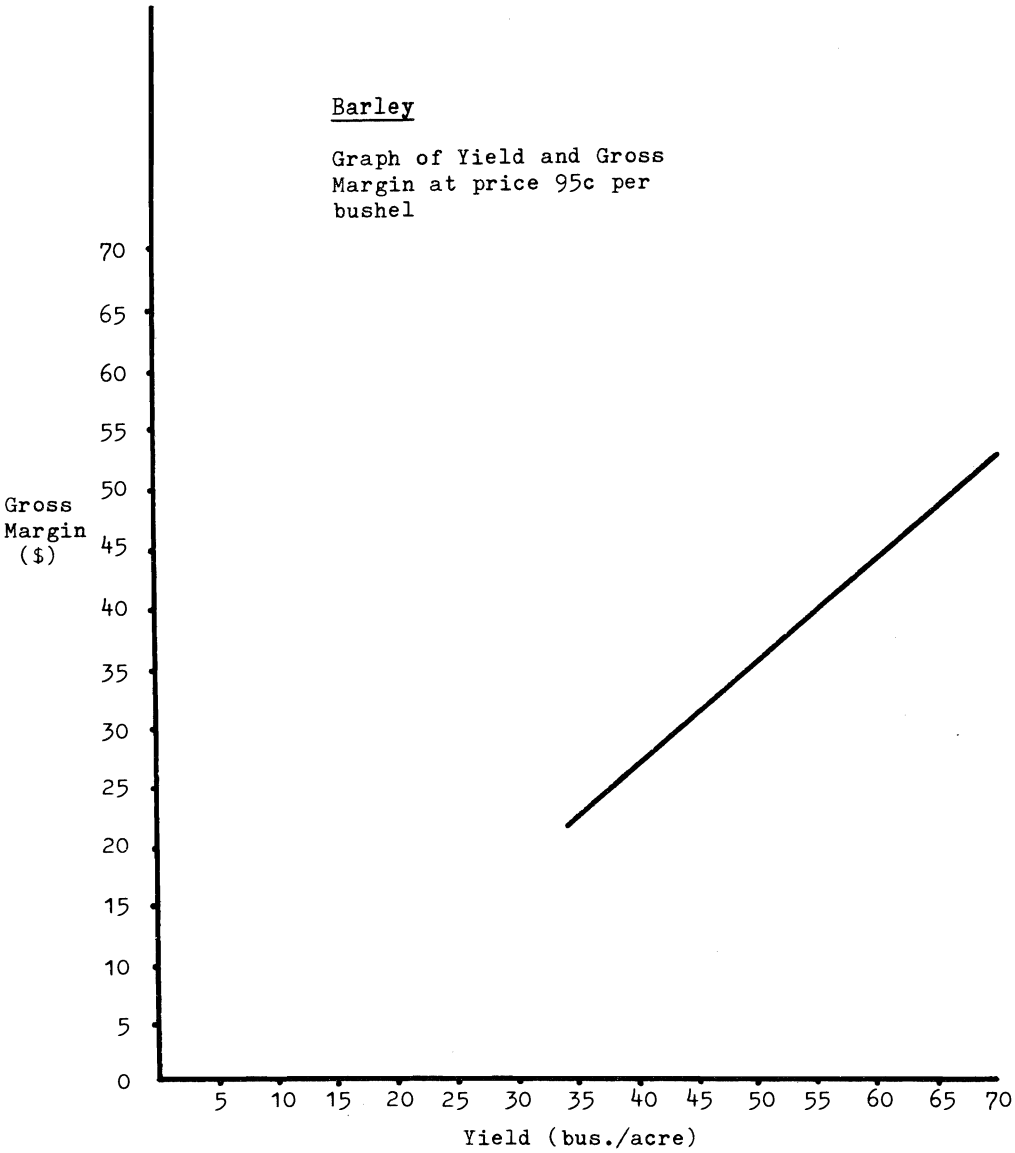
Direct Costs		$
Cultivation)		1.35
Seed)		3.90
Fertilizer)	Same as	1.18
Spraying)	Above	1.10
Heading)		.20
Sacks 23 @ $0.11		2.53
Cartage 23 sacks @ $0.15		3.45
1 cwt Fert. @ $0.08		.08
Raking + Ploughing for a fire break 1/3 hr tractor @ $0.3		.01
		$13.80

Total Direct Costs

Gross Margin

$66.50 - 13.80

$52.70


Barley
Graph of Yield and Gross Margin at price 95c per bushel
Gross Margin ($)
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5 10 15 20 25 30 35 40 45 50 55 60 65 70
Yield (bus./acre)

8. Potatoes

a. Gross Revenue

8 tons table @ $20	$160	
4 tons seed @ $40	$160	
		$320
8 tons table @ $30	$240	
4 tons seed @ $50	$200	
		$440

Direct Costs	$	
Cultivation 12 hrs @ $0.3	3.60	
Seed 1 ton @ $61	61.00	
Fertilizer (5P:5N) 3 cwt @ $1.60	4.80	
Spraying (defoliate)materials + 1/3 hr tractor @ $0.3	1.61	
Picking 168 bags	50.40	
Cartage 168 bags to grader @ $0.08	13.44	
168 bags F.O.B. Table @ $2.54/ton	20.32	
F.O.R. seed @ $1.11/ton	4.44	
3 cwt Fert. @ $0.08	.24	
Sacks 168 @ $0.25	42.00	
Grading 12 tons @ $6.00	72.00	
Levy 8 tons @ $2.50	20.00	
Certification	2.00	
Total Direct Costs		$295.85

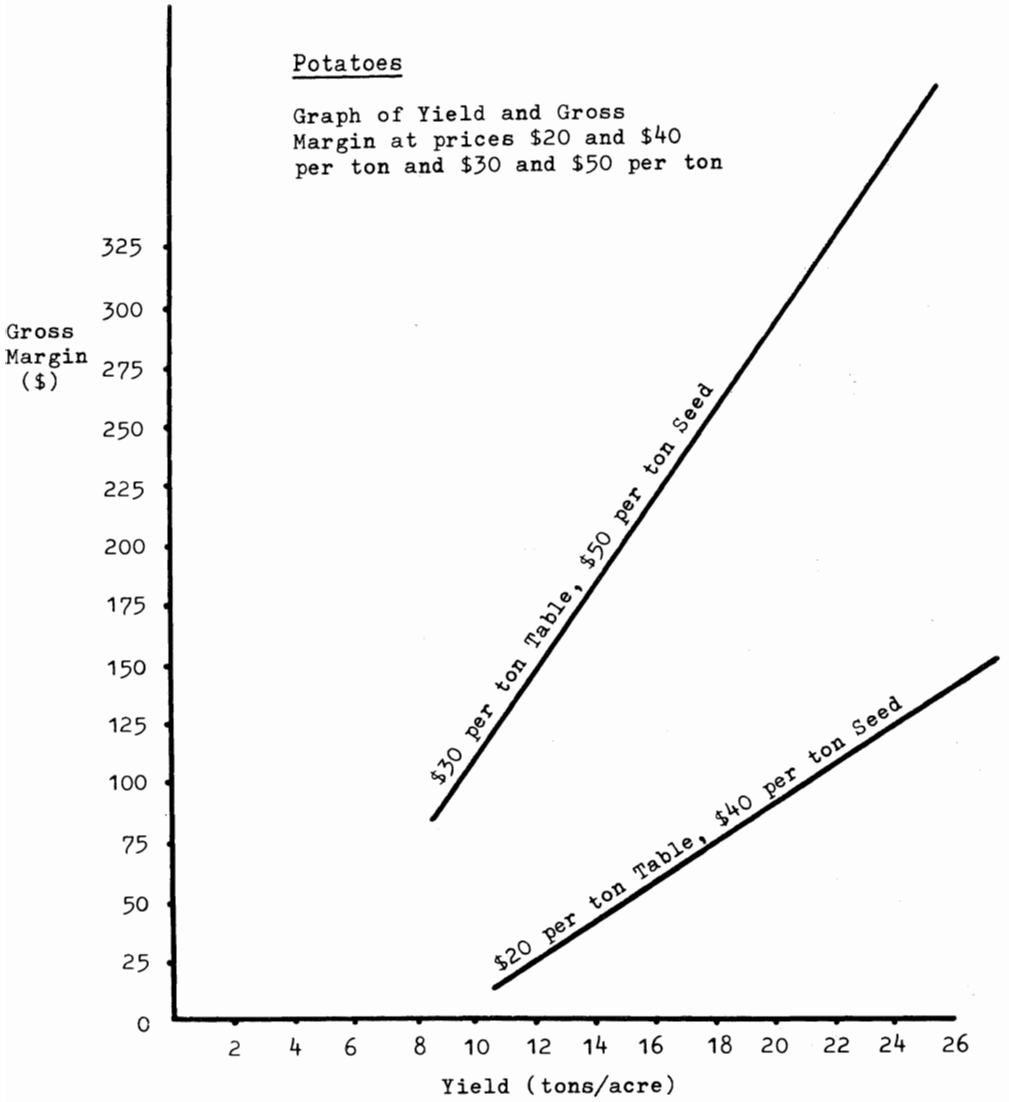
Gross Margins

$320 - 295.85 = $24.15

$440 - 295.85 = $144.15

b. Gross Revenue

14 tons table @ $20	$280	
7 tons seed @ $40	$280	
		$560
14 tons table @ $30		$420
7 tons seed @ $50		$350
		$770


Potatoes
Graph of Yield and Gross Margin at prices $20 and $40 per ton and $30 and $50 per ton
Gross Margin ($)
325
300
275
250
225
200
175
150
125
100
75
50
25
0
2
4
6
8
10
12
14
16
18
20
22
24
26
Yield (tons/acre)
$30 per ton Table, $50 per ton Seed
$20 per ton Table, $40 per ton Seed

Direct Costs	$	
Cultivation	3.60	
Seed	61.00	
Fertilizer	4.80	
Spraying	1.61	
Picking 294 bags @ $0.3	88.20	
Cartage 294 bags to grader @ $0.08	23.52	
294 bags F.O.B. table @ $2.54/ton	35.56	
F.O.R. seed @ $1.11/ton	7.77	
3 cwt Fert. @ $0.08	.24	
Sacks 294 @ $0.25	73.50	
Grading 21 tons @ $6.00	126.00	
Levy 14 tons @ $2.50	35.00	
Certification	2.00	
Total Direct Costs		$462.80

Gross Margins

$560 - 462.80 = $97.20

$770 - 462.80 = $307.20

9. Wheat u/s White Clover

Part (a)

Wheat

50 bus. @ $1.30 ($1.45 less approx 15 c withheld) $65.00

Direct Costs	$	
Cultivation 4 hrs @ $0.3	1.20	
Seed 1.5 bus. @ $2.515	3.77	
Fertilizer 1 cwt super @ $1.18	1.18	
Harvesting, Heading 1/3 hr @ $0.4	.13	
Sacks 17 @ $0.11	1.87	
Cartage 17 sacks @ $0.15	2.55	
Levy $0.69/50 bus.	.69	
Total Direct Costs		$11.30

Gross Margin

$65.00 - 11.39

= 53.61

White Clover

(i) Gross Revenue

160 lbs @ $0.28 $44.8

Direct Costs	$	
Cultivation 1 hr @ $0.30	.30	
Seed 3 lbs clover @ $0.45	1.35	
1 cwt Reverted super @ $1.12	1.12	
Harvesting, Mowing 2/3 hr @ $0.3	.20	
Heading 1 hr @ $0.4	.40	
Bailing, Carting, Twine	.30	
Sacks 2 @ $0.11	.22	
Twine	.02	
Cartage 2 sacks @ $0.15	.30	
1 cwt Fert. @ $0.08	.08	
Dressing and Certification 160 lbs @ $.064	10.24	
Total Direct Costs		$14.53

Gross Margin

$44.80 - 14.53

= $30.27

(ii) White Clover

Gross Revenue

320 lbs @ $0.28 $89.60

Direct Costs		$	
Cultivation)		.30	
Seed)	Same as	1.35	
Fertilizer)	above	1.12	
Mowing)		.20	
Heading)		.40	
Baling etc		.30	
Sacks 4 @ $0.11		.44	
Twine		.02	
Cartage 4 sacks @ $0.15		.60	
1 cwt Fert. @ $0.08		.08	
Dressing and Certification 320 lbs @ $0.064		20.48	
Total Direct Costs			$25.29

Gross Margin

$89.60 - 25.29

= $64.31

The yearly Gross Margin for a wheat-white clover rotation is as follows:

$$\frac{\text{G.M. wheat} + \text{G.M. White clover}}{2}$$

Therefore in case (i) 50 bus wheat + 160 lbs w.c. gives a yearly G.M. of:

$$\frac{\$53.61 + 30.27}{2}$$

= $42.46/ year

In case (ii) 50 bus. wheat + 320 lbs w.c. gives a yearly G.M. of

$$\frac{\$53.61 + 64.31}{2}$$

= $58.96/year

The effect on the yearly G.M. if wheat yield is increased to 70 bus. can be seen thus:

Gross Revenue		
70 bus. @ $1.30		$91.00
Direct Costs	**$**	
Cultivation 4 hrs @ $0.3	1.20	
Seed 1.5 bus. @ $2.515	3.77	
Harvesting, Heading @ ½ hr @ $0.4	.20	
Sacks	2.53	
Cartage 23 sacks @ $0.15	3.45	
Levy $0.69/50 bus.	.96	
Raking + Ploughing for fire break 1/3 hr @ $0.3	.10	
Total Direct Costs		$12.21

Gross Margin

$91.00 - 12.21

$78.88

White Clover

(i) G.M. for yield of 160 lbs/ac $30.27

(ii) G.M. for yield of 320 lbs/ac $64.31

Therefore yearly G.M. for case (1) 70 bus. wheat + 160 lbs clover, is:

$$\frac{\$78.88 + 30.27}{2} = \$54.57$$

In case (ii) 70 bus wheat + 320 lbs clover gives a yearly G.M. of:

$$\frac{\$78.88 + 64.31}{2}$$

= $71.59

Summary of wheat - w.c. G.M.'s.

	160 lbs w.c.	320 lbs w.c.
50 bus/ac	$42.46	$58.96
70 bus/ac	$54.57	$71.59

10. Greenfeed

	$
Cultivation 2 hrs @ $0.30	.60
Seed 2 bus. Alg. Oats @ $1.35	2.70
Fertilizer 1 cwt super @ $1.18	1.18
Cartage 1 cwt super @ $0.09	.09
Total Direct Costs	$4.57

Forage Crop Seeds

Forage crop seeds are not taken off the College farms. A property in the Highbank area on Barrhill sil loam was used to collect the following data. In this analysis both yield and price are varied for each of the crops to show the effect of variation of these two parameters on the Gross Margin.

11. Rape (ex old Grass)

a. Gross Revenue

700 lbs @ $0.075 $52.50
700 lbs @ $0.15 $105.00

Direct Costs	$
Cultivation 6 hrs @ $0.3	1.80
Seed 5lbs @ $0.25	1.25
Fertilizer 1½ cwt Serp. super @ $1.18	1.77
Harvesting, Windrowing	2.20
Heading 1 hr @ $0.4	.40
Cartage sacks 6 @ $0.12	.31
Fertilizer 1½ cwt @ $0.21	.31
Sacks 6 @ $0.08	.48
Twine 6 @ $0.01	.06
Sundry	.30
Total Direct Costs	$9.29

Gross Margins =

$52.50 - 9.29 = $43.21

$105.00 - 9.29 = $95.71

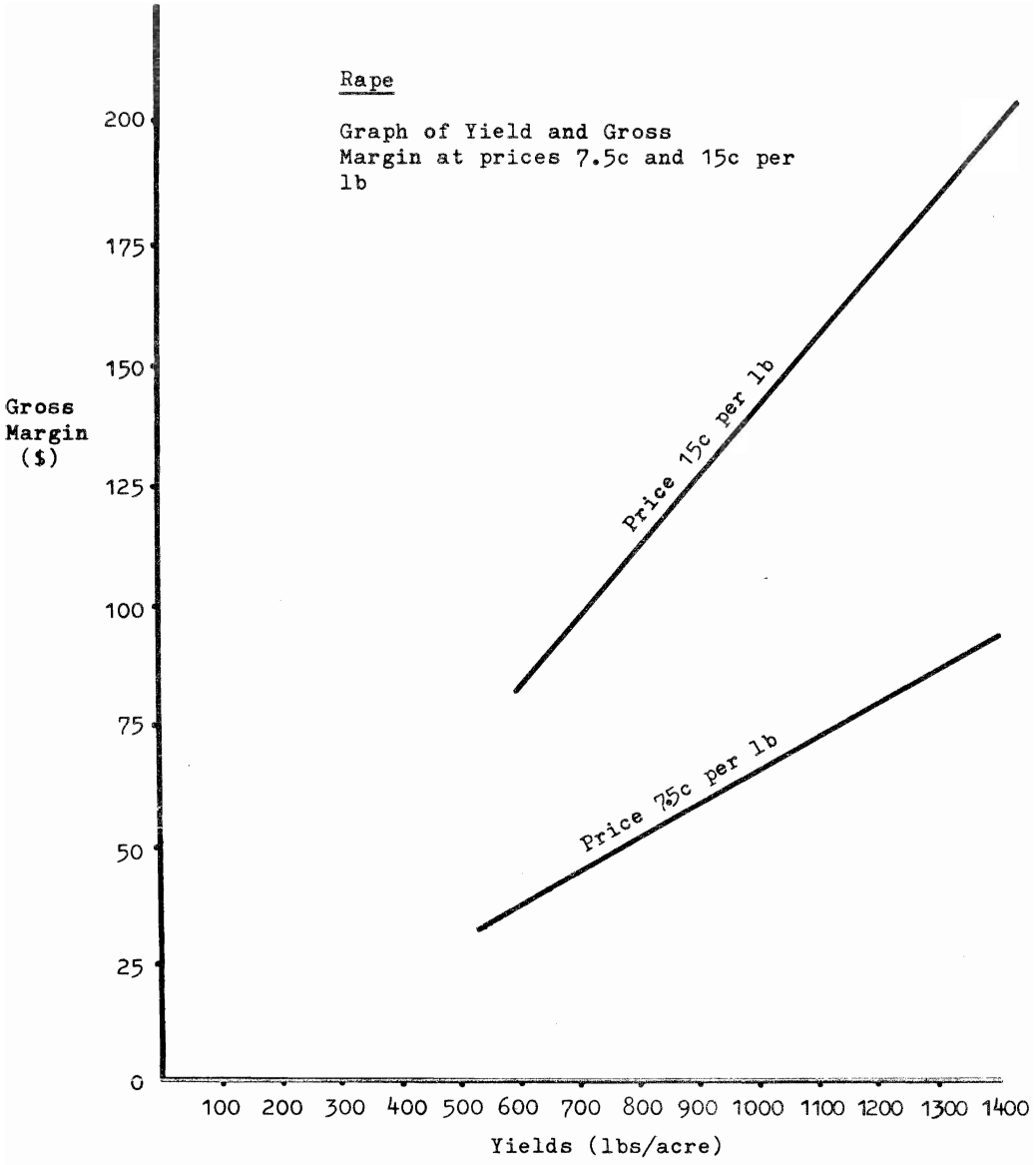
b. Gross Revenue

1000 lbs @ $0.075 $75.00
1000 lbs @ $0.15 $150.00

Direct Costs		$
Cultivation)	Sames as	1.80
Seed)	above	1.25
Fertilizer)		1.77

Rape

Graph of Yield and Gross Margin at prices 7.5c and 15c per lb



Direct Costs	$
Windrowing) Same as	2.20
Heading) above	.40
Cartage sacks 9 @ $0.12	1.08
Fertilizer 1½ cwt @ $0/21	.31
Sacks 9 @ $0.08	.72
Twine 9 @ $0.01	.09
Total Direct Costs	$9.62

Gross Margins

$75.00 - 9.62 = $65.38

$150.00 - 9.62 = $140.38

c. Gross Revenue

1400 lbs at $0.075 $105.00
1400 lbs at $0.150 $210.00

Direct Costs	$
Cultivation	1.80
Seed	1.25
Fertilizer	1.77
Windrowing	2.20
Heading	.40
Cartage Sacks 12 at $0.12	1.44
Fertilizer 1½ cwt at $0.21	.31
Sacks 12 at $0.08	.96
Twine 12 at $0.01	.12
Total Direct Costs	$10.25

Gross Margins

$105.00 - 10.25 = $94.75

$210.00 - 10.25 = $199.75

Summary of Rape Seed Gross Margins

	Yield		
Price	700 lbs	1000 lbs	1400 lbs
$0.075	$43.21	$65.38	$94.75
$0.150	$95.71	$140.38	$199.75

12. Chou Seed

a. Gross Revenue

300 lbs at $0.25 $75.00
300 lbs at $0/30 $90.00

Direct Costs	$	
Cultivation 6 hrs at $0.30	1.80	
Seed 6lbs at $0.35	2.10	
Fertilizer 3 cwt Serp. Super at $1.18	3.54	
Harvesting Windrowing at $2.5	2.50	
Heading 1 hr at $0.4	.40	
Cartage Sacks 3 at $0.14	.42	
Fertilizer 3 cwt at $0.21	.63	
Sacks 3 at $0.08	.32	
Twine 3 at $0.01	.03	
Sundry	.30	
Total Direct Costs		$12.04

Gross Margins

$75.00 - 12.04 = $62.96

$90.00 - 12.04 = $77.96

b. Gross Revenue

500 lbs at $0.25 $125.00
500 lbs at $0.30 $150.00

Direct Costs	$	
Cultivation)	1.80	
Seed) Same as	2.10	
Fertilizer) above	3.54	
Windrowing)	2.50	
Heading)	.40	
Cartage Sacks 5 at $0.14	.70	
Fertilizer 3 cwt at $0.21	.63	
Sacks 5 at $0.08	.40	
Twine 5 at $0.01	.05	
Sundry	.30	
Total Direct Costs		$12.42

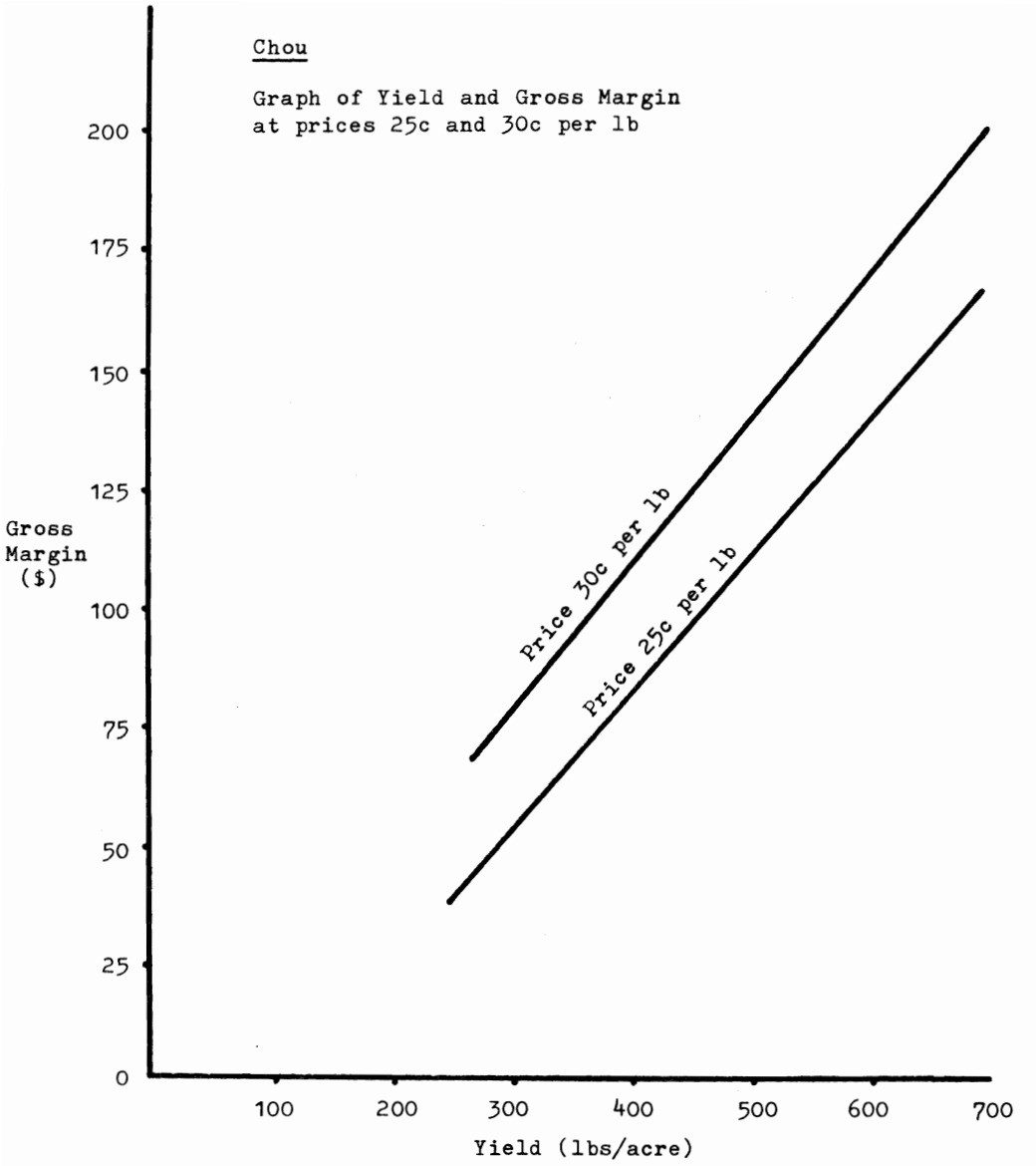
Gross Margins

$125.00 - 12.42 = $112.58

$150.00 - 12.42 = $137.58

c. Gross Revenue

700 lbs at $0.25 $175.00
700 lbs at $0.30 $210.00


Chou
Graph of Yield and Gross Margin
at prices 25c and 30c per lb
200
175
150
125
100
75
50
25
0
Gross
Margin
($)
Price 30c per lb
Price 25c per lb
100
200
300
400
500
600
700
Yield (lbs/acre)

Direct Costs	$	
Cultivation	1.80	
Seed	2.10	
Fertilizer	3.54	
Windrowing	2.50	
Heading	.40	
Cartage Sacks 7 at $0.14	.98	
Fertilizer 3 cwt at $0.21	.63	
Sacks 7 at $0.08	.56	
Twine 7 at $0.01	.07	
Sundry	.30	
Total Direct Costs		$12.88

Gross Margins

$175.00 - 12.88 = $162.12

$210.00 - 12.88 = $197.12

Summary of Chou Seed Gross Margins Yield

Price	300 lbs	500 lbs	700 lbs
$0.25	$62.96	$112.58	$162.12
$0.30	$77.96	$137.58	$197.12

B. Pastures

Estimates of the costs and returns from pasture are complicated by the fact that the average annual costs depend upon the life of the pasture and also because returns may be in the form of livestock or pasture seeds. That is there is a complementary relationship between the alternative products from pasture.

The following is an estimate of the annual average direct costs per acre of pasture, based on a five year life and excluding any direct costs associated with the harvesting of small seeds.

1. Summer Fallow to New Grass

Establishment	$	
Cultivation 7.5 hrs at $0.30	2.25	
Seed 1 bus. Ped. at $2.2	2.20	
3 lbs Ped. wc at $0.45	1.35	
Lime 1 ton	6.00	
Super 2 cwt	2.36	
Cartage	.16	
		14.32

Maintenance (Total 5 years)

2 cwt ĐDT super (standard)	4.16	
8cwt super	9.46	
Cartage	.80	
Contract topdressing	2.40	
		$16.82

Total Cost (Establishment and 5 year maintenance) $31.14

Annual Cost - $6.23

2. Lucerne

Establishment	$	
Cultivation 6 hrs at $0.30	1.80	
Seed 12 lbs at $0.75	9.00	
Lime 1 ton at $6.00	6.00	
Fertilizer 2 cwt Reverted super	2.24	
Cartage	.16	
		$19.20

Estimated life of stand - 7 years

Therefore, annual average establishment cost
$19.20 ÷ 7 = $2.74

Maintenance

Fertilizer 2 cwt (200 lb) S. Super	2.70	
Spreading	.48	
Cartage	.16	
Lime	2.00	
		$ 5.34

Therefore, annual average total cost
$2.74 + 5.34 = $8.08

Haymaking

a. Own baling and carting

Estimated yield 120 bales/acre	$	
Mowing + raking 5 hrs at $0.3	1.50	
Baling 1½ hrs at $0.3 (tractor)	.45	
1½ hrs at $0.3 (baler)	.45	
Twine 120 at $.025	3.00	
Carting 1.5 hrs at $0.4	.60	
		$ 6.00
Add annual average cost of lucerne stand		8.08
		$14.08

Cost per bale $\frac{\$14.08}{120}$ = $0.117

Note: Excludes storage and insurance

b. Contract baling and carting

	$	
Mowing and raking	1.50	
Baling 120 bales at $0.1	12.00	
Carting 120 bales at £0.075	9.00	
		$22.50
Add annual average cost of lucerne stand		8.08
		$30.58

Cost per bale $\frac{\$39.58}{120}$ = $0.25

3. Lucerne Hay for Sale

a. Own baling and carting

Gross Revenue

120 bales at $0.5 per bale (the equivalent of $15.00 per ton) 60.00

Direct Costs

120 bales at $0.117 per bale 14.08

Gross Margin

$60.00 - 14.08

$45.92

b. Contract baling and carting

Gross Revenue

120 bales at $0.5 per bale (the equivalent of $15 per ton) 60.00

Direct Costs

120 bales at $0.25 per bale 30.58

Gross Margin

$60.00 - 30.58

$29.42

Note: Excluding storage and insurance

C. Small Seeds

1. White Clover Seed from Pasture

Gross Revenue

80 lbs at $0.22 per 1 lb $17.6
80 lbs at $0.28 per 1 lb $22.4

Direct Costs	$
Harvesting, Mowing 2/3 hr at $0.3	.20
Baling, Baling Twine etc.	.30
Heading 1 hr at $0.4	.40

Direct Costs	$	
Sacks 1 at $0.11	.11	
Twine 1 at $0.01	.01	
Dressing and Certification 80 lbs at $0.064	5.12	
Cartage 1 bag at $0.17	.17	
Total Direct Costs		$6.31

Gross Margins

$17.6 - 6.31 = $11.29

$22.4 - 6.31 = $16.09

Gross Revenue

160 lbs at $0.22 $35.2
160 lbs at $0.28 $44.8

Direct Costs	$	
Harvesting, Mowing 2/3 hr at $0.3	.20	
Baling, Baling twine etc	.30	
Heading 1 hr at $0.4	.40	
Sacks 2 at $0.11	.22	
Twine 2 at $0.01	.02	
Cartage 2 bags at $0.17	.34	
Dressing and Certification 160 lbs at $0.064	10.24	
		$11.72

Gross Margins

$35.2 - 11.72 = $23.48

$44.8 - 11.72 = $33.08

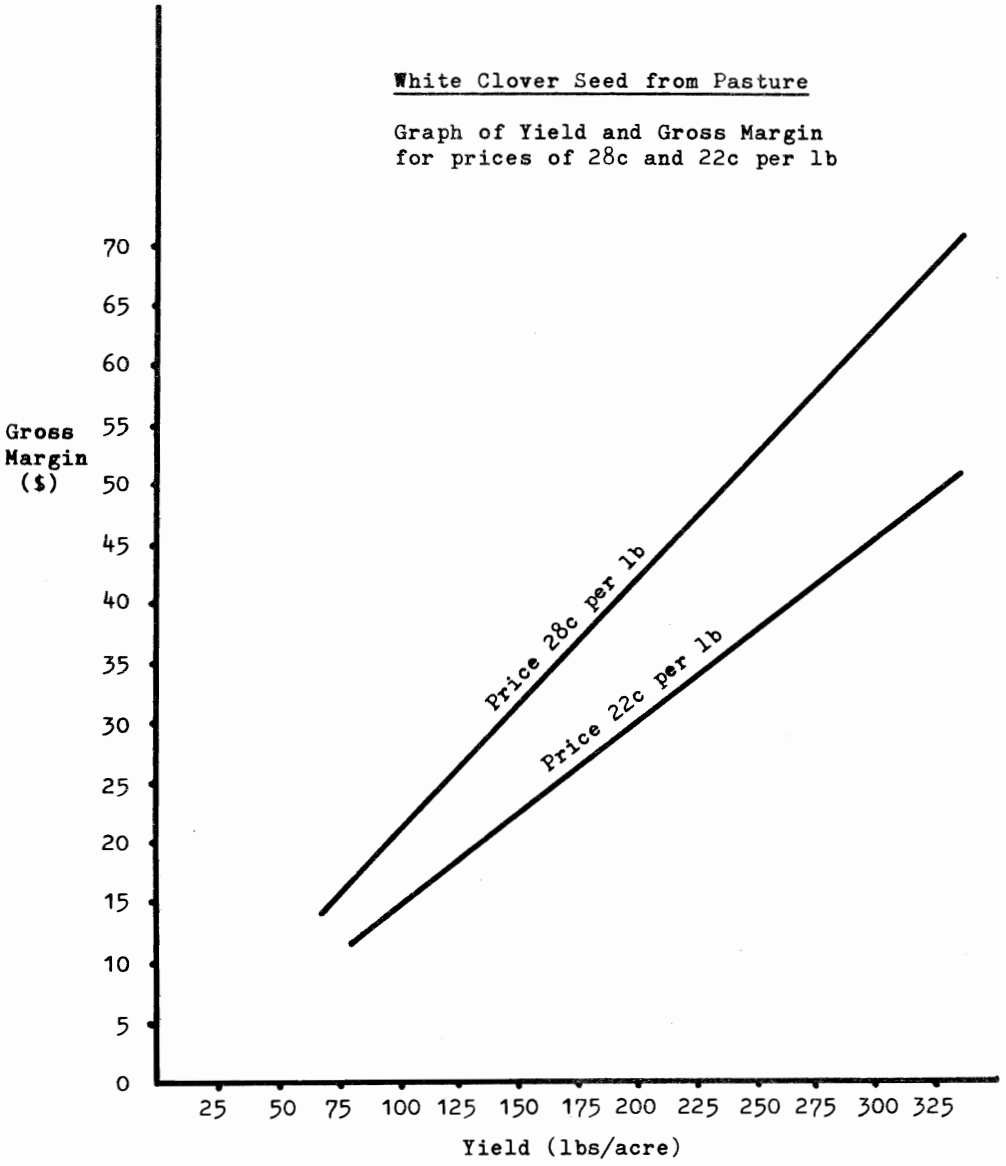
Gross Revenue

320 lbs at $0.22 $70.4
320 lbs at $0.28 $89.6

Direct Costs	$	
Harvesting, Mowing 2/3 hr at $0.3	.20	
Baling, Baling Twine etc	.30	
Heading 1 hr at $0.4	.40	
Sacks 4 at $0.11	.44	
Twine 4 at $0.01	.04	
Cartage 4 bags at $0.17	.68	
Dressing and Certification 320 lbs at $0.064	20.48	
Total Direct Costs		$22.54

White Clover Seed from Pasture

Graph of Yield and Gross Margin
for prices of 28c and 22c per lb



Gross Margins

$70.4 - 22.54 = $47.86

$69.6 - 22.54 = $67.06

2. Short Rotation Ryegrass Seed from Pasture

Gross Revenue

30 bus at $1.50 $45.00
30 Bus at $2.50 $75.00

Direct Costs	$	
Nitrogen 2 cwt S/A	5.46	
Harvesting, Mowing 5 hrs at $0.3	.15	
Heading ¼ hr at $0.4	.10	
Sacks 10 at $0.138	1.38	
Twine 10 at $0.01	.10	
Cartage 10 at $0.11	1.10	
1½ cwt Fert. At $0.08	.12	
Spreading Nitrogen	.48	
Dressing and certification 30 bus at $0.308	9.24	
Total Direct Costs		$18.13

Gross Margins

$45.00 - 18.13 = $26.87

$75.00 - 18.13 = $56.87

Gross Revenue

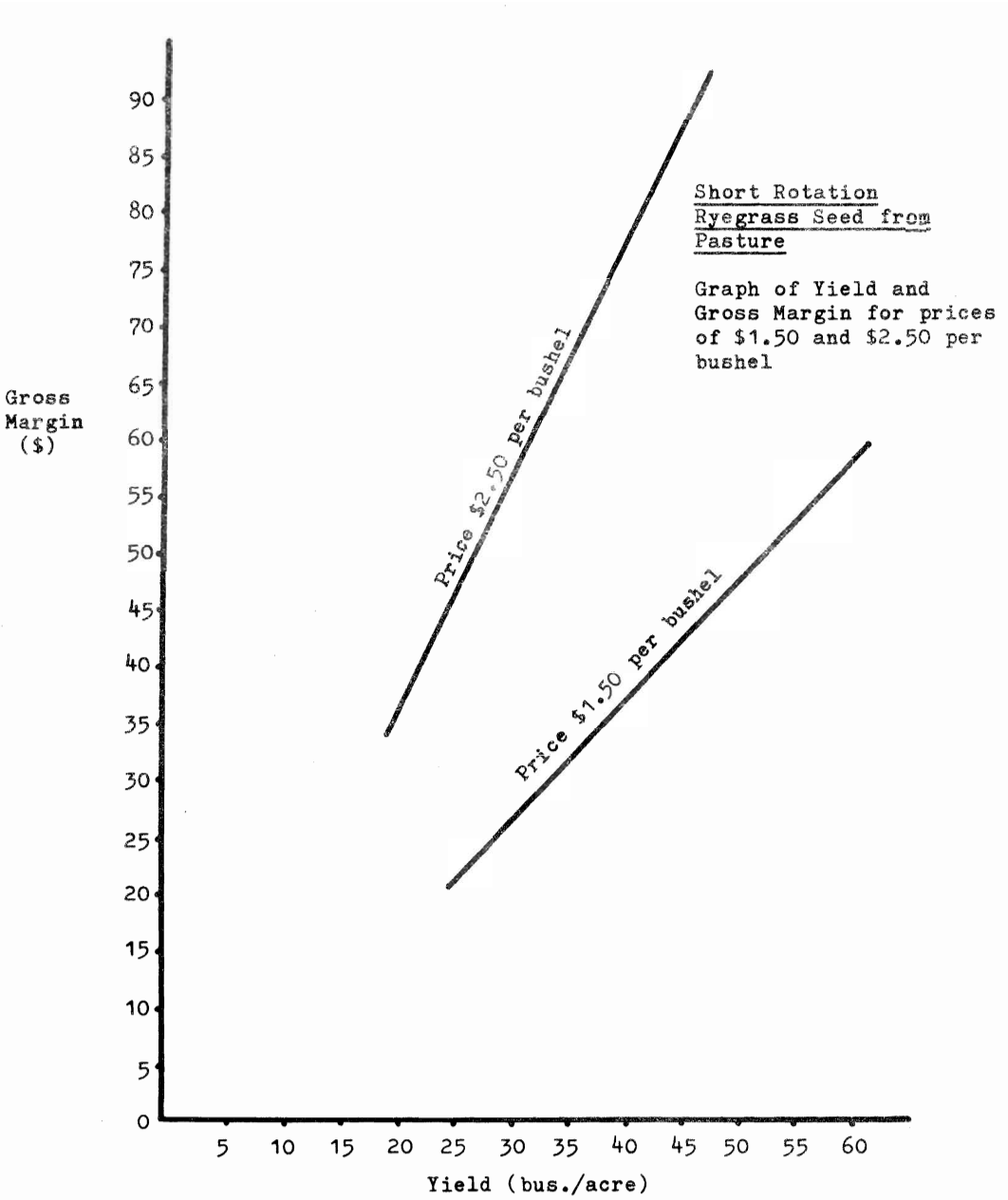
40 bus at $1.50 $60.00
40 bus at $2.50 $100.00

Direct Costs	$	
Nitrogen 2 cwt S/A	5.46	
Harvesting, Mowing ½ hr at $0.3	.15	
Heading ¼ hr at $0.4	.10	
Sacks 13 at $0.138	1.79	
Twine 13 at $0.01	.13	
Cartage 13 at $0.17	2.21	
1½ cwt Fert. at $0.08	.12	
Spreading Nitrogen	.48	
Dressing and Certification 40 bus at $0.308	12.32	
Total Direct Costs		$22.76

Gross Margin

$60.00 - 22.76 = $37.24

$100.00 - 22.76 = $78.24


Short Rotation Ryegrass Seed from Pasture
Graph of Yield and Gross Margin for prices of $1.50 and $2.50 per bushel
Gross Margin ($)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
Price $2.50 per bushel
Price $1.50 per bushel
5
10
15
20
25
30
35
40
45
50
55
60
Yield (bus./acre)

Gross Revenue

50 bus at $1.50 $75.00
50 bus at $2.50 $125.00

Direct Costs	$	
Nitrogen 2 cwt S/A	5.46	
Harvesting, Mowing ½ hr at $0.3	.15	
Heading 1/3 hr at $0.4	.10	
Sacks 17 at $0.138	2.35	
Twine 17 at $0.01	.17	
Cartage 17 at $0.11	1.87	
1½ cwt Fert. at $0.08	.12	
Spreading Nitrogen	.48	
Dressing and Certification 50 bus. at $0.308	15.40	
Total Direct Costs		$26.10

Gross Margin

$75.00 - 26.10 = $48.90

$125.00 - 26.10 = $98.90

3. Ryegrass Straw

Gross Revenue

30 bales at $0.20 $6.00

Direct Costs	$	
Harvesting, Baling 1/3 hr at $0.30	.10	
Carting 1/3 hr at $0.40	.13	
Baler engine 1/3 hr at $0.30	.10	
Twine, Baling 30 bales at $.025	.75	
Total Direct Costs		$1.08

Gross Margin

$6.00 - 1.08

= $4.92

(This figure should be added to the figure for Gross Margin for Ryegrass seed to obtain the effective Gross Margin per acre)

4. Cocksfoot (ex Summer fallow, 8 year life)

Establishment	$
Summer Fallow 7.5 hrs at $0.30	2.25
3 lbs Coxfoot at $0.60	1.80
3 lbs W.C. at $0.40	1.20
2 cwt super at $1.18	2.36
	$7.61

Therefore average annual establishment cost:

$$\frac{\$7.61}{8} = \$0.95$$

a. Gross Revenue

100 lbs at $0.25 $25.00
100 lbs at $0.50 $50.00

Direct Costs	$	
Average renewal	0.95	
3 cwt Nitrogen S/A	8.20	
Harvesting $2.00 per acre	2.00	
Heading 1 hr at $0.40	.40	
Sacks 2 at $0.138	.27	
Twine 2 at $0.01	.02	
Cartage 2 sacks at $0.11	.22	
3 cwt N. at $0.08	.24	
Spreading Nitrogen	.48	
Dressing and Certification 100 lbs at $0.05	5.00	
Total Direct Costs		$17.78

Gross Margins

$25.00 - 17.78 = $7.22

$50.00 - 17.78 = $32.22

b. Gross Revenue

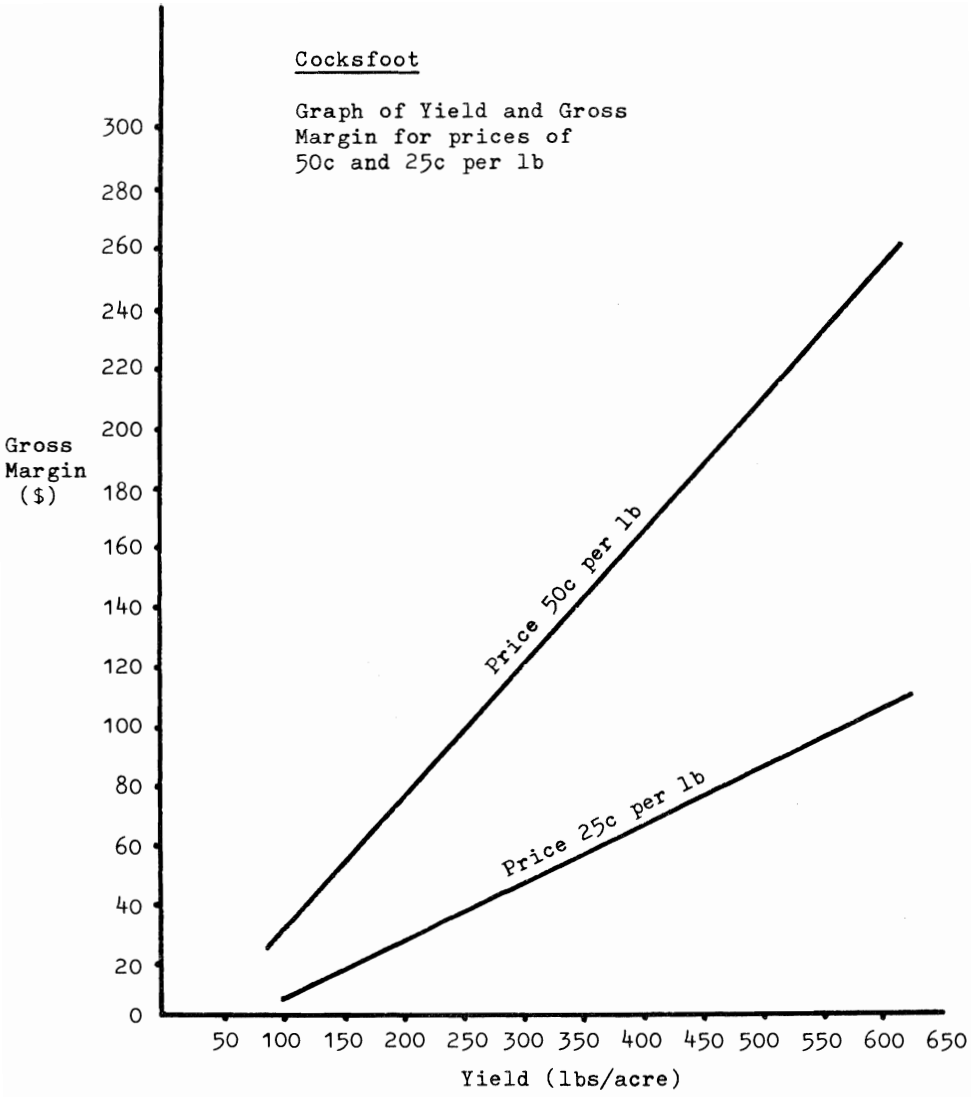
300 lbs at $0.25 $75.00
300 lbs at $0.50 $150.00

Direct Costs		$	
Average renewal	)	0.95	
3 cwt Nitrogen	) Same as	8.20	
Harvesting	) above	2.00	
Heading	)	.40	
Sacks 6 at $0.138		.83	
Twine 6 at $0.01		.06	
Cartage 6 sacks at $0.11		.66	
3 cwt Nitrogen at $0.08		.24	
Spreading Nitrogen		.48	
Dressing and Certification 300 lbs at $0.05		15.00	
Total Direct Costs			$28.82

Gross Margins

$75.00 - 28.32 = $46.18

$150.00 - 28.82 = $121.18


Cocksfoot
Graph of Yield and Gross Margin for prices of 50c and 25c per lb
Gross Margin ($)
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
Price 50c per lb
Price 25c per lb
50 100 150 200 250 300 350 400 450 500 550 600 650
Yield (lbs/acre)

c. Gross Revenue

500 lbs at $0.25 $125.00

500 lbs at $0.50 $250.00

Direct Costs	$	
Average renewal	0.95	
3 cwt Nitrogen	8.20	
Harvesting	2.00	
Heading	.40	
Sacks 10 at $0.138	1.38	
Twine 10 at £0.01	.10	
Cartage 10 at $0.11	1.10	
3 cwt Nitrogen at $0.08	.24	
Spreading Nitrogen	.48	
Dressing and certification 500 lbs at $0.05	25.00	
Total Direct Costs		$39.85

Gross Margins

$125.00 - 39.85 = $85.15

$250.00 - 39.85 = $210.15

1. Sheep

The Gross Margins for (1) Ewe Flock, (2) Buying in 2T replacements and, (3) 2 year Fat lamb Ewe Flock, have been calculated using these different sets of prices. The wool prices refer to a crossbred flock.

	Lamb	Wool
Low prices	$4/head	18 cents
Average prices	$4.5/head	25 cents
High prices	$5/head	32 cents

1. Ewe Flock (Breeding own replacements)

Feed requirements 1.154 S.U.
(5 lambs/Ewe 110% lambing)

a. Low Prices

Gross Revenue (including replacement)	$	
Lamb 0.89 at $4	3.56	
Wool Hogget (6lbs) and Ewe (10.5 lbs) 11.7 lbs at 18 cents	2.11	
Culled Ewe .15 at $2.50	.37	
		$6.04

Direct Costs (including replacement)

	$	
Shearing 1.2 at $15.00/100	.18	
Crutching 1.2 at $5.00/100	.06	
Vaccination	.05	
Drenching	.05	
Docking	.01	
Footrot	.01	
Dipping 1.2 at .04	.05	
Ram cost net	.10	
Cartage of C.F.A. Ewe 1/5th of $0.09	.02	
Total Direct Costs		$0.53

Gross Margin

$6.04 - 0.53

= $5.51

b. Average Prices

Gross Revenue

Lamb .89 at $4.5	4.00	
Wool Hogget (6lbs) and Ewe (10.5 lbs) 11.7 lbs at 25 cents	2.92	
Culled Ewe .15 at $2.5	.37	
		$7.20
Direct Costs		$0.53

Gross Margin

$7.20 - 0.53

= $6.66

c. High Prices

Gross Revenue	$	
Lamb .89 at $5	4.45	
Wool Hogget (6 lbs) and Ewe (10.5 lbs) 11.7 lbs at 32 cents	3.74	
Culled Ewe 0.15 at $2.50	.37	
		$8.56
Direct Costs		0.53

Gross Margin

$8.65 - 0.53

= $8.03

2. Buying in 2T replacements

Feed requirement 1.014 S.U.

(110% lambs, 5 lambings/ewe)

a. Low Prices

Gross Revenue	$	
Lambs 1.1 at $4	4.40	
Wool 10.5 lbs at 18 cents	1.89	
Culled Ewe 1/5th at $2.5	.50	
		$6.79
Direct Costs	$	
Replacement .25 (deaths 5%) at $8	2.00	
Shearing $15.00/100	.15	
Crutching $5.00/100	.05	
Vaccination	.05	
Drenching	.05	
Docking	.01	
Footrotting	.01	
Dipping	.05	
Ram cost net	.10	
Cartage of culled ewe and 2T	.08	
Total Direct Costs		$2.55

Gross Margin

$6.79 - 2.55

$4.24

b. Average Prices

Gross Revenue	$	
Lambs 1.1 at $4.50	4.95	
Wool 10.5 lbs at 25 cents	2.62	
Culled Ewe 1/5th at $2.5	.50	
		$8.07
Direct Costs		$2.55

Gross Margin

$8.07 - 2.55

= $5.52

c. High Prices

Gross Revenue	$	
Lambs 1.1 at $5.00	5.50	
Wool 10.5 lbs at 32 cents	3.36	
Culled Ewe 1/5th at $2.5	.50	
		$9.36
Direct Costs		$2.55

Gross Margin

$9.36 - 2.55

= $6.81

3. 2 year Fat Lambe Ewe Flock S.U. = 1.014

a. Low Prices

Gross Revenue (lambing 115%)	$	
Lambs 1.15 at $4 net	4.60	
Wool 10 lbs at 18 cents	1.80	
Culled Ewe ½ at $2.5	1.25	
		$7.65
Direct Costs	**$**	
Ewe replacement ½ + 0.05 (deaths) at $5	2.75	
Shearing at $15/100	.15	
Crutching at £5/100	.05	
Vaccination	.05	
Drenching	.05	
Dipping	.05	
Docking	.01	
Footrotting	.01	
Ram Costs (net)	.10	
Cartage	.11	
Total Direct Costs		$3.33

Gross Margin

$7.65 - 3.33

= $4.32

b. Average Prices

Gross Revenue	$	
Lambs 1.15 at $4.5	5.17	
Wool 10 lbs at 25 cents	2.50	
Culled Ewe ½ at $2.5	1.25	
		$8.92
Direct Costs		$3.33

Gross Margin

$8.92 - 3.33

= $5.59

c. High Prices

Gross Revenue	$	
Lambs 1.15 at $5.00	5.75	
Wool 10 lbs at 32 cents	3.20	
Culled Ewe ½ at $2.5	1.25	
		$10.20
Direct Costs		$ 3.33

Gross Margin

$10.20 - 3.33

= $6.87

4. Hoggets (winter fattening)

Gross Revenue	$	
One hogget at $6.5 net	6.50	
Wool 6½ lbs at 25cents(average price)	1.62	
		$ 8.12

Direct Costs	$
Replacement of Hogget and deaths 1.05 at $5 net	5.25
Shearing $15.00/100	.15
Crutching $5.00/100	.05
Drenching	.05
Footrot	.01
Dipping	.05
Cartage	.18
Total Direct Costs	$5.74

Gross Margin

$8.12 - 5.74

= $2.38

5. Selling Ewes and Lambs all Counted

Feed requirement 0.014 S.U. for complete year
1.00 S.U. for winter period

110% lambing

Gross Revenue	$	
Ewe 1 at $3.8	3.80	
Lamb 1.1 at $3.8	4.18	$ 7.98

Direct Costs	$	
Replacement 1.05 at $4.50	4.72	
Crutching $5.00/100	.05	
Docking	.01	
Footrot	.01	
Ram Cost (net)	.10	
Cartage	.22	
Total Direct Costs		$5.11

Gross Margin

$7.98 - 5.11

= $2.87

SUMMARY

A. CROPS (per acre)

		Yield	Price $	Gross Rev.	Direct Cost	Gross Margin
				$	$	$
1.	Garden Peas (ex old grass)	25 bus.	1.2	30.0	20.12	9.88
			1.6	40.0	20.12	19.88
			2.0	50.0	20.12	29.88
		35 bus.	1.2	42.0	21.15	20.85
			1.6	56.0	21.15	34.85
			2.0	70.0	21.15	48.85
		45 bus.	1.2	54.0	22.14	31.86
			1.6	72.0	22.14	49.86
			2.0	90.0	22.14	67.86
2.	Partridge Peas	25 bus.	1.2	30.0	15.58	14.42
			1.6	40.0	15.58	24.42
			2.0	50.0	15.58	34.12
		35 bus.	1.2	42.0	16.61	25.39
			1.6	56.0	16.61	39.39
			2.0	70.0	16.61	53.39
		45 bus.	1.2	54.0	17.60	36.40
			1.6	72.0	17.60	54.40
			2.0	90.0	17.60	72.40
3.	Vining Peas (ex old grass or Chou)					
		2500 lbs	$72/tn	80.35	22.2	58.15
		3500 lbs	$64/tn	99.99	22.2	77.79
		4500 lbs	$56/tn	112.50	22.2	90.30
4.	Wheat (ex peas) Aotea	30 bus.	1.30	39.00	7.88	31.12
		50 bus.	1.30	65.00	10.01	54.99
		70 bus.	1.30	91.00	11.91	79.09

		Yield	Price $	Gross Rev.	Direct Cost	Gross Margin
	Hilgendorf	30 bus.	1.50	45.0	8.28	36.72
		50 bus.	1.50	75.0	10.41	64.59
		70 bus.	1.50	105.0	12.31	92.69
	Arawa	30 bus.	1.28	38.40	7.86	30.54
		50 bus.	1.28	64.00	9.99	54.01
		70 bus.	1.28	89.60	11.89	77.71
5.	Wheat (ex wheat)	45 bus.	1.30	58.50	1.64	46.86
6.	Wheat Bulk (ex peas)	50 bus.	1.30	72.50	7.10	65.40
7.	Barley	50 bus.	0.95	47.50	12.24	35.26
		60 bus.	0.95	57.00	13.02	43.98
		70 bus.	0 95	66.50	13.80	52.70
8.	Potatoes	12 tons	20.00 & 40.00 30.00	320.0	295.85	24.15
		12 tons &	50.00 20.00	440.0	295.85	144.15
		21 tons &	40.00 20.00	560.0	462.80	97.20
		21 tons &	40.00	770.0	462.80	307.20

		Yield	Price $	Gross Rev. $	Direct Costs $	Gross Margin $	
9.	Wheat W.C.						
	W	50 bus.	1.30	65.00	11.39	53.61)	42.46
	W.C.	160 lbs	0.28	44.8	14.53	30.27)	
	W	50 bus.	1.30	65.00	11.39	53.61)	58.96
	W.C.	320 lbs.	0.28	89.60	25.29	64.31)	
	W	70 bus.	1.30	91.00	12.21	78.88)	54.57
	W.C.	160 lbs.	0.28	44.8	14.53	30.27)	
	W	70 bus.	1.30	91.00	12.21	78.88)	71.59
	W.C.	320 lbs.	0.28	89.60	25.29	64.31)	
10.	Greenfeed				4.57		
11.	Rape	700 lbs	0.075	52.50	9.29	43.21	
			0.15	105.00	9.29	95.71	
		1000 lbs.	0.075	75.00	9.62	65.38	
			0.15	150.00	9.62	140.38	
		1400 lbs.	0.075	105.00	10.25	94.75	
			0.15	210.00	10.25	199.75	
12.	Chou	300 lbs.	0.25	75.00	12.04	62.96	
			0.30	90.00	12.04	77.96	

	Yield	Price $	Gross Rev.	Direct Costs	Gross Margin
12. Chou					
	500 lbs	0.25	125.00	12.42	112.58
		0.30	150.00	12.42	137.58
	700 lbs	0.25	175.00	12.88	162.12
		0.30	210.00	12.88	197.12

B. PASTURE (5 year life)

1.	Establishment (ex fallow)	$14.32
	Maintenance	16.82
		$31.14
	Therefore, per acre per annum	$ 6.23
2.	Lucerne (7 year life)	
	Establishment (ex fallow)	$19.20
	Therefore average establishment cost	$ 2.74
	Annual maintenance	5.34
	Therefore annual direct costs	$ 8.08
	Haymaking (120 bales/ac yield)	
a.	Own baling and carting	
	Direct Costs	$ 6.00
	Add annual average cost of lucerne stand	8.08
		$14.08
	Cost per bale $0.117	
b.	Contract baling and carting	
	Direct Costs	$22.50
	Add annual average cost of lucerne stand	8.08
		$30.58

3. Lucerne Hay for sale	Yield	Price	Gross Rev.	Direct Costs	Gross Margin
a. Own baling and carting	120	0.50	60.00	14.08	45.92
b. Contract baling and carting	120	0.50	60.00	30.58	29.42

C. SMALL SEEDS

		Yield	Price	Gross Rev.	Direct Costs	Gross Margin
1.	White Clover	80 lbs	0.22	17.60	6.31	11.29
			0.28	22.40	6.31	16.09
		160 lbs	0.22	35.20	11.72	23.48
			0.28	44.80	11.72	33.08
		320 lbs	0.22	70.40	22.54	47.86
			0.28	89.60	22.54	67.06
2.	HI Ryegrass	30 bus.	1.50	45.00	18.13	26.87
			2.50	75.00	18.13	56.87
		40 bus.	1.50	60.00	22.76	37.24
			2.50	100.00	22.76	78.24
		50 bus.	1.50	75.00	26.10	48.90
			2.50	125.00	26.10	98.90
3.	Ryegrass Straw	30 bales	0.20	6.00	1.08	4.92
4.	Cocksfoot	100 lbs	0.25	25.00	17.78	7.22
			0.50	50.00	17.78	32.22
		300 lbs	0.25	75.00	28.82	46.18
			0.50	150.00	28.82	121.18
		500 lbs	0.25	125.00	39.85	85.15
			0.50	250.00	39.85	210.15

D. SHEEP

		Unit	Stock Units	Prices	Gross Rev. per Unit	Direct Costs Per Unit	Gross Margin Per Unit
1.	Ewe Flock (breeding own replacements)	1E +repl +rams	1.154	Low	6.04	0.53	5.51
				Average	7.29	0.53	6.66
				High	8.56	0.53	8.03
2.	Ewe Flock (buying 2T's)	1E +rams	1.014	Low	6.79	2.55	4.24
				Average	8.07	2.55	5.52
				High	9.36	2.55	6.81
3.	Ewe Flock (2 yr ewes)	1E +rams	1.014	Low	7.65	3.33	4.32
					8.92		5.59
				Average.		3.33	
					10.20		6.87
						3.33	
4.	Hoggets (wintering)	1 Hgt	.66 (winter only)	Average	8.12	5.74	2.38

		Unit	Stock Unit	Prices	Gross Rev. Per Unit	Direct Costs Per Unit	Gross Margin Per Unit
5.	Ewes & Lambs all counted	1E	1.0 (winter only)		7.98	5.11	2.87

Interpretation

1. Where there is complementarity, say wintering hoggets and then white clover seed, the aggregate Gross Margin for the year would be calculated as follows:

Gross Margin from 320 lbs W.C. at $0.22 per lb		$47.86
Gross Margin from Hoggets $2.38 x 3 (estimated carrying capacity on winter grass)		6.84
		$57.70
Less annual costs of pasture	$6.23	
Less Lucerne hay, say 1 bale per hogget 3 bales at $0.25	0.75	
		$6.98
Estimated Aggregate Gross Margin		$47.72

2. The time crops are in the ground is also a factor for consideration. For example, vining peas, sown in November and harvested the following January, utilize a paddock for only three months whereas a seed crop of rape sown in February will not be harvested till the following February and hence utilizes an area for in excess of 12 months. When comparing gross margins, therefore, this factor should be taken into consideration.

3. In all cases lime has been regarded as an overhead cost, except with lucerne, which has additional requirements.

4. It is a matter of judgement as to whether the difference in these estimated gross margins are significant in relation to the respective levels of uncertainty. For example, consider the alternatives of breeding replacements for the ewe flock against purchasing 2 yr ewes. The latter policy is generally practised on this class of farm. It has obvious management advantages, flexibility etc. The calculated gross margins for these two alternatives corrected for their S.U. basis is:

Breeding (average Prices)

Gross Margin	$6.66
S.U.	1.154
G.M.3S.U.	$5.77

2 yr Ewes (average Prices)

Gross Margin	$5.59
S.U.	1.014
G.M./S.U.	$5.51

This is an advantage of $0.26 to the breeding policy. But breeding is rarely practised on this class of property, which would seem to indicate that managerial factors which cannot be included in this kind of analysis are generally more important.