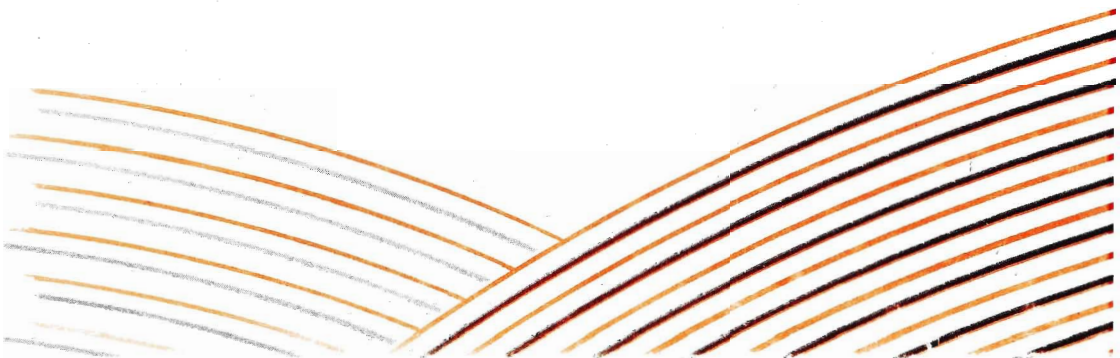


Lincoln College
Department of Farm
Management and
Rural Valuation

Farm Budget Manual
Part 2 Financial 1978



CONTENTS

Page

Preface	1
INTRODUCTION	3
SECTION 1 – REVENUE DATA	5
Meat	7
Wool	15
Dairy Produce	19
Dairy Cattle	23
Breeding & Store Stock	24
Crops	26
Small Seeds	30
SECTION 2 – FARM EXPENDITURE DATA	33
Wages	35
Animal Health	37
Breeding Expenses	42
Cash Cropping Expenses	43
Cultivation Contracts	52
Dairy Shed Expenses	53
Electricity	54
Feed	54
Freight and Cartage	56
Fertilizers	63
Lime	65
Miscellaneous Contract Rates	65
Seeds	66
Stock Selling Charges	67
Shearing Expenses	69
Trees	70
Weed and Pest Control	70
Repairs and Maintenance	73
Motor Vehicle – Fuel & Mileage Taxes	74
Vehicle or Motor Expenses	77
Administration Expenses	80
Standing Charges	81
Buildings	84
Farm Machinery	89
Fencing	107
Water Supply	114

Wages of Management	115
Subsidies	115
Drainage	116
Irrigation	116
SECTION 3 – ASSISTANCE AND INCENTIVES FOR FARMERS	
(See Contents Page)	119
SECTION 4 – INCOME TAXATION	
(See Contents Page)	141
SECTION 5 – GIFT AND ESTATE DUTY	
(See Contents Page)	163
SECTION 6 – GROSS MARGINS	177
Gross Margin Analysis	178
Cropping Example	186
Other Crops	200
Sheep Gross Margins	206
Pig Production	210
Notes on the Marketing of Beef Cattle	216
Gross Margins of Beef	229
CONSOLIDATED INDEX	237

Preface

This booklet, the second of a two part Lincoln College Farm Budget Manual is revised and published annually. Its companion volume (Part 1 Technical) is revised biennially. Whilst no claim is made that the contents are exhaustive, they are, we feel quite comprehensive.

Unless otherwise stated, users of this booklet should assume that all prices quotes are as at 1st January, 1978.

A number of people have made contributions to this booklet but two people deserve special mention. Firstly, Miss N. Wreathall for her conscientious work in revising and up-dating this edition, and secondly Mr J. Bennett for his authorship of the Tax Section.

Neil G. Gow
Senior Lecturer in Farm Management
EDITOR
February 1978

INTRODUCTION

**'Annual income twenty pounds, annual expenditure,
nineteen, nineteen, six, results happiness.**

**Annual income twenty pounds, annual expenditure,
twenty pounds, nought and six, result misery.'**

MR MICAWBER in David Copperfield

In an era of increasing sophistication in farm management analytical techniques the budget remains the simplest and yet most versatile technique available to the farmer and his adviser. Essentially a farm budget is a written plan which formalizes an anticipated farm programme and translates it into expected financial results.

The final form of any budget will depend on the purpose for which it is to be used and the vocation and point of view of the person doing it. Thus budgets produced for the same farmer by his farm adviser and his accountant might vary quite markedly in approach and presentation. A demonstration of this can be seen by comparing the three budget layouts reproduced in the next section of this manual. All three have been designed to serve slightly different ends and thus no single one is superior to the others for all uses.

The Lincoln College budget is designed primarily as a teaching aid and thus lays considerable emphasis on formalizing the farm programme for the budget year. The Society of Accountants budget on the other hand is designed for use by accountants whose main interest lies in the finances of the farm rather than the details of the farm programme. Both of these budget layouts contain too much detail for some purposes, and for some people. The third budget—that used by the Omeheu Demonstration Farm is an example of a budget layout reduced to its bare bones. For a seasonal supply dairy farm with only a small number of variables to be considered it is quick to use and easy

to understand. In addition to the three layouts reproduced in this manual there are many more in use servicing the agricultural sector.

The general layout of this manual follows the layout of the Lincoln College budget. Sections I and II are devoted to the revenue and expenditure data required to convert a physical programme into a financial one. Section III contains some relevant notes on taxation as applied to farming enterprises. In the final section a considerable number of gross margins have been reproduced for the benefit of those people who may be interested in analysing individual enterprises.

SECTION 1

REVENUE DATA

1. MEAT

(a) Sheep

Locally Consumed Lamb and Mutton

There is considerable volume of sales from farm to wholesale meat buyers direct, but 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 on the following page

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. Changes 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.

Canterbury Frozen Meat Co. Ltd.

In the current season, the CFM will market lambs on behalf of its farmer clients, through a series of 10 separate monthly pools.

The initial payment to the farmer would be about 90% of the estimated value of the carcase.

A market realization payment would be made at the end of each pool marketing period. It will be the difference between the initial payment and the actual realization of the export meat.

WAITAKI N.Z. REFRIGERATING LTD.

SOUTH ISLAND – 1977/78

The following Export Schedule will operate as from Monday, 19th December, 1977.

Prices are quoted as delivered to the nearest Port Works, Islington (or Belfast), Smithfield, Burnside, Ocean Beach, Picton and Nelson.

MEAT ONLY				SHEEP MEAT			
Lambs		Per kg.	Sheep	Hoggets		per kg.	
P	PL	8/12.5 kg	71.0c	U/22 kg	HL	ML1	37.8c
	PM	13/16 kg	65.3c	22.5/26 kg	HM	ML2	35.8c
	PH	16.5/25.5 kg	59.0c	26.5/30 kg		MH1	33.8c
Y	YL	8/12.5 kg	69.5c	30.5/36 kg		MH2	14.8c
	YM	13/16 kg	65.3c	U/22 kg	HX		
	YH	16.5/22.5 kg	59.0c	U/26 kg		MX	37.8c
O	OL	8/12.5 kg	65.3c	All Weights		MM	28.8c
	OM	13/16 kg	62.0c	All Weights		MF	5.5c
A	A	8/12.5 kg	54.0c	All Weights		MP1	5.0c
F	F	8/25.5 kg	42.0c	All Weights		MP2	4.0c

CUTTER

	C1L	U/12/5 kg	48.0c
	C1M	O/12.5 kg	50.5c
	C2	All Weights	32.0c
M	M	All Weights	19.5c

RAMS

	All Weights
	5c kg

M.A.F. Inspection Fee of 24.60c per head will be shown as a deduction on each weight note.

SKIN PAYMENTS (PELT & WOOL) PER HEAD

1 Kilo – 2.205lbs

WOOL PULL	LAMBS	SHORN LAMBS	SHEEP	SHEEP
0.20 kg	1.10 kg 347c	0.20 kg. 193c	0.20 kg 259c	1.10 kg. 394c
0.25	1.15 354c	0.25 200c	0.25 266c	1.15 401c
0.30	1.20 362c	0.30 206c	0.30 274c	1.20 409c
0.35	1.25 370c	0.35 213c	0.35 281c	1.25 416c
0.40	1.30 378c	0.40 220c	0.40 289c	1.30 424c
0.45	1.35 385c	0.45 227c	0.45 297c	1.35 431c
0.50 253c	1.40 393c	0.50 234c	0.50 304c	1.40 439c
0.55 261c	1.45 401c	0.55 241c	0.55 311c	1.45 446c
0.60 269c	1.50 409c	0.60 249c	0.60 319c	1.50 454c
0.65 276c	1.55	0.65 256c	0.65 326c	1.55 461c
0.70 284c	1.60	0.70 264c	0.70 334c	1.60 469c
0.75 292c	1.65	0.75 271c	0.75 341c	1.65 476c
0.80 300c	1.70	0.80 279c	0.80 349c	1.70 484c
0.85 307c	1.75	0.85 286c	0.85 356c	1.75 491c
0.90 315c	1.80	0.90 294c	0.90 364c	1.80 499c
0.95 323c	1.85	0.95 301c	0.95 371c	1.85 506c
1.00 331c	1.90	1.00 309c	1.00 379c	1.90 514c
1.05 339c	1.95	1.05	1.05 386c	1.95 521c
	2.00	1.10		2.00 529c
		1.15		
		1.20		
		1.25		
		1.30		
		1.35		
		1.40		
		1.45		
		1.50		

Plus 16c for
every .1 kg
over 2 kg

Seedy Wool and Seedy Pelts will be adjusted as follows:

Light	15c per head deduction
Medium	25c per head deduction
Heavy	40c per head deduction

Deductions will be made for black fibres of 10c per kilo.

Inferior and cotted full wools are subject to deduction and also Merino Type Ribby.

Pelts with a wool count of 60 upwards

Sheep \$1.50 per head Lambs \$1.00 per head.

The above schedule and skin payments are subject to alteration without notice.

The hogget and wether schedule is quoted for local trade only.

“Buffer a/c” Percentage – Lambs 5.0%) on all
 – Sheep 10.0%) Export Grades.

Meat Producers Board

PRICE—SMOOTHING SCHEME

The scheme has been operating since October 1, 1976. The main points of the scheme are as follows.

- * There will be four Benchmark grades of meat (lamb, mutton, table beef and manufacturing beef). The scheme will apply to export meat only and market forces will transmit the effects to meat sold for local consumption.
- * There will be a Meat Export Prices Committee, consisting of an independent chairman, two Meat Board representatives and two Government representatives.
- * The committee will set minimum prices for the benchmark grades in the following way:
 - (a) A three-year moving average price will be calculated from the actual price for the preceding season, an estimate of the current season, and a projection for the following season.
 - (b) The minimum price will be set within a band of 10 per cent above or below the average calculated as above. In extraordinary circumstances, the committee could set the minimum outside the defined band.
- * A trigger price for each benchmark grade will be set by the committee at some point above the minimum price and, when the schedule price passes the trigger point, a charge (the buffer levy) will be levied on the amount by which the schedule price exceeds the minimum price.
- * No percentage limitation is set for the level of the trigger price, but in determining it, the committee shall have regard to the following criteria:
 - (a) The ruling price levels of and market prospects for various types of meat and of other farm products associated with meat production.
 - (b) The desirability of maintaining a sufficient margin above the minimum price to allow normal marketing to proceed;
 - (c) The state of the sheepmeat and Beef Income Stabilisation Accounts;
 - (d) Such other matters as the committee shall deem to be relevant
- * The Idea of a graduated scale running up to 60 per cent or higher for collecting the buffer levy has been abandoned, and the levy is now a flat rate of 50 percent of the amount by which the schedule price exceeds the trigger price.
- * If the schedule price falls below the minimum price, the Board will either make supplementary payments to producers or intervene in the market, to ensure that producers receive at least the minimum price.
- * If the schedule price falls below the minimum price, the Board will either make supplementary payments to producers or intervene in the market, to ensure that producers receive at least the minimum price.
- * Before making any final determination of the minimum price or the trigger price, the committee will consult with the Minister of Agriculture and Fisheries.
- * The minimum price and trigger price will be set before the commencement of each season and in general, will remain unaltered throughout the season, but provision will be made in special circumstances for the Committee to meet to consider whether these prices should be varied during the course of a season.

MINIMUM EXPORT PRICES FOR 1977-78 SEASON
(1 OCT., 1977 to 30 SEPT., 1978)

Minimum prices for the four bench-mark grades of export meat for the 1977-78 season. 1976-77 prices in brackets.

			Cents per Kg.
LAMB	—	PM grade (13-16 kg)	59 (55)
MUTTON	—	ML grade (currently EL grade) (22 kg & under)	30 (21)
BEEF	—	Cow M grade (140.5 kg & over)	41 (40)
		Steer P1 grade (220.5-270 kg)	57 (55)

Provisional levels for trigger prices for the four bench-mark grades are as follows:

			Cents per kg.
LAMB	—	PM grade (13-16 kg)	78 (72)
MUTTON	—	ML grade (currently EL grade) (22 kg & under)	40 (30)
BEEF	—	Cow M grade (140.5 kg & over)	63 (60)
		Steer P1 grade (220.5-270 kg)	83 (80)

Ref. The New Zealand Meat Producer Vo. 5, No. 11, Sept. 1977

WAITAKI N.Z. REFRIGERATING LTD BEEF SCHEDULE

The following Export Schedule for cattle killed at our South Island Works will apply as from Wednesday, 4 January, 1978.

Prices are quoted as delivered to nearest Port Works, Islington, Belfast, Burnside, Ocean Beach Picton or Nelson.

OX AND HEIFER BEEF		OX Cents per Kilo	HEIFER Cents per Kilo
PI	160.5-220 kg	51.0c	49.0c
	220.5-270 kg	57.0c	55.0c
	270.5-340 kg	59.0c	57.0c
	340.5 & over	60.0c	58.0c
G	160.5-220 kg	47.0c	45.0c
	220.5-270 kg	53.0c	51.0c
	270.5-340 kg	55.0c	53.0c
	340.5 & over	56.0c	54.0c
T	All Weights	49.0c	47.0c
E	All Weights	41.5c	39.5c
L1	160.5-220 kg	47.5c	45.5c
	220.5-270 kg	51.5c	49.5c
	270.5-340 kg	54.5c	52.5c
	340.5 & over	58.5c	56.5c
L2	160.5-220 kg	43.0c	41.0c
	220.5-270 kg	47.0c	45.0c
	270.5-340 kg	50.0c	48.0c
	340.5 & over	54.0c	52.0c
M	Under 140 kg	35.7c*	35.7c
	140.5 & over	43.7c*	43.7c
COW BEEF		Cents per Kilo	
PI	160.5-200 kg	47.0c	
	200.5 & over	53.0c	
G	160.5-200 kg	45.0c	
	200.5 & over	51.0c	
T	All Weights	43.0c	
E	All Weights	35.5c	
M	Under 140 kg	35.7c*	
	140.5 & over	43.7c*	

BULL BEEF**Cents per Kilo**

Under 160 kg	49.1c*	
160.5—260 kg	59.1c*	
260.5 & over	67.1c*	* Denotes change.

M.A.F. Inspection Fee of \$2.727 per head will be shown as a deduction on each weightnote.

The above schedule of prices is subject to alteration without prior notice.

This is based on the carcass with kidneys, kidney fat and channel fat removed.

This schedule is based on Beef weight "HOT" at scales.

FOUR REGIONAL BEEF SCHEDULES FOR NEW ZEALAND

Monday, June 23, 1975 saw the introduction of four regional beef schedules: Auckland, Hawke's Bay, rest of North Island, and the South Island.

Since the Board ceased acquiring beef in late February and passed the responsibility for marketing back to the trade, it has been receiving full information from exporters on sale prices and quantities of beef sold each week. This information has been used to calculate a notional schedule by which the Board can monitor the exporters schedule and determine supplementary payments for individual grades and weight ranges.

In calculating the supplementary payments, representative "national" rather than "regional" processing rates, yields and charges ex works f.o.b. have been used in the formula. Some exporters objected to this and argued that they should compete against exporters in their own region, thereby taking account of "regional" rather than "national" cost factors.

The Board also felt the need to reassess one or two aspects of the scheme and the introduction of regional schedules seems to be a satisfactory solution to these.

At its June meeting, the Board decided that the rest of the North Island region would be "the bench mark region" for the remainder of the current season by which it would determine supplementary payments for the whole country. The Board also decided that there will continue to be minimum payments to producers in all regions and that these will be calculated in relation to regional differences compared with the rest of the North Island.

It should be noted that these regional differences could vary from time to time, depending on changes in the factors used in assessing the schedule differences.

Ref: New Zealand Meat Producer Vol. 3 No. 9, July 1975.

C.F.M. SALES

Division of the CANTERBURY FROZEN MEAT Company Ltd.

Pig Schedule

Effective as from 5th January, 1978

1. Baconers

Weight ranges and payments based on "hot" scale weight
Head-on-Feet-on.

Hot Weights		Cents per kg
45.5/70 kg	Prime	106
	Choice	96
	Standard	77
	Mutilated	72
70.5/83 kg	Prime	73
	Choice	63
	Standard	51
	Mutilated	44

2. Pork

27.5/45 kg	Prime	95
	Choice	85
	Standard	70
	Mutilated	61

Choppers 22

Condemned Carcases No Value

Deductions

Pig Council Levy	.80 cents per pig
Fed. Farmers levy	.5 cents per pig
Inspection Fees	<u>81.3 cents per pig</u>
	\$1.618 cents per pig

(Transport charges as from farm to Belfast Works).

2. WOOL

The following were the Average Gross Prices for the Christchurch sale of 16th & 18th January, 1978, and the Timaru sale of 7th December, 1977. These can be used in budget work, although reference should be made to up-to-date wool sales and market reports.

N.Z. Wool Marketing Corporation

The following table gives prices on a clean on the floor basis for a selected range of types, and using typical yields gives also the greasy prices.

Type	Count	Chch.	Timaru	Yield (%)	Price (c/kg) on greasy weight	
					Chch.	Timaru
Merino B	60/64	380	403	60	228	242
Fine ½ Bd B	58	317	330	65	206	215
Medium ½ Bd B	56/58	303	318	66	200	210
Strong ½ Bd B	54	278	290	69	192	200
Fine X Bd B	50	274	294	73	200	215
Medium X Bd B	46/50	260	273	75	195	205
Strong X Bd B	44/46	247	256	75	185	192
Course X Bd (second shear) B	44/48		246	75		185

Wool Marketing Corporation Operations

1. Basic Provisions of the Wool Income Stabilization Regulations 1976 are:

- (a) A Minimum Floor Price to be set by the Wool Marketing Corporation with advice from the Board and the approval of the Minister. Normally, the price will not move down more than 5% or up more than 10% between seasons.

1975/76	124 cents/kg
1976/77	136 cents/kg
1977/78	cents/kg

- (b) A Minimum Prices Funding Levy of 3% on gross wool proceeds, from which supplementary payments will be made in times of low prices. The levy to apply to all wool, however sold, except slipe wool and wool after manufacture. The fund to earn interest at 1% and deficits can be financed from the Reserve Bank at 1%.
- (c) A Trigger Price to be announced at the start of each season by the Minister after consulting with the Board and Corporation. Where the average price passes the trigger, there is a retention levy to take about half the excess proceeds. This is paid into individual accounts, administered by the Corporation.

With the new provisions, wool is subject from 1 July 1976 to three levies –

Wool Board Levy	3%	3%
Minimum Prices Funding Levy		3%
Individual Grower Retention Levy – see below.		

All three levies operate on the grower's gross proceeds however sold.

2. Individual Grower Retention Scheme: A trigger price is to be set above the minimum price prior to the commencement of each season and this will be determined by the Minister of Agriculture & Fisheries after consultation with the Wool Board. The factors as the ruling level of prices and prospects for wool as well as other farm products, the maintenance of an expanding sheep industry, and the need to promote general economic stability in the economy.

The operation of the trigger price is as follows: – The prices for each grade of wool at a particular sale are weighted up by the national volume of wool of each grade so that an adjusted sale average price is arrived at based on the prices which were achieved at that particular sale and the New Zealand volumes of each grade of wool. It must be stressed that this adjusted sale average differs from the actual sale average as a result of using the New Zealand volumes of each grade of wool and not the actual volumes of each grade of wool sold at that particular sale. In the event of an adjusted sale average price being above the predetermined trigger price a further levy will be incurred by growers. This is calculated by taking 50% of the amount above the trigger price and expressing this cent per kilogram figure as a percentage of the adjusted average sale price. The percentage so calculated is then deducted from all wool sold at that sale and applies to all wool sold

privately up to the next auction sale when the percentage levy could change in response to actual prices changing. The proceeds levied through this system will be deposited in the name of individual growers and deposits may be withdrawn at the discretion of the Minister. They will be available 5 years after the date of deposit, however under special circumstances withdrawal at earlier date may be approved. These individual grower accounts will not attract tax until the date of withdrawal.

(The trigger price established for the 1977/78 season was announced in July 1977 at 215 cents per kilogram).

Example of Method of Calculating Retentions:

(a) Assume a trigger price of		195 cents
(b) AWASP for sale, say –		225 cents
(c) Difference		30 cents
(d) ‘Specified Percentage’ retention	$\frac{15}{225} \times \frac{100}{1} =$	6.67%

Thus the ‘Specified Percentage’ retention of 6.67% would be applied to the gross proceeds of all wool sold at that sale and nationally for all wool sold privately by growers until the next sale.

The overall levies on gross proceeds at this time would be –

Wool Board Levy	3% – paid to Wool Board
Minimum Prices Funding Levy	3% – paid to Reserve Bank
Individual Growers Retention Levy	6.67% – paid to individual
	<u>12.67%</u> account at Reserve Bank

3. Strata Price Control

Since 1976 the Corporation has operated a scheme to limit the degree to which prices at any auction may vary from price levels prevailing at the previous sale. To do this the Corporation bids through a subsidiary (New Zealand Wools), at a fixed percentage below previous prices. In this way steep falls in the market can be avoided, although it is of course inherent in the system that the Corporation could accumulate considerable stocks on a falling market.

4. Extra Choice

A further activity since July 1976 has been the offering to growers of an alternative to auction or private sale of their wool. This entails the grower

sending his wool to a broker or a private buyer, and asking for it to be made available for valuing by the Corporation. The grower is then offered the current market price by the Corporation and if acceptable the grower is paid ten working days later. The Corporation thereby enables the grower to obtain cash quickly at times when the roster of auctions may be full and he would otherwise encounter delay in disposal of his product. He is also assured of a fair market price for his wool on the day. It is expected that most E.C. wool will be fed back into the auction system by the Corporation in due course. Initially, E.C. is limited to second shear bodywool, lambs and crutchings only.

3. DAIRY PRODUCE

(a) Whole Milk for Manufacture

In June, the Dairy Products Prices Authority fixes two values, one for milkfat and one for solids-not-fat. When the above prices are known, the N.Z. Dairy Board fixes the actual product purchase prices viz. for butter, cheese, milk powders etc. Costs of milk collection and of manufacturing are included. The Board may adjust the prices, by up to 8 cents/kg milkfat, to achieve a desired product range. If the reaction of the 61 manufacturing companies to the prices is favourable, the prices are confirmed and the companies are then committed to manufacture not less than 90% of the products as set out in their programmes.

The companies are paid by the Board on the 20th of each month. After the companies have deducted their manufacturing and administration costs, and have possibly withheld amounts for capital developments, they pay the residuum to their suppliers on the 20th.

The advance payment is usually 70% of the expected final payment, and the final adjustment for the year is made in June.

In 1977/78, the values are 90.95 cents/kg milkfat and 53.86 cents/kg solids-not-fat. The effect of these values is to make the basic price for 1977/78 143.91 cents/kg milkfat. (In 1976/77, the basic price was 135.72 cents/kg milkfat, and the final price paid by local companies 152-154 cents/kg milkfat).

(b) Whole milk for Town Supply

The national town milk producer price is linked to the average price for whole milk used for the major manufactured products, in the relationship of 1 cent/kg milkfat equals 0.06 cents/litre of milk. Prices to the producer are varied with the season of the year, to compensate for climatic conditions and to encourage production in the more difficult periods.

In addition, in specially difficult areas for dairy farming, special price supplements are paid.

The national advance town milk price, for the year ending 31 August 1978, is 9.9473 cents/litre for first grade milk. An example of how this price is applied by a producer company is as follows:

(c) **Dairy Industry Stabilisation**

At the beginning of each season, basic farm gate prices are set for milkfat and for SNF ('solids-not-fat'). These prices must not be more than 10% up or 5% down on the previous season's basic prices.

At the end of the season, if either or both of the Milkfat Trading Account and the SNF Trading Account indicates a surplus, the Board may propose to distribute up to 50% of the surplus and to credit the balance into a Reserve Account. In the event of the Board incurring a loss in milkfat and/or SNF products, it will be granted overdraft facilities at 1% by the Reserve Bank of New Zealand if the loss exceeds the accumulated reserves in the relevant account.

New Zealand Dairy Board

(d) CANTERBURY DAIRY FARMERS LIMITED – PRICES 1977/78

Month	Full Price Paid For	QUOTA MILK			SURPLUS MILK (Advance Price)				
		Finest	First	Second	Finest	First	Second		
September 1977	105% of quota	10.297	9.930	9.198	c.p.l.	5.617	5.250	4.518	c.p.l.
October	100% " "	8.367	8.000	7.268		"	"	"	
November	100% " "	"	"	"		"	"	"	
December	100% " "	"	"	"		"	"	"	
January 1978	105% " "	"	"	"		"	"	"	
February	120% " "	"	"	"		"	"	"	
March	120% " "	11.399	11.032	9.198		"	"	"	
April	120% " "	"	"	"		"	"	"	
May	120% " "	14.279	13.912	12.078		"	"	"	
June	120% " "	"	"	"		"	"	"	
July	120% " "	"	"	"		"	"	"	
August	120% " "	"	"	"		"	"	"	

NOTE:

- (a) **Finest grade** is milk which passes a 5-hour reductase test **and** contains not less than 3.5% milkfat, and sediment test of 1 or 2, and freezing point 0.530 or more.
- (b) **First grade** is milk which passes a 3-hour reductase test but fails to pass the 5-hour test **and/or** contains not less than 3.25% milkfat.
- (c) **Second grade** is milk which fails to pass a 3-hour reductase test or contains less than 3.25% milkfat, or sediment test 3, or freezing point less than 0.530.
- (d) A penalty of 0.183 cents per litre is applied to quote plus eligible percent of milk testing 8.35% S.N.F. and below, and 0.367 cents per litre to milk testing 8.20% S.N.F. and below. The penalty is applied on a monthly basis on the average of three solids-not-fat test per month – one in each 10 day period.
- (e) The national town milk price in 1977–78 is 9.9473 cents per litre for first grade milk. A premium of 0.367 cents per litre applies to finest grade milk and a penalty of 0.732 cents per litre to second grade milk. A special South Island allowance of 0.735 cents per litre and a Christchurch area allowance of 0.367 cents per litre applies to full price milk of finest and first grade in March to August, both inclusive. These allowances are included in the above prices.

(e) 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 to be adopted are:

North Island		South Island	
Friesian type calves	\$5.00 per head	Friesian type calves	\$6.00 per head
Jersey type calves	\$3.50 per head	Jersey type calves	\$3.50 per head

(f) 1977 Dairy Beef Market-Guarantee Scheme

To encourage the retention of dairy-beef calves, the 1977, November/December national average price for 'spring-born' dairy-beef weaners is being guaranteed at a minimum of \$50 per head.

If the average price of the dairy-beef weaners sold at auction during November and December is below \$50 per head, every eligible calf will attract a supplementary payment equal to the difference between the average price and \$50 irrespective of the weight or the sale price of the particular animal, and of whether or not the animal is sold.

The scheme covers beef calves of dairy origin born between 1 June 1977 and 31 May 1978 on a dairy farm that has supplied more than 3000 kilograms of milkfat to a milk station or a dairy factory in the 1976/77 season, or that will supply this amount in the 1977/78 season.

Eligible calves that are born between 1 June and 31 October 1977 are to be registered during November 1977, while those born between 1 November 1977 and 31 May 1978 are to be registered during June 1978.

The payments, if they become due, will be made to whoever owns the calves at midnight, on 31 October 1977, with regard to the first registration period and on 31 May 1978 with regard to the second period.

The claimant need not necessarily be a dairy farmer, but may have purchased the calves to rear them.

Ministry of Agriculture & Fisheries

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. 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 cows (autumn calvers)	\$150 - \$200
Average quality Friesian cows (autumn calvers)	\$100 - \$150
Good quality Friesian heifers (12 - 18 months old)	\$ 80 - \$100

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

5. BREEDING & STORE STOCK

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

A chart has been drawn up for an analysis of prices paid for the main classes of stock. This should be filled in by watching for the appropriate sales, and used as a guide. If all sales reports are noted, any marked changes will be picked up as the year progresses. In some cases, a figure has already been entered, and these should be used as a guide only.

(a) Sheep			Range
2T Ewes	Romney	Good	to
		Average	to
		Small	to
	Corriedale	Good	to
		Average	to
		Small	to
4 year old ewes	Romney	Good	to
		Average	to
		Small	to
	Fine Wool	Good	to
		Average	to
		Small	to
5 year old ewes	Romney	Good	to
		Average	to
		Poor	to
	Fine Wool	Good	to
		Average	to
		Poor	to
Works Ewes—Aged Ewe Hoggets	Romney	Broken Mouth	to
		Good	to
		Average	to
	Fine Wool	Good	to
		Average	to
		Poor	to
Store Lambs	Romney	Good	to
		Average	to
		Small	to

Down Cross Average	to
Half Bred Wether	to

Ram (Flock) Average Quality	Range
Southdown	\$40 – \$60
Dorset Down	\$40 – \$60
South Dorset Down	\$40 – \$60
Hampshire	\$60 – \$70
South Suffolk	\$30 – \$50
Suffolk	\$30 – \$50
Romney	\$50 – \$70
Corriedale	\$50 – \$80
Border Leicester	\$60 – \$80
Coopworth (sold with records)	\$50 – \$100

(b) Beef Cattle

For estimating beef cattle prices a comprehensive section is included in the Gross Margins section of the manual. Current schedule prices and local fat stock sale reports should also be consulted.

6. CROPS

- (a) (i) **Wheat (both North and South Island Prices for 1977/78 season F.O.R. at growers station.)**

Hilgendorf	\$144.00 per tonne F.O.R.
Arawa	\$108.00 per tonne F.O.R.
Aotea and Equivalent	\$120.00 per tonne F.O.R.
Karamu	\$114.00 per tonne F.O.R.

Storage Increments for wheat held on farms after harvest (1977/78):

Month of Delivery	Per Tonne (\$)
11-15 April	2.03
16-30 "	2.70
1-15 May	3.38
16-31 "	4.05
1-15 June	4.73
16-30 "	5.40
1-15 July	6.08
16-31 "	6.75
1-15 August	7.43
16-31 "	8.10
1-15 September	8.78
16-30 "	9.45
1-15 October	10.13
16-31 "	10.80
1-15 November	11.48
16-30 "	12.15

- (ii) **Wheat Levy**

Wheatgrowers Compensation Fund	15 cents per tonne
United Wheat Growers	17 cents per tonne
Wheat Research Institute	<u>14</u> cents per tonne
Total Levy	46 cents per tonne

- (b) **Barley**

- (i) **Malting Barley – price as delivered to nearest Malting Co. Store.**

Varieties contracted:

Zephyr, Rupe, Mata, Manapou	\$105.00 per tonne
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Storage Increment \$ 2.40 per tonne per month
for May delivery, additional 90c per tonne per month thereafter.

- (ii) Seed Barley – 1st Generation \$88.50 per tonne
– 2nd Generation \$83.75 per tonne
- (iii) Feed Barley contract \$83.00 per tonne

(c) Oats

Price for milling or G.A.Q. quality F.O.R. (40 lbs min. 18 kg).

- Gartons and other white coats (contract) \$85.00 per tonne
- Algerians \$85.00 per tonne
- Black Coats \$90.00 per tonne

(d) Peas

(Field dressed prices) 1977/78

Treating – \$17.07 per tonne

(i) Partridge and White Prolific:

- Machine dressed \$175.00 per tonne
- Bulk \$145.00 per tonne
- Sacks \$155.00 per tonne
- Rondos – Machine dressed \$160.00 per tonne
- Bulk \$130.00 per tonne
- Sacks \$140.00 per tonne

- (ii) Garden Greenfeast and Victory Freezer
 - Bulk \$143.00 per tonne
 - Sacks \$145.00 per tonne
- Onward
 - Bulk \$153.00 per tonne
 - Sacks \$155.00 per tonne
- Wm. Massey
 - Bulk \$168.00 per tonne
 - Sacks \$170.00 per tonne

(iii) Garden Peas for Freezing

Payout depends on stage of maturity at harvest as indicated by tendrometer reading.

Freezer Pea Payouts 1977/78

Grade	Tendrometer Reading	\$ per Tonne Packed Weight
0	90	\$205.09
1	91 – 95	\$184.94
2	96 – 100	\$162.48
3	101 – 105	\$142.50
4	106 – 110	\$124.99
5	111 – 115	\$120.01
6	116 – 120	\$107.33
7	121 +	\$ 95.46

(e) **Linseed**

Budget at \$180.00 per tonne with bonuses for above average quality.

(f) **Lupins**

Bore and Bitters – \$140.00 per tonne
Whites – \$140.00 per tonne

(g) **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.

Av. Actual Market price
1977 (Main Crop only)

**Contract or
Payout Price
offered by Board**

Ilam Hardy	S.I.	\$35–55 per tonne	\$20 per tonne
Rua	N.I.	\$45–55 per tonne	\$24 per tonne

NOTE: The N.I. price seldom rises above the S.I. price plus freight to N.I. markets – thus the freight differential is significant in pricing both ways up or down.

Potato Board Levy: No charge in 1978.

Growers of certified seed can have tubers inspected for quality by authorised inspectors of the Potato Board (Port Graders), and the issuing of certification tags by Government, requires a satisfactory inspector's report. Cost of 50c per tonne.

Seed potato prices vary from year to year with changes in supply and demand but usually range from \$60 – \$110 per Tonne for

groups one and two main varieties and up to \$200/Tonne for group one Rua.

Potato growing is a specialist occupation and considerable care is needed in attempting to budget forward because of the wide fluctuations in price.

(h) Lucerne (Dehydration Contract)

Dry Matter (tonne per ha)	\$ per tonne
1	\$27.00
3	\$27.00
5	\$27.00
7	\$28.00
10	\$31.50
12	\$34.00
15	\$36.00
17	\$37.00
19+	\$38.00

- (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 visit 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. They stand as at 1.1.78.

(a) Grass Seeds (per Kilo)

Manawa Ryegrass	\$/kg
Certified 2nd generation	0.70
Certified 1st generation	0.72
Basic	0.75

Paroa Italian Ryegrass

Certified 2nd generation	0.70
Certified 1st generation	0.72
Basic	0.76

Ruanui Ryegrass

P.P.	0.58
Certified 2nd generation	0.60
Certified 1st generation	0.66
Basic	0.70

Ariki Ryegrass

Certified 2nd generation	0.60
Mother 1st generation	0.66
Basic	0.70

Grasslands Apanui Coxfoot

Certified 2nd generation	3.00
Certified 1st generation	3.20
Basic	3.30

Tama Ryegrass

2nd generation	0.78
1st generation	0.80
Basic	0.90

(b) Clover Seeds (per Kilo)

Huia Clover	\$/kg
P.P.	1.85
Certified 2nd generation	1.25
Certified 1st generation	1.95
Basic	2.00

Turoa Montgomery Red Clover

Uncertified	1.90
Certified 1st generation	2.50
Basic	2.70

Hamua Broad Red Clover

Uncertified	2.00
Certified 2nd generation	2.95
Certified 1st generation	2.95
Basic	3.00

Subterranean Clover

Uncertified	1.80
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Prairie Grass (Matua)

0.80

Wairau Lucerne (Sth of Conway)

2nd generation	3.60
1st generation	3.70
Basic	3.80

Kahu Timothy	\$/kg
Uncertified	3.25
Certified 2nd generation	3.50
Certified 1st generation	3.75
Basic	3.75
O.E.C.D. Seed Certification Grades	

N.Z. Certified Govt. Stock	=	N.Z.
Pedigree	=	Basic
Mother	=	1st Generation
Standard	=	2nd Generation

SECTION 2
FARM EXPENDITURE DATA

1. WAGES

- (a) Musterers, Packers and Drivers Award - refer Fed. Farmers Handbook
 Shearers and Shed Hands Award - refer Fed. Farmers Handbook
 Dairy Farm and Farm and Station - refer Fed. Farmers Handbook

The minimum wages for workers are as follows:-

Age	Per Week and found \$
Under 17	43.55
17 yrs and under 18	52.54
18 yrs and under 19	61.52
19 yrs and under 20	70.50
20 years and upwards	79.50

Casual workers – The rates of wage payable to casual workers shall be not less than the following:-

Harvesters – \$2.28 per hour.

Other Workers –	Age	By the Hour	By the Day
	Over 18 years	\$1.97	\$15.79
	Under 18 years	\$1.35	\$10.80

Where keep is provided by a farmer for all employees, such keep is valued at \$2.00 per week for taxation purposes thus wages are effectively increased by \$2.00 per week for basis of calculation of taxation.

It should be noted that the actual cost of keeping a single employee is thought to be no less than \$20 per week. In some instances this sum is paid to the wife of a married employee or manager where he is required to board a single man and is also employed on the same farm.

Wages for Dairy Farm Workers

Age	B.O.P. Fed. Farmers Farm Cadet Scheme	\$ per week (found Agric. Workers' Dairy Farm Order)
17 years	\$43.55	\$40.70
18 years	\$52.54	\$49.10
19 years	\$61.52	\$57.49
20 years	\$70.50	\$65.88
20 years and over	\$79.50	\$74.29

Married Dairy Farm Workers in range — \$95–120 per week gross.

Single Men (20 years and over) in range — \$75–100 per week gross.

Managers of large herds receive up to \$8,500 per annum and extra remuneration for Managers controlling multiple labour set-ups is also given. All rates vary with individual experience.

(b) Shearing Wages (1977/78 Canterbury)

Shearers and Shedhands Rates —

Machine Shearing Base Rate	\$30.47 per 100
Plus Hand-piece Allowance	\$ 0.55 per 100
Open-Shed Shearers living away from farmers' or contractors' quarters	\$ 2.30 per day
Transport Allowance	\$ 17.5 cents/mile or 10.75 cents/km

Blade Shearing Rates —

Base Rate — with rations	\$39.48 per 100
Blade Allowance	\$ 0.55 per 100
Living Away Allowance	\$ 2.30 per day
Transport Allowance — same as for Machine Shearers.	

Shedhands —

Minimum rate of \$2.46 per hour for novice shedhands.

Rates for experienced shedhands to be negotiated —
current range \$3.00 — \$3.75 per hour.

2. ANIMAL HEALTH

(a) Dog registration fees and Hydatid control fees \$9–\$11.

(b) Contract Sheep and Cattle Dipping (1977/78)

Sheep Dipping –

(a) Plunge: total cost, including materials –

1 to 500	13.5 cents per sheep
500 to 1,050	12.5 cents per sheep
1,050 to 2,050	11.5 cents per sheep
2,050 to 4,000	11.0 cents per sheep
Over 4,000	10.5 cents per sheep

(b) Mobile Shower:

(i) \$65 per 1,000, plus materials,
plus \$6 setting-up fee.

(ii) 11.5 cents to 14.5 cents per sheep,
including materials, depending on length of wool.

Rates may be higher under 1,000 sheep depending on distance.

Cattle –

Warbex Pouron – 1kg \$18.29

Calves up to 75kg 200 head dose rate 10mls

100 to 225kg 66 head dose rate 30mls

325 to 450kg 33 head dose rate 60mls

(c) Sheep Dip Guide

Cost per 100 based on 2 litres of wash per head (these costs can vary depending on wool length).

Parasite	Dip to Use	Price	Size	Active Ingredient	Method of Application	Dilution	Average cost per 100 Sheep
Lice	Trigon D.F.F.	\$ 75.46	3 l.	VC 1 - 13 100% W/V	Plunge	1:2000	\$2.52
Ked						1:4000	\$1.26
Fly					Shower	1:2000	\$2.52
						1:4000	\$1.26
						C.R. Shower	1:1280	$3.93
					1:2560	\$1.96	
Lice	Supreme D.F.F.	\$111.46	3 l.	Supona 100% W/V	Plunge	1:2000	\$3.72
Ked						Shower	1:2000	$3.72
Blowfly					C.R. Shower		1:1500	$4.95
Itchmite							
Lice	Diaz-O-Spray D.F.F.	\$ 80.78	3 l.	Diazinon 80% W/V	Plunge	1:4000	\$1.35
Ked						1:8000	\$.67
Blowfly					Shower	1:4000	\$1.35
						1:8000	\$.67
						C.R. Shower	1:2000	$2.69
					1:4000	\$1.35	
Lice	Diaz-O-Spray	\$169.33	20 l.	25% W/V	Shower	1:2000	\$.85
Ked						1:1000	\$1.69
Blowfly					C.R. Shower	1:2000	\$.85
						1:500	\$3.39
					1:1000	\$1.69	
Lice	Numix	\$ 52.47	5 Kg	VC 1 - 13 Powder	Plunge	1 Kg:1000 l	\$2.10
Ked						Shower	1 Kg:1000 l	$2.10
					C.R. Shower	1 Kg:750 l.	\$2.79
Lice	Q.A. Instant Wetting Powder	\$ 21.12	per tin	Arsenic 5% W/V	Plunge	1 Tin:2000 l.	\$4.31
Ked						Shower	1 Tin:2000 l.	$3.45
Itchmite					C.R. Shower	1 Tin:2000 l.	\$2.15
Lice	Diaz-O-Dust	\$ 26.44	25 Kg	Diazinon			
Ked							
Fly	Bacteriostat Powder	\$ 2.80	600 gm	Powder			

(d) Drench

ANTHELMINTIC COST COMPARISONS

Nilverm New Formulation – Costs per dose (Cents)

Type of Animal	Weight Range	Dose Rate	Pack Size Cost of Pack	45 1	24 1	12 1	5 1	2 1	1 1
Sheep	up to 22.5 kg	4cc		\$501.32	274.51	139.93	62.78	27.40	13.92
	22.5-34 kg	6cc		4.45	4.57	4.66	5.02	5.48	5.56
	34 kg and over	8cc		6.68	6.86	6.99	7.53	8.22	8.35
Cattle	200kg	9cc/45kg LW		8.91	9.15	9.32	10.04	10.96	11.13
	272kg	9cc/45kg LW		44.45	45.63	46.52	50.09	54.66	55.54
				60.60	62.20	63.43	68.30	74.52	75.70
Panacur				201		51			
Sheep lambs	up to 15 kg	3cc		\$202.85		\$56.50			
	21-30kg	6cc		3.04		3.39			
	30-40kg	8cc		6.08		6.78			
	40kg and over	9cc		8.11		9.04			
Cattle	200kg	15cc/50kg LW		9.12		10.17			
	275kg	15cc/50kg LW		60.85		67.80			
				83.67		93.22			

Thibenzole Concentrate Liquid

Type of Animal	Weight Range	Dose Rate	Pack Size Cost of Pack	30 1	20 1	10 1	5 1
Lamb	Up to 20kg	4cc		\$301.75	\$209.53	\$111.26	\$57.59
Lambs & Hoggets	21-30kg	6c		4.02	4.19	4.45	4.60
Hoggets	31-40kg	8cc		6.03	6.28	6.67	6.91
Sheep	41kg over	10cc		8.04	8.38	8.90	9.21
Cattle	up to 50kg	17cc		10.05	10.47	11.12	11.51
	100-150kg	50cc		17.09	17.81	18.91	19.58
	150-200kg	70cc		50.29	52.38	55.63	57.59
	200-300kg	100cc		70.40	73.33	77.88	80.62
				100.58	104.76	111.26	115.18

Noviben Paste for Cattle	Cost Per Pack	Cost Per Cartridge
10	148.46	14.85
20	294.04	14.70
Live Wght Range	Doses per Cartridge	
up to 100 kg	50	
101-150	33	
151-200	25	
201-250	20	
251-300	16	
301-350	14	
351-400	12	

(e) Bloat Control	Pack Size	Price
Blogon	20 lt	\$59.48
	200 lt	483.60
No Bloat (N.I.)	20 lt	22.24
	300 lt	169.05
(S.I.)	20 lt	24.51
	200 lt	179.14
N 64	5 lt	14.95
	20 lt	59.61
	200 lt	513.21

(f) Facial Eczema Control	Pack Size	Price	Price per Litre
Sporex	5 litre	54.15	10.83
	20	214.20	10.71

(g) Vaccines	Vaccine	Size of Pack	Cost	Dose Rate	Cost per Head (cents)
Pulpy Kidney		100ml	\$1.67	Sheep & Lambs	3.34
		250ml	\$3.96		2cc	3.16
		500ml	\$7.53		3.01
		1000ml	\$14.32		2.86
Pulpy Kidney Tetanus		100ml	\$2.80	Sheep & Lambs	5.60
		250ml	\$6.68		2cc
		500ml	\$12.72		5.08
		1000ml	\$19.26		3.85
Black leg		50ml	\$1.08	Sheep & Lambs	4.32
		100ml	\$2.49		2cc	4.98

Malignant Oedema	250ml	\$5.93		4.74
	500ml	\$11.29		4.51
Multine 4	100ml	\$4.20	Sheep & Lambs	8.40
(Pl, Bl, Tet, Mo)	250ml	\$10.00	2cc	8.00
	500ml	\$19.04		7.61
Multine 5	100ml	\$4.75	Sheep & Lambs	9.50
(Pk, Bl, Tet	250ml	\$11.29	2cc	9.03
Mo, Black Disease)	500ml	\$21.50		8.60
	1000ml	\$40.86		8.17
Scabine	150dose	\$1.49		0.99
Triple	100ml	\$3.95	Sheep & Lambs	7.90
(Pk, Bl, Mo)	250ml	\$9.41	2cc	7.52
	500ml	\$17.92		7.16
	1000ml	\$34.04		6.80
Foot Abcess	100ml	\$4.96	Hoggets 2cc	9.92
Scabby Mouth	250ml	\$2.16	Lambs & Hoggets	1.72
	500ml	\$4.12	2cc	1.64

(h) Penicillin

Durapen	3 in 1	12 tubes	\$6.27
		30 tubes	14.85
Procal	100	12 tubes	2.34
Procal	500	12 tubes	4.32
		36 tubes	12.36
Procal	1500	6 tubes	4.41
		12 tubes	8.37
Penicillin Udder Injection	50	12 tubes	1.80
		36 tubes	5.13
P.U.I.	100	12 tubes	2.67
		36 tubes	7.32
Adpen	100	12 tubes	3.39
Pene tha - Pen	100	12 tubes	2.88

(i) Disinfectants

Hibitane	5 l.	\$ 7.71
Detol	5 l.	\$11.37

Formalin	60 l.	\$42.97
Formalin	200 l.	\$121.08
Bluestone	50 Kg	\$29.50
Docking rings	500 per pack	\$6.00
Eaerosol markers	200 gm	\$1.93
	400 gm	\$3.13

(j) Veterinary Club Membership

Veterinary Club charges vary from club to club. A typical membership fee would be \$8.00

Standard Fees – Visit and Examination:

Large animals	\$ 7.50
Revisit	\$ 3.50
Plus 13c per Km.	

(k) Veterinary Supplies

Calcium Borogluconate N.D.A. 450ml \$ 2.00

(l) Total Dairy Farm animal health expenses approximately –

\$5.50 – \$7.50 per cow (factory supply)

\$5.50 – \$8.50 per cow (Town milk supply).

3. BREEDING EXPENSES

(a) Artificial Breeding (Canterbury)

Spring Groups 6–7 week service
 Minimum fee 5 cows – \$25.00
 Then \$3.60 per cow (\$367.00 per 100)

All Year Round Service –

Technicians \$2.50 per insemination
 Semen charge \$3.00 per insemination
 Plus mileage 12c per km (19c per mile)

(b) Herd Testing 1977/78 (S.I. Livestock Improvement Association).

	Herd Fee	Plus Per Cow	For 10 Cows Minimum
Monthly Test	\$25.00	\$4.30	\$68.00
Alternative Monthly	\$25.00	\$2.60	\$51.00

Prod. Rank Tests (Nov. & Jan.)	\$25.00	\$1.30	\$38.00
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(c) Beef Recording (S.I. – L.I.A.)

Herd Fee – \$45.00

	Per Animal Recorded
Basic Breeding Option	55c
400 day Option	30c
550 day Option	30c
Progressive Weight Gain	10c

4. CASH CROPPING EXPENSES

(a) Contracting rates --

(i) Contract heading:

Wheat: When the crop runs 2350 kilos/ha (35 bus/ac) or over \$15.43/tonne (42c/bus)

Barley: When the crop runs 1950 kilos/ha (35 bus/ac) or over \$18.52/tonne (42c/bus)

Oats: When the crop runs 1550 kilos/ha (35 bus/ac) or over \$23.15/tonne (42c/bus)

Peas &

Lupins: When the crop runs 2000 kilos/ha (35 bus/ac) or over \$20.20/tonne (55c/bus)

In all cases where heading is carried out on hill country the bushel rate shall be increased by 20%.

Linseed and Clover: \$50.80 or hourly rates according to size of header, whichever is the greater.

Grass Seed: \$47.50 or hourly rates according to size of header, whichever is the greater.

Minimum charge in all cases where crop runs under the specified yield per acre must not be less than \$22.96 per metre front per hour (\$7.00 per foot front).

- i.e. 2.4m (8') header – \$56.00/hr
- 3.0m (10') header – \$70.00/hr
- 3.6m (12') header – \$84.00/hr
- 4.2m (14') header – \$98.00/hr

Up to 2.5m headers	– 1 bag sewer supplied by the contractor
Over 2.5m headers	– 2 bag sewers supplied by the contractor
Bulk heading	– Same rates as ordinary heading
Auger hire	– 30 cents per tonne each time auger is used

In case of emergency, when work has to be done on Sunday, the extra wages paid to the men shall be charged in addition to the normal rates.

2½% discount for payment within 30 days of the work's being done. Cartage from header to silo, at appropriate schedule rates.

(ii) Chaff Cutting: (Prices include machine and 3 men) (1.1.78)

Oatsheaf	50 cents per bag
Straw Chaff	70 cents per bag
Oaten Hay	65 cents per bag
Lucerne	95 cents per bag

These prices apply within a radius of 16 kilometres from the contractors headquarters. Any work done beyond this distance will be charged at \$0.30 per km (\$0.48 per mile), one way.

(iii) Contract Mowing

Peas	\$20.00 per hour
Grass	Cutterbar \$17.00 per hour
	Disc Mowing \$19.50 per hour

(iv) Contract Windrowing

\$60.50 per hour, special crops by arrangement.

Per Hectare

Windrowing \$24.90 per ha, 10 cm and above

Windrowing \$26.20 per ha, under 10 cm

Under 4 ha, \$2.00 per ha extra

Windrowing and Conditioning \$26.20 per hectare.

Note: The prices listed here, are minimum prices based on average conditions, and may be increased, according to conditions.

(iv) Potatoes (1/1/78)

Digging and	\$20.00 1st hour,
Planting	\$16.00 thereafter
Bulk Harvesting	\$9.00 per tonne plus labour
Grading	\$0.80 per bag and store charge
Roguing	\$20.00 per hectare (approx.)

(b) Sacks 1978 Prices (ex store unless otherwise stated)
cents (each).

	94 cm	104 cm	116 cm	122 cm
New Sacks	52.8	56.7	63.5	75.9
Ex Store Christchurch	55	58.5	65.5	78
Buying Back	35	38	45	54
Once Shot Sacks	52	55	62	73
Buying Back	28	32	36	42
Second Hand Sacks (including Chaff Sacks)	47	50	55	62
Buying Back	19	22	29	31

Metrication: (Grain and Small Seeds)

Metric units for trade to be used as follows:

(a) Small Seeds Kilogram

(b) Grain, peas, potatoes, onions and stock food Tonne

Sowing Rates and Crop Yields:

Sowing rates will be expressed in kilograms per hectare.

Crop yields will be expressed in tonnes per hectare.

Metric Pack Weights and Sizes:

Metric packs for machine dressed grain and seeds will be as follows:

Pack Weights	Gross Weight
Clovers, Ryegrasses, Browntop, Dogstail, Timothy, Fescue, Brassicas and Lucerne	50kg
Cocksfoot and Prairie Grass	35kg
Field Peas	75kg
Garden Peas	50kg

M/D Seed Wheat, M/D Seed Lupins, Tares and Ryecorn	75kg
M/D Seed Barley	70kg
M/D Seed Beans – Small seed	50kg
– Large seed (e.g. Scarlet, Broad)	40kg

Sack Sizes:

The following sack sizes will be adopted for metric packings, viz:

1220mm x 670mm	(48" x 26½")	122cm
1170mm x 585mm	(46" x 23")	116cm
1040mm x 585mm	(41" x 23")	104cm
940mm x 585mm	(37" x 23")	94cm

and the packings will be:

	Sack Sizes
Ruanui Ryegrass, Ariki Ryegrass, Browntop, Timothy, Dogstail, Field Peas, Seed Wheat, Seed Barley, Seed Oats, Seed Lupins, Seed Tares, Seed Ryecorn.	(48" x 23") 116cm
Manawa Ryegrass, Tama Ryegrass, Italian Ryegrass, Cocksfoot, Prairie Grass, Fescue.	(48" x 26½") 122cm
Garden Peas, Clovers, Lucerne, Beans, and all Brassicas	(37" x 23") 94cm
Field Peas, M/D Seed Wheat, M/D Seed Lupins occasionally packed in:	(41" x 23") 104cm

Potato sacks – no rebate is paid. Usually second-hand sacks are bought for 45 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 0.58m sacks.

Capacities:

Ryegrass Perennial	63.5 kg	(7bu.)	M/D in 122cm sacks, 45 kg (5bu.) F/D
H1 Italian	54.5 kg	(6bu.)	M/D in 122cm sacks, 36 kg (4bu.) F/D
Cocksfoot	45 kg	(100lb.)	M/D in 122cm sacks, 27 kg (60lb.) F/D

Phalaris	63.5 kg	(140lb.)	In double 116cm sacks, M/D 54.5 kg (120lb.) in single sacks F/D
Timothy	63.5 kg	(140lb.)	In double 116cm sacks, M/D 45 kg (100lb.) in single sacks F/D
Clover & Lucerne	72.5 kg	(160lb.)	In double 116cm sacks, M/D 54.4 kg (120lb.) in single sacks F/D
Wheat	81.5 kg	(3bu.)	F/D – 116cm sacks
Barley	79 kg	(3½bu.)	F/D – 116cm sacks
Oats	63.5 kg	(3½bu.)	F/D – 116cm sacks
Field Peas	81.5 kg	(3bu.)	F/D – 116cm sacks
Garden Peas	68 kg	(2½bu.)	F/D – 116cm sacks
Lupins	81.5 kg	(3bu.)	F/D – 116cm sacks
Linseed	76 kg	(1½cwt.)	
Potatoes	72.5 kg	(160lb.)	14 sacks per tonne, 122cm sacks.

Quantities of sacks required by Farmer:

The farmer requires sacks to transport his F/D product to the store, and having been M/D there, a heavier weight can be put into the bag. As indicated above, clovers phalaris and timothy are delivered in single sacks but when M/D 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 34 kg M/D (3¾bu.)

Clovers 1 sack per 36 kg M/D (80lb.)

Twine:

Seaming: 1 hank 1.1 kg (¼lb.) – \$2.00

(c) Seed Certification Fees (Effective from 1.1.78)

(i) For Seed Certified on Field Inspection Cents per Kg.

 Ryegrass, all varieties 1.1c

 Cocksfoot, Timothy, Fescue, Phalaris,
 Tuberosa, Agrostis Sp., Crested
 Dogstail, White Clover, Red Clover,

Subterranean Clover, Lotus,	
Lucerne	2.2c
Wheat, Oats, Barley, Ryecorn Beans,	
Peas, Lupins	0.1c
Prairie Grass	0.6c
Brassicac (including Turnips and	
Swedes), Beet	0.8c
Linen Flax	0.3c
Maize	0.3c
(ii) For Seed Certified on Laboratory Test alone	
N.Z.P.P. Perennial Ryegrass	0.6c
N.Z.P.P. White Clover	1.4c
(iii) Seed Potatoes	
All varieties – \$6.00 per half hectare or part.	
A minimum fee of \$6.00 is to be charged in cases where a grower's total area is rejected in full or in part.	
(iv) Late Entry Fee	
A late entry fee of \$10 (covering all entries of any one crop on one farm) is payable by the grower in respect of any application for certification received and accepted after the closing date fixed for a particular crop.	
(d) Seed Testing Fee (Effective 1.1.78)	
(i) Type of Certificate – New Zealand Domestic Test	
	Charge per line of Seed
Purity only	\$6.50
Germination only	\$6.50
Purity and Germination combined	\$12.00
Linseed valuation	\$7.00
Moisture tests	\$7.00
Copy of New Zealand Certificate	\$2.00
Health Test	\$7.00
(ii) Overseas Regulations Tests	
(Orange International Certificate)	
Request received with sample	
(a) Unendorsed orange certificate only	\$12.00

(b) Unendorsed orange certificate		
N.Z. certificate		\$14.00
(c) Endorsed orange certificate only		\$12.00 plus
		cost of endorsement
(d) Endorsed orange certificate plus		
N.Z. certificate		\$14.00 plus
		cost of endorsement
(iii) Cost of endorsements for compliance with requirements of the following countries:		
(a) Australia		\$5.00
(b) Canada		\$7.00
(c) Chile		\$5.00
(d) E.E.C. (including Ireland)		\$6.00
(e) South Africa		\$5.00
(f) Spain (1000 gram Search)		\$10.00
(g) U.S.A. (Federal Compliance)		\$5.00
(e) Consolidated Dressing and Store Handling Charges: (Receiving and Delivering, Sampling, Weighing, Dressing, Brushing of Sacks and Disposal of Offal).		
1977 Charges (Effective 1.1.78)		Rates per kg.
Ryegrass – Perennial, Italian, Tama,		
Short Rotation and Ariki		4.4c
– Each additional time through		2.2c
Cocksfoot		13.1c
Clovers – White, red, lucerne, Alsike, etc.		13.1c
Grass Seed – (Fine) – Browntop, Fescue,		
Dogstail and Timothy		13.1c
Turnips, Chou Moellier, Kale and Mustard		12.31c
Rape		9.03c
Prairie Grass		19.57c
Yarrow		25.97c
Separating White Clover and Ryegrass	per sack	68.0c
Separating Mixed Oats and Ryegrass	per sack	68.0c
Arthocide dusting	per tonne	\$17.07

Orthocide or Spergon Treating	per tonne	\$17.07
Blending Clovers and Blending Grass Seeds	per sack	\$1.23
		Rates per tonne
Wheat and Rye-corn		\$17.50
Barley		\$20.79
Field Peas and Lupins		\$21.88
Garden Peas and Beans		\$27.35
Oats – Dressing and Clipping		\$24.07
Linseed		\$36.10

(f) Box Hire – \$2–\$2.50 (depends on size)

A box is deemed to hold 13 sacks of Grasses (roughly 530 kg F/D)

A box is deemed to hold 18 sacks of Grain (roughly 1225 kg)

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.	25% offal leaving 75% M/D
Field dressed Timothy dress 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 yeilds, 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

10 ha yielding 600 kg/ha M/D	= 6000 kg M/D
Actual quantity sent in for dressing was 8000 kg.	
Dressing charge – 8000 kg @ \$4.40/100 kg.	= \$352.00
	= 5.9c/kg M/D

Certification charges – \$1.10/100kg on 6000 kg.	= \$ 66.00
	= \$418.00
∴ Total charges	= 6.9c/kg M/D

(b) **White Clover**

10 ha yielding 200 kg/ha M/D	= 2000 kg M/D
Actual quantity sent for dressing	= 2700 kg F/D
Dressing charge – 2700 kg @ \$ 13.10/100 kg	= \$353.70
Certification charges – 2000 kg @ \$2.20/100 kg	= \$ 44.00
	= \$397.70
Total charges	= 19.9c/kg M/D

(g) **Grain and Seed Drying Charges: (1977 effective 1.1.78)**

	15 - 17% Moisture	\$ 9.00/tonne
Peas	17 - 18% Moisture	\$11.00/tonne
	Over 18% Moisture	\$13.00/tonne
	Second time over	\$ 6.50/tonne
Wheat, Oats and Barley	15 - 17% Moisture	\$ 8.00/tonne
	17 - 18% Moisture	\$ 9.00/tonne
	Over 18% Moisture	\$11.00/tonne
	Second time over	\$ 5.50/tonne
Small Seeds	Up to 17% Moisture	4.4 cents/kg
	17 - 18% Moisture	5.5 cents/kg
	Over 18% Moisture	6.6 cents/kg
	Second time over	3.3 cents/kg

For second run over dryer, charge is half above rates

N.B. With increased fuel and electricity costs imminent early in 1978 these charges could be subject to adjustment at a later date.

5. CULTIVATION CONTRACTS

(a) Crawled Tractors

Manufacturers Power Rating (engine)	Hourly hire rate
25 – 38 kw (40 – 50 hp)	\$17.50
39 – 49 kw (51 – 65 hp)	\$20.00
50+ kw (66 + hp)	\$27.50

(b) Wheeled tractors

P.T.O. Power Rating kw (hp)	Hourly hire rate \$
– 22 kw (– 29 hp)	12.50
23 – 30 kw (30 – 40hp)	14.00
31 – 38 kw (41 – 50 hp)	14.75
39 – 44 kw (51 – 59 hp)	15.50
45 – 52 kw (60 – 69 hp)	17.00
53 – 59 kw (70 – 79 hp)	18.00
60 – 64 kw (80 – 85 hp)	20.00
65 – 71 kw (86 – 95 hp)	23.00
72 – 89 kw (96 – 119 hp)	26.00
90 – 105 kw (120 – 140 hp)	28.00
106 – 120 kw (141 – 160 hp)	33.50

(c) 4 Wheel Drive Tractors

P.T.O. Power Rating kw (hp)	Hourly Hire Rate \$
– 30kw (– 40 hp)	14.00
31 – 41 kw (41 – 55 hp)	16.50
42 – 49 kw (56 – 65 hp)	18.00
50 – 56 kw (66 – 75 hp)	21.00
57 – 64 kw (76 – 85 hp)	22.00
65 – 75 kw (86 – 100 hp)	25.00
76 – 90 kw (101 – 120 hp)	27.00
91 – 105 kw (121 – 140 hp)	29.50
106 – 120 kw (141 – 160 hp)	35.00
121 – 135 kw (161 – 180 hp)	38.00
135 + kw (180 + hp)	43.00

(d) Extra Implements

Plus the following Extra Charge for Implements

P.T.O. Power Rating		Hourly Charge
Kw	(hp)	\$
– 30 kw	(– 40 hp)	2.00
31 – 45 kw	(41 – 60 hp)	2.50
46 – 60 kw	(61 – 80 hp)	3.25
61 – 75 kw	(81 – 100 hp)	4.25
75 + kw	(100 + hp)	5.50

OR/ Plus the following Extra Charge for Rotary Hoes

– 1270 mm	(– 50”)	2.75
1295 – 1524 mm	(51 – 60”)	3.25
1549 – 1778 mm	(61 – 70”)	4.00
1803 – 2032 mm	(71 – 80”)	5.00
2057 – 2286 mm	(81 – 90”)	6.25
2311 – 2540 mm	(91 – 100”)	7.75
2540 + mm	(100 + ”)	10.00

6. DAIRY SHED EXPENSES

Cow Covers Lined: Brown Jute – \$18.25, Green Jute \$21.95
 Unlined: Brown Jute – \$15.00, Green Jute \$19.65

Inflations 1 set moulded cost \$10.20 per doz.

Milk Rubbers \$2.05 per metre changed 1 set year

Air Rubbers \$1.53 per metre changed ½ set year

Claw Rubbers \$2.69 doz. changed 2 sets year

Inflations:

“Alfa Laval” Type \$1.30 each (with petals)

\$1.25 each (without petals)

Galvanised Buckets \$6.95 (13.64 litres or 3 gals)

Milk Buckets (S.S.) \$26.60 (14l.) Calf bucket \$6.10

Polythene buckets \$6.24 (13.64 litres or 3 gals)

Oil – Pump \$1.04 per litre

Teat Salve \$8.82 per 5 kilo tin

Milk Stone Remover \$8.40 per 5 lt

\$63.25 per 45 lt

Detergents S.S. \$8.35 per 5 kilo tin

Iodophor	\$30.60 per 20 l.		
Sanitizers	\$8.27 per 5 l.		
Iodophor Vat			
Cleaners	\$35.20 per 20 l.		
Non Ionic Wetting			
Agents	\$17.90 per 20 l.		
Dairy Ointment	\$6.88 per 4 lt.		
Healex	\$8.11 per 4 lt.		
Spray On teat			
lotion Teatsan	\$17.95 per 5 lt.		
Brooms (36cm)	\$5.95		
Costs per cow milked	–	factory supply	\$2.90 – \$4.00
	–	town milk supply	\$6.00 – \$6.50

7. ELECTRICITY

- Costs per cow milked – Factory supply shed (milking, water heater, water pump, waste disposal) \$4.00 – \$5.50 per cow.
- Town milk supply shed (milking and water heater, water pump, waste disposal) \$6.00 – \$8.00 per cow.
- Owners household is excluded.
- Power to outbuildings, whares, motors, would total \$70 – \$100 per year.

8. FEED

(a) Haybaling

(i) Contract Rates:

– Windrowing and conditioning	\$26.20 per ha
– Raking Hay, once over	\$17.00 per hour
– Mowing Hay, cutterbar	\$17.00 per hour
disc mowing	\$19.50 per hour
– Conditioning Hay	\$17.00 per hour
– Mowing and conditioning, cutterbar	\$20.00 per hour
rotary	\$22.50 per hour
⇒ Baling, Hay or straw	.28 per bale
– Sledging by Contractor	.05 per bale
– Half Ton Baler, round bales	\$ 4.70 per bale
square bales	\$ 4.40 per bale

For any quantity less than 300 bales, price may be by arrangement. 20% surcharge on hill country.

- Collecting Jumble .02 per bale
- Picking up bales (hay or straw) .28 per bale

(ii) Twine:

Baling Twine \$50.76 per 36kg bale (80 lbs)
4 balls per bale. \$12.69 per 9 kg ball (20 lbs)
200 bales (hay) per ball or twine.
6.3 cents per hay bale.

Binder Twine \$4.41 per 3 kg spool (6.6 lbs)
8 spools per bale.

Synthetic Twine \$66.00 per bale.

(b) Stock Foods

Calf Rearing Costs:

- Denkavit - 55 cents/kg - 44c/calf/day @ 0.75 kg/calf
- Skim milk - 50 cents/kg - 45c/calf/day @ 0.90 kg/calf
powder
- Whole Milk - 7 cents/litre - 35c/calf/day @ 5 litres/calf

Sheep Supplements:

Moose Nuts:

- (i) Pure Linseed nut \$204.00/tonne - Freight paid (33%protein)
- (ii) Linseed Balance nut \$185.45/tonne - Freight extra
(18% protein)

Peerless sheep nuts (linseed based) \$141.00/tonne - Freight extra

- Molactrate Block, ex store \$ 4.60/23 kg (50 lbs) block
- Denkavit \$12.74/20 kg (44 lbs) bag
- Molasses \$11.13/28 kg (61 lbs)
- Agricultural salt \$ 5.85/50 kg (110 lbs)
- Bran \$ 6.18/50 kg (110 lbs)

Salt Blocks

- Standard (Cobaltized and Iodized) \$ 4.46/20 kg (44 lbs)
- Copperised (Sheep) \$ 4.57/24 kg (53 lbs)
- Magnesium (Co, I & Mg) \$ 5.10/20 kg (44 lbs)

(d) Grazing Fees Agistment

Payment for grazing varies according to the class of livestock the time of the year, seasonal conditions and the district.

9. FREIGHT AND CARTAGE

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

Stock Capacities of Railway Wagons:

Type of Wagon:

Cattle

H. Wagon

8

HC

1/3 bigger than H

11 – 12

TW

2 x H

17

Sheep

J Wagon

60

JC

1/3 bigger than J

80 – 90

S

2 x J

126

J, JC and S Wagons are two-deck

Classified Rates are

H and J wagons

Class

M

HC + JC wagons

M + 1/3

S + J wagons

M double rate

Classification of Goods Carried

Class B Agricultural Implements

Class C Front end loaders, Tractors, Gates

Class D Binder twine, Insecticides, Clover Seed, Fencing material (NOT including wooden posts, stays, strainers and battens which are class E).

Class E Bags, Grain, Seeds, Potatoes, Peas, Daggins, Wooden Posts, Stays, Strainers and Battens, Concrete Products, Field Tiles.

Class E + Hay, straw, Chaff and Lime.

50%

- Class H Wool
- Class K Timber
- Class M Livestock
- Class R Artificial Fertilizers

Goods Classified: Rates at 16/6/76 Current 1/1/78.

Distance Kilo- metre	B Per tonne \$	C Per tonne \$	D Per tonne \$	E Per tonne \$	E plus 50% per tonne	H Undumped Per bale	K Per cubic metre	M Per wagon \$	R per tonne \$
65	24.80	16.53	13.22	5.97	8.96	1.96	6.85	38.46	5.01
80	26.79	17.86	14.29	6.51	9.77	2.12	7.51	42.89	5.52
95	28.80	19.20	15.36	7.05	10.58	2.27	8.17	47.32	6.02
110	30.80	20.53	16.42	7.59	11.39	2.43	8.83	51.75	6.53
146	35.69	23.79	19.03	8.87	13.31	2.82	10.46	63.27	7.85
186	44.42	29.61	23.69	11.11	16.67	3.51	13.25	81.56	10.01
226	52.02	34.68	27.74	13.00	19.50	4.11	15.32	97.87	11.93
266	57.96	38.64	30.91	14.36	21.54	4.58	16.32	111.22	13.21
306	62.90	41.93	33.54	15.72	23.58	4.97	17.32	123.28	14.13
358	67.46	44.97	35.98	17.58	26.37	5.33	18.72	137.11	15.33
438	74.90	49.93	39.94	20.40	30.60	5.92	20.88	158.83	17.25
518	82.34	54.89	43.91	23.22	34.83	6.51	23.03	180.56	19.18
598	89.76	59.84	47.87	26.04	39.06	7.09	25.18	202.29	21.11
662	95.72	63.81	51.05	28.30	42.45	7.56	26.91	219.67	22.65

Road Transport Rates (as from 14th October, 1977) Canterbury Area.

1. Lime (1.6 miles = 1 km)

(a) Cartage (Bulk) 4000 kg min. load

	Per tonne		Per tonne
2 km	\$1.37	8 km	\$1.92
16 km	\$2.76	24 km	\$3.66
32 km	\$4.48	40 km	\$5.20
48 km	\$5.84	56 km	\$6.45
64 km	\$6.97	72 km	\$7.50
80 km	\$8.03		

Thereafter, \$0.060 each additional km.

(b) Lime Transport Assistance (See Section on Subsidies).

2. Fertilizer

(a) Bulk 4000 kg min. load.

	Per tonne		Per tonne
2 km	\$1.91	8 km	\$2.47
16 km	\$3.43	24 km	\$4.41

32 km	\$5.25	40 km	\$6.13
48 km	\$7.02	56 km	\$7.86
64 km	\$8.69	72 km	\$9.42
80 km	\$10.18		

Thereafter, \$0.091 each additional km.

- (b) Bags 3000 kg min. load

	Per tonne		Per tonne
2 km	\$2.25	8 km	\$2.88
16 km	\$4.12	24 km	\$5.20
32 km	\$6.16	40 km	\$7.04
48 km	\$7.85	56 km	\$8.57
64 km	\$9.30	72 km	\$10.09
80 km	\$10.82		

Thereafter, \$0.091 each additional km.

- (c) Fertiliser Freight Subsidy see section on Subsidies.

The subsidy is calculated on the mileage from your farm to the nearest fertilizer works, or, if you have ordered an imported line, to the port of entre.

3. Hay Truck and Driver only) 120 bales min. load.

40 bales or more per tonne – less \$0.2 per bale

	Per Bale		Per bale
8 km	\$0.136	16 km	\$0.172
24 km	\$0.223	32 km	\$0.266
40 km	\$0.299	48 km	\$0.331
56 km	\$0.364	64 km	\$0.395
72 km	\$0.422	80 km	\$0.446

Thereafter, \$0.0031/bale each additional km.

4. Grain

- (a) Bagged 39 bags min. load.

Including small seeds under 16 bags to the tonne, and potatoes.

	Per Sack		Per Sack
2 km	\$0.160	8 km	\$0.185
16 km	\$0.251	24 km	\$0.316

32 km	\$0.378	40 km	\$0.439
48 km	\$0.498	56 km	\$0.555
64 km	\$0.608	72 km	\$0.663
80 km	\$0.716		

Thereafter, \$0.0062 each additional km. Ex paddock – schedule rate plus \$0.065 per sack, includes bag loaded and all labour. Ex heap in paddock – schedule plus \$0.03 per sack.

(b) Bulk (ex acceptable silo) 4000 kg min. load.

	Per tonne		Per tonne
Up to: 2 km	\$1.89	8 km	\$2.37
16 km	\$3.12	24 km	\$3.79
32 km	\$4.45	40 km	\$5.08
48 km	\$5.72	56 km	\$6.32
64 km	\$6.90	72 km	\$7.50
80 km	\$8.09	85 km	\$8.46
90 km	\$8.81	97 km	\$9.29

Thereafter, \$0.074 each additional km.

Use of carrier Auger – \$0.39 per tonne.

Ex header – \$0.60 per tonne.

Converting bags to bulk – \$1.00 per tonne.

(c) Grain Peas and Grass Seed – Bulk in boxes over 813 kg
4000kg min. load.

	Per tonne		Per tonne
2 km	\$ 3.12	8 km	\$ 3.76
16 km	\$ 4.82	24 km	\$ 5.91
32 km	\$ 6.87	40 km	\$ 7.73
48 km	\$ 8.57	56 km	\$ 9.32
64 km	\$10.09	72 km	\$10.83
80 km	\$11.59		

Thereafter, \$0.091 each additional km.

In boxes 457 – 813 kg 4000 kg min. load.

	Per tonne		Per tonne
2 km	\$ 3.79	8 km	\$ 4.51
16 km	\$ 5.60	24 km	\$ 6.64
32 km	\$ 7.52	40 km	\$ 8.39

48 km	\$ 9.13	56 km	\$ 9.89
64 km	\$10.66	72 km	\$11.40
80 km	\$12.14		

Thereafter, \$0.091 each additional km.

In boxes up to 457 kg 4000 kg min. load.

	Per tonne		Per tonne
2 km	\$ 4.14	8 km	\$ 4.82
16 km	\$ 5.91	24 km	\$ 6.99
32 km	\$ 7.93	40 km	\$ 8.79
48 km	\$ 9.67	56 km	\$10.40
64 km	\$11.16	72 km	\$11.91
80 km	\$12.67		

Thereafter, each additional km. – \$0.091

5. Grass Seed and other small seeds 48 bags min. load.

(a) 16 bags and over to the tonne

	Per Bag		Per Bag
2 km	\$0.149	8 km	\$0.175
16 km	\$0.235	24 km	\$0.294
32 km	\$0.347	40 km	\$0.397
48 km	\$0.443	56 km	\$0.484
64 km	\$0.527	72 km	\$0.570
80 km	\$0.615		

Thereafter, \$0.0050 each additional km.

6. Wool by Road 14 bales min. load.

	Per Bale		Per Bale
2 km	\$0.69	8 km	\$0.84
16 km	\$1.05	24 km	\$1.27
32 km	\$1.48	40 km	\$1.67
48 km	\$1.87	56 km	\$2.03
64 km	\$2.20	72 km	\$2.30
80 km	\$2.42		

Thereafter, \$0.0100 each additional km.

\$0.22 per bale off ground.

7. Lambs and Hoggets by Road (all per head)

	Store Lambs	Fat Lambs	Hoggets
8 km	\$0.130	\$0.141	\$0.149
16 km	\$0.167	\$0.185	\$0.199
32 km	\$0.239	\$0.264	\$0.288
48 km	\$0.294	\$0.330	\$0.364
64 km	\$0.345	\$0.390	\$0.433
80 km	\$0.400	\$0.451	\$0.498
97 km	\$0.451	\$0.513	\$0.565
113 km	\$0.503	\$0.570	\$0.621
129 km	\$0.551	\$0.621	\$0.680
145 km	\$0.594	\$0.671	\$0.733
161 km	\$0.637	\$0.716	\$0.781

A lamb becomes a hogget on 1 September. A hogget becomes a sheep on 1 January.

8. Sheep

	Store Sheep per head	Fat Sheep per head
8 km	\$0.156	\$0.180
16 km	\$0.211	\$0.244
32 km	\$0.312	\$0.366
48 km	\$0.402	\$0.472
64 km	\$0.477	\$0.573
80 km	\$0.546	\$0.666
97 km	\$0.611	\$0.755
113 km	\$0.675	\$0.839
129 km	\$0.736	\$0.920
145 km	\$0.797	\$0.985
161 km	\$0.846	\$1.033

9. Fat Lambs to Freezing Works

	Per Head		Per Head
8 km	\$0.144	16 km	\$0.189
32 km	\$0.268	48 km	\$0.336
64 km	\$0.397	80 km	\$0.458
97 km	\$0.520	113 km	\$0.579
129 km	\$0.630	145 km	\$0.680
161 km	\$0.723		

Penal rates for Sheep and Lambs.

These will apply where the farmer does not give the cartage contractor 24 hours notice of the job to be done.

Lambs per head \$0.031

Sheep per head \$0.039

10. Store Cattle All per head.

	Calves 2-6 mths	Weaners 7-12 mths	Yearlings 13-18 mths	Store Cattle and Boners
8 km	\$0.53	\$0.65	\$0.84	\$1.10
16 km	\$0.84	\$0.96	\$1.18	\$1.61
32 km	\$1.27	\$1.53	\$1.87	\$2.56
48 km	\$1.68	\$2.01	\$2.52	\$3.43
64 km	\$2.13	\$2.49	\$3.18	\$4.29
80 km	\$2.56	\$2.94	\$3.79	\$5.13
97 km	\$2.99	\$3.38	\$4.39	\$5.92
113 km	\$3.36	\$3.81	\$4.96	\$6.70
129 km	\$3.71	\$4.21	\$5.48	\$7.36
125 km	\$4.05	\$4.60	\$5.97	\$7.97
161 km	\$4.34	\$4.96	\$6.44	\$8.50

11. Fat Cattle All per head.

	Fat Cattle 19-24 mths and	Fat Cattle in-calf cows	Fat Steers over 3 years
8 km	\$1.00	\$1.27	\$ 1.42
16 km	\$1.42	\$1.77	\$ 2.04
32 km	\$2.23	\$2.75	\$ 3.19
48 km	\$3.02	\$3.69	\$ 4.29
64 km	\$3.76	\$4.64	\$ 5.36
80 km	\$4.48	\$5.53	\$ 6.42
97 km	\$5.18	\$6.37	\$ 7.42
113 km	\$5.84	\$7.24	\$ 8.34
129 km	\$6.44	\$8.02	\$ 9.22
145 km	\$6.97	\$8.76	\$ 9.97
161 km	\$7.45	\$9.44	\$10.64

Bulls over 2 years at 3 year steer rate plus \$2.37 per head.

10. FERTILIZERS (as from 1st September 1977)

Fertilizer Subsidy:

(a) Price Subsidy (see section 27)

(b) Freight Subsidy (see section 27)

N	P	K	S		Farmers Bulk Per Tonne	Farmers Bags Per Tonne
GENERAL FERTILISERS						
0	8	0	10	Flowmaster Super	45.50	53.50
0	7	0	8	Serpentine Reverted Super	45.00	53.00
0	7	0	8	Lime Reverted Super	43.05	51.05
0	9	0	11	Superphosphate	45.80	53.80
0	6	14	7	30% Potash Super	57.05	65.05
0	7	0	19	10% Sulphur Super	48.30	56.30
0	8	0	10	Cobalt Super	54.85	62.85
0	8	0	10	Copper Super	58.50	66.50
0	8	0	10	Molybdate Super	49.15	57.15
0	8	0	10	Boron Super	54.90	62.90
CROPPING AND SPECIAL FERTILISERS						
6	6	0	14	Nitrogen Super	62.45	70.45
2	7	0	11	Turnip and Rape Fertiliser	51.85	59.85
6	6	0	14	Boron Turnip & Rape Fertiliser **	78.75	86.75
6	5	5	13	Multipurpose Fertiliser	64.60	72.40
0	8	0	10	Lucerne Sowing Fertiliser	51.75	59.75
0	4	24	5	Lucerne High K Fertiliser	72.10	80.10
0	6	14	7	Lucerne Fertiliser	65.15	73.15
9	3	10	4	Canterbury Orchard Fertiliser	103.50	111.50
8	4	8	16	Horticultural Fertiliser	124.75	132.75
0	6	14	7	Pea Fertiliser	59.65	67.65
6	5	5	13	Potato Fertiliser	64.40	72.40
NITROGEN AND POTASSIUM FERTILISERS						
21	0	0	24	Ammonium Sulphate	98.55	106.55
0	0	48	0	Potassium Chloride	80.55	88.50
46	0	0	0	Urea	—	188.55
26	0	0	0	Calcium Ammonium Nitrate (CAN)	—	182.35
0	0	40	17	Potassium Sulphate	—	250.15
20	0	0	1	Liquid Nitrogen	82.95	—
IMPORTED COMPOUND FERTILISERS						
13	14	14	0	Cropmaster 'Extra'		
18	20	0	0	Cropmaster D.A.P.		N/A
(Di-Ammonium Phosphate)						

SPECIAL MIXTURES – Orders for Special Mixtures will be accepted ONLY for 2 TONNES or more.

** DO NOT SOW IN CONTACT WITH SEED

Spreading Fertilizer – subject to Bounty (see section 27)

(1) Ground Spread

Average Paddock Size	Cost per hectare
Under 4 hectares	\$2.19
4 – 8 hectares	\$2.00
8 – 16 hectares	\$1.80
Over 16 hectares	\$1.70

Minimum cartage as for 3 tonnes.

Stoney, Swampy and hill country – extra by arrangement.

(2) Aerial Top Dressing and Oversowing

Basic Application Rate

300 HP Fletcher	\$161.00/hour
400 HP Fletcher	\$194.00/hour
Air truk	\$175.00/hour

(a) Lime Application – On a quotation basis.

(b) Oversowing and Prills

(All rates per 100kg)	9.17 kg – 16.8 kg per hectare	16.8 kg – 33.63 kg per hectare	33.63 kg and over per hectare
Under 225kg	\$41.75	\$37.80	\$34.40
225 – 905kg	\$37.80	\$29.40	\$25.10
Over 905kg	\$34.40	\$23.30	\$19.25
9.17 kg per hectare and less		\$71.05	
Minimum charge per job		\$56.50	

Discounts + Heavy Sowing Rate

1.2T per ha or more – less 5% on heavy application and large orders (100 tonnes and above), less 7½% for orders 100 tonnes and above from one Airstrip at one time, less 2½%

Surcharges + light sowing rate		
Under .25T/ha		\$6.91/T
Under .19T/ha		\$13.71/T

11. LIME

White Rock Lime Co.

Cost per tonne on trucks at works

Green Lime	\$4.00
Dry Lime	\$6.00

Spreading (per hectare) – subject to bounty (see Subsidies)

	Flat Grassed	Flat Worked & Rolled	Hill worked & Grassed
Under 2½ tonnes/ha	\$2.47	\$2.65	Flat rates
Under 2½ tonnes/ha	\$2.65	\$3.03	Plus 53 cents
Over 2½ tonnes/ha	\$3.03	\$3.43	Per hectare

Mechanical loader at rail siding an extra \$0.77 per tonne.

12. MISCELLANEOUS CONTRACT RATES

Throughout this manual, contract rates listed are minimum prices based on average conditions, and may be increased according to conditions.

- (a) Saw bench – \$14.00 per hour with one operator.
- (b) Gorse Cutting – \$11.00 per hour.
- (c) Tree Topping – \$31.00 per hour.
- (d) Stone Picking – \$21.00 per hour.
- (e) Potato Harvesting – \$50.00 per hour or \$13.75 per tonne plus extra labour. When crop yields less than 30 tonnes per day, hourly rate applies.
- (f) Drilling – \$16.00 per hectare.
- (g) Direct Drilling – \$21.30 per hectare.
- (h) Precision Drilling – \$62.50 per hectare onions, carrots 250mm rows.
\$50.00 per hectare beans, 500mm rows.
\$50.00 per hectare, fodder beet.

13. SEEDS EX MERCHANTS' STORES (SUBJECT TO ALTERATION)

(a) Wheat (treated price Sacks included)

Certified 2nd Generation

Takahe, Aotea, Kopara, Karamu, Raven \$210.45 per tonne

Arawa \$198.45

Hilgendorf \$222.45

Certified 1st Generation

Takahe, Aotea, Kopara, Karamu \$212.45 per tonne

Arawa \$200.45

Hilgendorf \$224.45

(b) Barley (treated price sacks included)

Uncertified \$180.00 per tonne

2nd generation \$180.00

1st generation \$185.00

(c) Oats

All grain varieties quoted at \$175 – \$185.00 per tonne

Winter Oats \$145.00 per tonne

(d) Lupins

Bitter Blue \$215.00 per tonne

Borre

White \$185.00 per tonne

(e) Ryecorn

CRD \$185.00 per tonne

(f) Maize \$295.00 per tonne

(g) Peas

Field Peas (Contract) treatment inc. (Treating \$17.07/tonne)

Rondo \$250.00 per tonne

White Prolific \$275.00

Maples \$275.00

Free Seed prices – plus \$10 – \$20 per tonne.

(h) Freezing Peas

\$16.00 per 50 Kg (for processing).

(i) **Small Seeds**

Retail prices from merchants are \$0.20 to \$0.50 per Kg more than price paid to farmer.

This can only be a rough guide as the small seeds market is extremely variable, with daily fluctuations in price.

Root Seeds:

Rape	\$1.30 per Kg	Chou moellier	\$4.20 per Kg
Turnip	\$2.40 per Kg	Fodder Beet	
Swede	\$2.40 per Kg	segmented	\$4.00 per Kg

(j) **Aerial application of seed**

Variable according to quantity and distance with a minimum basic rate of \$132 per hour.

See Section on Aerial Topdressing and oversowing.

(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 1 year old seed is sown. If a farmer is retaining a high grade on the Certification scale then he buys all of his grass seed. If using his own seed it will be treated.

14. STOCK SELLING CHARGES

(a) **Yard Fees (Loading charge 3c paid by purchaser).**

	Addington	Amberley
Sheep	12c	14c
Fat Cattle	98c	
Store Cattle	79c	
Vealers	79c	
Dairy Cows	98c	
Calves	79c	
Bulls	\$1.78	
Porkers	27c	
Baconers	27c	
Store pigs	18c	

Coalgate	
Sheep shareholders	7c
Non Shareholders	8c
Rams	25c
Calves Shareholders	70c
Non Shareholders	80c
Cattle Shareholders	80c
Non Shareholders	90c
Horses	25c
Pigs	10c
Dogs	25c

Culverden	
Sheep	17c
Rams	17c
Horses	N/A
Dogs	N/A
Calves and	
Store Cattle	99c

Hawarden	
Sheep	8c

Little River	
Sheep	8c
Cattle	25c
Rams	25c

Sheffield	
Sheep Shareholders	16c
Non Shareholders	17c
Ram Shareholders	50c
Non Shareholders	50c

Oxford	
Sheep	8c
Rams	15c
Coalgate, Hawarden, Sheffield and Little River – subject to alteration.	

(b) Addington Trucking Charges:

Sheep – 5c per head for outward trucking or rail.
 Bulls – 30c per head for outward trucking.
 Cattle – 20c per head for outward trucking.

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

Sale yards	
Sheep	3.5%
Fat Cattle	3.5%
Store Cattle	3.5%
Vealers	5.5%
Bulls	5.5%

Clearing Sales	
Sheep	4.25%
Store Cattle	4.25%
Pigs	5.5%
Dairy Cows	5.5%

Sale Yards	
Dairy Cattle	5.5%

Clearing Sales	
Implements & Sundry	7.5%

Pigs	4.25%	Furniture	12.5%
Horses (Bloodstock)	6%	Special Sales	
Horses	5%	Stud Cattle	5.5%
Grazing	7.5%		

15. SHEARING EXPENSES

- (a) Plant
- | | |
|--|-----------|
| Sunbeam | |
| Vertical Plant Single Stand | \$390.00 |
| Double Ended Grinder | \$420.00 |
| Dagging Plant | \$275.00 |
| Handpiece | \$123.00 |
| Wool Press | |
| Donalds Model H.S.W. | \$677.00 |
| Donalds Steel Tipover Electric
(2 h.p.) | \$1345.00 |
- (b) Shed Expenses
- Wool packs ex store \$2.38 Jute, \$2.67 Synthetic each. Assess number used as 1 per 150 kg. wool (3 per 1000 lbs.).
- | | |
|---------------------------------|--|
| Twine 40 threads per hank | \$1.39 per hank |
| Glue | 230 gm. tin (8 oz.) = \$1.36 |
| Eartags | \$6.00 per 100+ \$1.50 if stamped. |
| Emery paper – fine | \$1.35 per sheet |
| (Sheepo) – course | \$1.35 per sheet |
| Shearing plant running expenses | Electricity – approx. \$29.00 per 1000 |
- (c) Wool Charges 1975/76 – applies to 1978
- Brokers:
- | | |
|--|-----------|
| Receiving, weighing, cataloguing, etc. | 4.5c/kg |
| Reclassing and/or Binning of Fleece | 4.014c/kg |
| Reclassing and/or Binning of oddments | 6.236c/kg |
| Blending | 3.014c/kg |
- (Commission included in above charges)
- Other:
- | | |
|-----------------------------------|---------------------------------|
| Wool Board Levy | 3% of Gross Proceeds |
| Stabilisation Levy | 3% of Gross Proceeds |
| Sheep's back insurance (optional) | 14c per \$100 gross
proceeds |
| Government Earthquake Insurance | 1c per \$100 gross
proceeds |

16. TREES

Price per 100	(Supply Only – does not include planting)	
Pinus Radiata	\$6.00	18 month trees
	(\$35.00 per 1000)	
Larch	\$18.00	2 year trees
Thuya	\$20.00	3 year trees
Muricata	\$14.00	2 year trees
Arizonica	\$17.00	2 year trees
Benthami	\$17.00	2 year trees
Macrocarpa	\$17.00	2 year trees
Lombardy Poplars	\$18.00	
Poplars (others)	\$22.00	
Synonous (Douglas Fir)	\$17.00	3 year trees
(Oregon)	\$17.00	3 year trees
Cedrus Deodara	\$25.00	3 year trees
Eucalyptus	\$50.00	(in tubes)

17. WEED AND PEST CONTROL

(a) Weed Sprays (1977/78) approx. prices only.

Common Name of Active Ingredients	Proprietary Brand Names	%A.I.	Retail Prices per Litre	Per kg
Salts of 2,4-D 2,4-D (amine salt)	Shell Weedkiller D	40	\$4.03	
	Weedar 77	40	\$3.05	
	I.C.I. Amine 2, 4-D	45	\$3.31	
Volatile Esters of 2,4-D 2, 4-D (butyl ester)	I.C.I. Aerocon	72	\$4.21	
	Shell Weedkiller E-vol.	36	\$3.26	
	Weedone 57 Vol.	36	\$2.93	
2,4-D (ethyl ester)	Ethone 2, 4-D	36	\$2.69	
Low Volatile Esters of 2, 4-D	Ethone L.V.	36	\$3.40	
	I.C.I. 2, 4-DB	40	\$3.60	
	Shell Weedkiller L.4	40	\$4.21	
	Weedar Butyrac 2,4-DB	40	\$3.91	
	I.C.I. Dicamba	20	\$6.81	
	Shell Dicamba 2	20	\$5.05	

2,2-DPA	Dowpon	74		\$3.68
	Icipon	74		\$4.80
Dinoseb	Shell DNBP	15.9	\$2.99	
	ICI DNBP	15.9	\$2.11	
	Sinox P.E.	36	\$2.87	
MCPA	Agroxone	40	\$3.11	
	Shell Weedkiller M	37.5	\$3.38	
	Weedar MCPA	37.5	\$3.06	
MCPB	Bexone MCPB	40	\$3.66	
	Shell Weedkiller P4	40	\$3.84	
	Weedar Butyrac MCPB	40	\$3.61	
Sodium Chlorate	Atlacide			\$1.99
Volatile Esters of				
2, 4, 5-T				
2, 4, 5-T (butylester)	Butoxone Vol.	36	\$4.30	
	Shell 2, 4, 5-T extra	36	\$4.85	
	Weedone 2, 4, 5-T Vol.	36	\$4.59	
	Shell Weedkiller B plus	72	\$9.23	

Common Name of Active Ingredients	Proprietary Brand Names	%A.I.	Retail Prices per Litre	Per kg
	Weedone High Ester T	72	\$8.16	
Low Volatile Esters of				
2,4, 5-T				
2, 4, 5-T (octylester)	Butoxone L.V.	36	\$4.25	
Paraquat	Gramoxone	20	\$6.96	
Shell Paraquat	20%		\$6.95	
2, 4, 6 - tri-chlorophenyl 4 nitrophenyl 1 ether	Fodderkleen	20	\$3.87	
0.125 picloram				

Pesticides (approximate prices only)

For full information regarding common names, proprietary names %A.I. etc., refer to the Handbook of Agricultural Chemicals, a copy of which can be obtained from the Agricultural Chemicals Board, P.O. Box 1500, Wellington.

Common Name of Active Ingredients	Proprietary Brand Names	%A.I.	Retail Prices Per kg	Per Litre
Diazinon	Dyzol 50W	50	\$10.38	
Diazinon	Dyzol 80EC	80		\$11.23
Diazinon	Dyzol 20G	20	\$3.41	
Dichlorvos	Vapona Concentrate	108	\$7.83 per 450ml bottle	
Fenitrothion	Gramothion 60	60		\$7.92
Malathion	Malathion 50	50		\$3.38
Phorate	Thimet 20G	20	\$3.27	
Trichlorfon	Shell Trichlorfon	60		\$3.95
Lindane	Shell Lindane Pellets	20	\$2.85	
Prophos	Mocap 20G	20	\$2.64	
Bromophos	Nexion 40 EC	40		\$9.41

c) Aerial Application – spraying.

	Application Rates	Helicopter	Fixed Wing
Thistles	0 – 28 l/ha	\$4.62	\$4.62
Potatoes	29 – 56 l/ha	\$8.14	\$8.14
Crops	57 – 112 l/ha	\$13.59	\$12.23
Lupins	113 – 169 l/ha	\$21.75	\$20.85
Ragwort	170 – 225 l/ha	\$27.31	\$25.82
Willows	226 – 280 l/ha	\$32.89	\$27.85
Preburn	281 – 237 l/ha	\$38.87	\$35.75
Gorse			
Broom			
Blackberry	238 – 450 l/ha	\$48.65	\$44.18
Heath			
Tuty	451 – 560 l/ha	\$54.36	\$51.11
Tutsen			
	Minimum charge	\$250.00	\$203.00

Crop Spraying and Liquid Fertilizer

Helicopter and Fixed Wing

\$12.85 per ha /112l application rate for first 20 ha and every additional hectare over that at \$11.12 per ha.

Miscellaneous Aerial Work

Productive Flying	\$211 / hour
Positioning	\$106 / hour

Helicopters	Spraying flight charge	\$250/flight hour
	Flight charge – fencing etc.	\$195/flight hour

(d) Ground application (materials extra) (1/1/78)

Gun Spraying:

One man plus fully equipped truck \$15.00 per hour, varying in scale downwards. Tanker Unit \$2.50 per hour.

Boom Spraying:

Weeds and Crops \$6.25 per ha

18. REPAIRS AND MAINTENANCE

The best way to estimate the likely expenditure on repair and maintenance for all plant, buildings, fences, sheep and cattle yards, tracks and culverts is: (1) the close scrutiny of the farm accounts and (2) questioning the farmer directly, on likely expenditure programme.

If the information is not available through such sources, the following rates may be used as an approximate guide. It should be borne in mind that expenditure on repairs and maintenance is strongly dependent upon the income for that particular year.

Dwellings	2½ – 5%	) depending upon the age of the building
Farm buildings	2½ – 5%	
Piggeries	5 – 10%	
Water supply	up to 5%	depending on water type
Implements and plant	7½ – 15%	depending upon use
Roads, tracks and culverts	5 – 10%	depending on locality
Yards and dip	2½ – 5%	

19. MOTOR VEHICLE – FUEL AND MILEAGE TAXES

(a) Motor Spirits Duty (Petrol Tax)

Motor spirits are now taxed as follows:

- (i) A motor spirits duty of 5 cents per litre is paid to the National Roads Board.
- (ii) A motor spirits tax of 4.7 cents per litre is paid into the Consolidated Revenue Account.
- (iii) A local authority petrol tax of 0.68 cents per litre and an equivalent tax on diesel, which are not rebated for motor vehicles under any circumstances.

(b) Petrol used in Class A motor vehicles

Class A vehicles are those which are used on a public highway only in connection with their inspection, servicing, or repair, or for a driver's licence test. A refund of 9.7 cents per litre is available.

(c) Petrol used in Class B motor vehicles

Class B covers farm vehicles and mobile machinery. These vehicles may be used on public highways only to a limited extent, in connection with the owner's business as a farmer. Their public-highway running is limited to travel between parts of their owner's farm, or farms which he also owns or manages; to carting milk, cream, or whey to or from a dairy factory (no distance limit) or dogs to or from an hydatids-control centre (no distance limit); or to travelling anywhere else (to a railway siding, for example) in connection with their owner's agricultural operations (no distance limit if unladen; a 21-km 'round-trip' limit if laden). For the fuel used in such vehicles, a refund of 9.7 cents per litre may be claimed.

(d) Petrol used in Class C motor vehicles

Class C vehicles are mostly those designed and used for aerial topdressing activities. A refund of 8.6 cents per litre is available.

(e) Petrol used in unlicensed motor vehicles, stationary engines, and machinery such as chain saws

Provided that these vehicles, engines, and pieces of machinery are used solely for commercial purposes (that is, in connection with the owner's own agricultural operations), a refund of 9.7 cents per litre is available.

(f) Petrol used in a commercial vessel

Farmers in some remote areas use boats to transport their produce, stock, and so on. Fuel used in such operations is rebateable, at the rate of 9.7 cents per litre.

(g) Mileage Tax

Mileage Tax is the equivalent of petrol tax for those vehicles which are not wholly powered by petrol. Where farmers are concerned, this will generally relate to diesel vehicles – trucks and tractors.

(i) Class A motor vehicles (as described above)

Complete exemption from mileage tax.

(ii) Class B motor vehicles

Complete exemption from mileage tax.

(iii) Class C motor vehicles

Partial exemption, depending on their weight and the public-highway mileage.

(iv) Unlicensed motor vehicles

Complete exemption from mileage tax.

*Ministry of Transport and
New Zealand Post Office.*

Motor Registration and Licensing

Normally, farmers pay full registration and licensing fees for their vehicles, with the following exceptions:

Agricultural trailers; that is, trailers such as seeders, ploughs, and rotary hoes, designed exclusively for agricultural operations, are not required to be registered or licensed, if they are towed by a currently licensed vehicle.

Conventional trailers drawn by farm vehicles must be registered and licensed, but are exempt from payment of all fees, except for the accident-compensation levy, the indemnity surcharge, and the cost of the license label and (where applicable) the number plates.

*Ministry of Transport and
Zealand Post Office*

Heavy-Traffic Licensing

Heavy motor vehicles of Classes A, B, and C are exempt from heavy-traffic licensing. Farmers' trucks which are fully licensed for unlimited road use may be operated under special 'farmer's truck' heavy-traffic licenses. Up to a laden weight of 6 tonnes, the quarterly license fee is about one-half the standard rate; over 6 tonnes, there is a constant concession of \$11.34 per quarter.

*Ministry of Transport and
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Transport Licensing

Generally, a farmer may carry his own goods in his own vehicle in connection with his business as a farmer, without restriction. There are, however, some limitations on this.

Five-tonne Payload

If the load exceeds 5000 kilograms, and if there is an open railway route of not less than 150 kilometres available, the farmer must have a goods-service license.

Exemptions – The following classes of goods may be carried without restriction, provided they are the farmer's own:

Livestock, lime, hay or straw, fresh meat, poultry or fresh fish, fresh fruit or vegetables.

Used, empty fruit or vegetable containers (or empty returnable pallets) on their return journey, when they have carried fresh fruit or vegetables on the outward journey.

Bulk milling wheat which requires urgent transport, directly from the paddock to the nearest available dryer, immediately after harvesting.

Ministry of Transport

20. VEHICLE OR MOTOR EXPENSES

(a) Fuel, Oil and Grease

Light trucks and cars	– allow 12.0 cents per kilometre
Heavy trucks	– allow 20.0 cents per kilometre
Tractors 50 h.p.	– allow \$1.70 per hour
80 h.p.	– allow \$2.00 per hour
Crawler tractors	– allow \$2.20 per hour
Baler (P.T.O.)	– allow 50 cents per hour
Header Tractor drawn	– allow 50 cents per hour
Auto	– allow \$3.50 per 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	– allow 12 cents per kilometre
Wheel Tractors (Petrol and diesel)	– allow 50 cents per hour
Crawler tractors	– \$1.50 per hour
Mobile Plant	– 10% of value

(c) Hourly Tractor Running Costs: Pers. Comm. M. Snook (Sockburn Motors) (Costed 1975, Revised 1978).

70–80 h.p. Tractor, over 4,000 hours in 5 years

Cost new 1/1/78		\$12,064	Per Hour
Fuel:	11.25 1 per hour		\$
	17.2 cents per litre		1.94
Oil:	Engine 10.12 1 per 150 hrs		
	\$1.42 per litre		0.10
	Transmission 58.5 1		
	\$1.06 per litre		0.02
Filters:	Engine oil filters		
	14 at \$8.00		0.03
	Fuel filters		
	7 at \$8.00		0.01
	Tranmission filters		
	7 at \$8.00		0.01

Air Cleaner: \$96.00	0.02
Injector Servicing: Every 1200/1500 hrs, say 3 services, 4 injectors	0.03
Top Overhaul:	
Battery	0.02
Tyres – one pair or re-lug, say 1 tyre	0.06
Anti-Freeze 8 l at \$2.40 per litre	0.01
Grease – small drum for 4000 hours	0.01
Power assisted steering	0.01
General repairs and renewals	0.10
Depreciation ½ of 15% D.V. per year for 5 years	0.83
Total Direct Running Costs	3.22
Fixed Costs:	
Registration	0.01
Insurance	0.06
Obsolescence	0.83
Interest	1.51
Total Fixed Costs:	2.41
Total Costs:	5.63
Total Cost including labour at \$3.00 per hour	8.63

So, tractor running cost estimates 1977/78

Size	New Price	Running Cost/Hour
35–50 h.p.	\$9,117	\$2.59
70–80 h.p.	\$12,064	\$3.22
150 h.p.	\$33,138	\$1.67

(N.B.: Depreciation taken as 20% D.V.)

Hourly Header Running Costs: (Costed 1978)

103kw (140hp), 3.35–6.70m Diesel Header, over 600 hours in 3 years.

		Cost per Hour \$
Fuel:	181/hour @ 17.2c/l	3.10
Oil:	Engine change 6 changes	.10
	Transmission 3 changes	.06
Filters:	Oil 3 changes	.05
	Fuel 4 changes	.06

Air Cleaner	3 changes	.32
Grease		.09
Diesel Injector Service		.25
Battery		.12
Power Steering		.05
Hydraulic Oil & Pump		.40
General Maintenance and Repairs		3.50
Registration, Insurance		.65
	Direct running costs	8.75

(d) Registration (as at June 1977): the revised figures for 1978 are available in May and it is suggested that students add \$4–5 to these figures in the meantime.

Cars		\$39.30 per year
Trucks	– Light	\$39.55 per year
	– Heavy	\$45.55 per year
Wheel Tractors		\$18.90 per year
Trailers	– Light	\$13.10 per year
	– Heavy	\$21.10 per year
Motor Cycles over 60cc		\$25.50 per year
	under 60cc	\$10.05 per year

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

Laden Weight Tonnes	Fee (for 12 months)
2.5	\$ 5.32
5.0	\$18.00
7.5	\$42.00
10.0	\$84.64
12.0	\$117.32
15.0	\$159.32
17.0	\$187.32
20.0	\$229.32

Thereafter, add \$3.50 per ton per 3 months.

(e) Fuels

83 Octane Petrol 28.52c per litre less 8.7c per litre for agricultural use. Net price to farmers – 19.82c per litre.

96 Octane Petrol 29.42c per litre less 8.7c per litre for agricultural use. Net price to farmers – 20.72c per litre.

Diesoline 16.5c per litre

Multipurpose Oil (for Diesel and Petrol Engines)
– 58.0c per litre in 200 litre drums.

Grease (multiservice) 83.0c per kilo.

(f) Delivery of bulk fuels

Free delivery of bulk fuels

Free delivery of bulk fuels, irrespective of distance.

21. 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 degree 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.

The current range of accounting costs lie within the approximate range of \$250 – \$500.

(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 \$50.00 to \$100.00.

(c) **Telephone (1 Oct. 1977)**

Rentals (Residential)

Basic rates vary from \$20.00 per 2 months (Automayic Exchanges) to \$15.00 per 2 months (restricted attendance exchanges).

22. STANDING CHARGES

(a) **Insurances**

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 6.12.75.

(i) **Buildings per \$100 value (Fire Cover only)**

Dwellings Brick \$0.175 Wood \$0.26

Outbuildings Brick – concrete or earth floor \$0.125

Wood – concrete or earth floor \$0.280

(ii) **Plant: per \$100 value**

Fire only:

(a) **All engine functioned farm machinery \$1.12 for first \$200 and \$0.280 thereafter.**

(b) **Any other farm machinery and equipment including plant, P.T.O. balers and non engine functioned implements anywhere in the district. Rate \$0.395.**

(c) **Manures and general farm produce whilst on the farm. Rate \$0.280.**

Comprehensive:

Harvesting: self propelled \$7.00 for first \$400 plus \$0.425 per \$100.

When mechanical damage occurs, the first \$50 is now payable by the owner. Where internal damage to harvesting equipment an additional premium of 50% of the basic premium is payable. Tractor: \$6.00 for first \$400 plus \$0.375 per \$200 thereafter. N.B. Tractor drawn and self propelled harvesters at the same rate.

Contractors pay these rates plus an additional premium, on their vehicles.

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

- (iii) Tractor Tyre Insurance – Tyres are insured for farmers at 2.750% of their value, and for contractors at 4.125%, with a minimum of \$5.00 per tractor. No claim under \$2.00 is now payable.
- (iv) Crops: per \$100 value
 - (a) Growing or cut in the field (including threshing) in any building or silo and transit risk \$0.490 (time limit up to 12 months)
 - (b) As per above but excluding whilst in any building or silo \$0.430 3 month limit of cover.
Hay: \$0.280.
- (v) Employers' Liability:
Accident Commission – All employees will be covered by a levy paid to the Inland Revenue Department.
- (vi) Personal Accident (owners' personal cover)
Details vary, but a typical cover would be as follows:
Death \$10,000. Total disablement from accident \$60 per week. Total disablement from disease \$60 per week. Premium \$96.00 per annum.
- (vii) Public Liability – to cover legal liability arising from negligence caused by employees, stock, farm vehicles or fire and explosion but excludes motor vehicles which should be registered under The Transport Act.

Cover	Premium
\$ 10,000	\$ 3.25
\$ 20,000	\$ 5.00
\$ 40,000	\$ 8.00
\$100,000	\$15.00

The premiums are based on the ownership of one property.

Sale of goods/products Indemnity

Additional premium

\$ 10,000	50 cents
\$ 20,000	60 cents
\$ 40,000	70 cents
\$100,000	75 cents

(viii) Wool

From sheep's back to wool store – \$0.15 per \$100 gross value plus earthquake \$0.004 per \$100 gross value for 60 days

(ix) Shelter belts (excluding live hedge fencing)

Rate 1.406%

Exclude personal and life insurance.

(b) 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 Land values. Water and pest destruction rates may be assessed on either per acre, Capital value or Land value basis.

For budgeting purposes ask the farmer for the total rates.

(c) Interest:

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

Flat Mortgage interest rates are	10%	–	12%
Table Mortgage interest rates are	9%	–	10½%
Bank overdraft interest rates are	9%	–	10%
Stock and Station Agents interest rates are	10%	–	12%

R.B. Fl. Interest Charges are:

All Table Mortgage

1st and Subsequent Securities

Land Purchase	7½%
Development	7½%
Refinance	8½%
Stock Purchase	7½% Security by way of

For assessment of Working Capital see section 1. With budgeting use 8% on total Working Capital.

(d) Rent – charge actual rental paid by the farmer.

Renewed Rents on Crown Renewable Leases are 4½% of Crown Rental Value, as from 1971. Rentals carry a ½% rebate for prompt payment, thus to calculate C.R.V. gross rentals must be ascertained. Short term leases rents usually assessed within the range of 6% – 8% of Capital Value.

23. BUILDINGS (New cost)

- (a) Dwellings – \$200 – \$266 per m²
- (b) Garages – \$55 – \$70 per m²
- (c) Woolsheds – \$45 – \$80 per m²
- (d) Haybarns:
Haybarns (Materials only – Add 50% for labour)

- i) Lean to 6m span, 4.3/3.7m height, 4.5m bays
Storage 525 bales per bay

	Roof only	Cost /M ²	Cost/Bale
2 bay	\$586	\$10.85	55c
4 bay	\$1000	\$9.24	48c
6 bay	\$1352	\$8.35	43c

- ii) Gable 4.2m stud, 9m span 4.5m bays
Storage 790 bales per bay

	Roof only	Cost /M ²	Cost/Bale
2 bay	\$796	\$9.82	50c
4 bay	\$1363	\$8.41	43c
6 bay	\$1865	\$7.67	38c

	Enclosed 3 sides	Cost /M ²	Cost/Bale
2 bay	\$1036	\$12.79	65c
4 bay	\$1614	\$9.97	51c
6 bay	\$2129	\$8.76	45c

- (e) Implement Sheds:

- (i) Lean to: 3.7m – 3.0m Stud (Earth Floor)

	Area m ²	Total Cost	Cost/m ²
Steel	35 – 130	\$777 – \$4440	\$22.20 – \$33.30
Wood	35 – 130	\$777 – \$3607	\$22.20 – \$27.75

- (ii) Gable 4.3m Stud

	Area m ²	Total Cost	Cost/m ²
Wood	35 – 130	\$777 – \$2775	\$25.00 – \$36.07

- (f) Sheepyards

- (i) Hardwood Posts, rails and gates (1/1/78)

Capacity	400 sheep	750 sheep	1000 sheep	1500 sheep
Cost per lineal metre of yarding	\$6.10	\$5.83	\$5.55	\$5.27

(ii) "Cyclone" Sheep Yards (Materials only)

Standard 1200 plan	\$3771		
Full 500 plan	\$3251		
Standard Sheep Yard Gates – 3m		Opening	\$39.26

(g) Cattle Yards "Cyclone" (Materials only)

Standard Cattle Gates	1.3m (4'4" high x 2.1m (7') wide		
	5 rail		\$70.00
	6 rail		\$80.00

Yard Fences 5 rail from \$90.00 per panel 6'2"

Forcing Pen Race and Drafting Gates

from \$37.54 per linear metre

Dehorning bail	\$299.46
Lifting Arm Extra	\$13.02

(h) Bulk Storage – Cost of Storage Buildings (1977) (Materials only)

(1) Storage in an Existing shed wire mesh lined with scrim.

Scrim last up to 3 years.

15.55m (circumference x 2.4m high – 34 tonnes	\$123.65
Hessian	\$38.50
Total Cost	\$162.15
– per tonne	\$4.76

(2) Single Purpose Storage ('American Line')

Corrugated Steel Silo – Permanent, weather proof, vermin proof.

Prices 1/8/76 (Including Casting and Outside Ladder).

Erection Costs on Application

Bin Diameter	Bin height (eave)	Tonnes (Capacity)			Outdoor \$
		Barley	Maize	Wheat	
3.7m	2.4m	18.5	21	22	977.00
3.7m	4.9m	36	40	43	1,302
4.6m	3.3m	39	44	47	1,234
4.6m	4.1m	48	54	58	1,408
4.6m	4.9m	57	64	69	1,571
5.5m	4.1m	70	79	84	1,798
5.5m	5.7m	96	108	116	2,299
5.5m	7.3m	122	137	147	2,879

6.4m	4.1m	97	109	117	2,426
6.4m	5.7m	133	148	149	3,053
6.4m	7.3m	168	188	202	3,722
7.3m	4.1m	129	144	154	2,850
7.3m	5.7m	175	196	210	3,612
7.3m	7.3m	221	248	266	4,510

(3) Commercial Grain Storage 90c per tonne per month.

(4) Portable Grain Silos (All Steel)

30 tonnes \$1,320 ex yard

20 tons \$1,133 ex yard

(i) Dairy Shed Costs (1977/78).

These vary widely depending on materials used and the costs of labour. Below are some examples:

(a) 10 Aside Herringbone (Highline)

Contract price; on new site; concrete block walls; factory supply.

Site preparation and tanker track	\$ 400
Building (materials and labour including pipework)	\$14,850
Plastering	\$ 350
Connect power to site	\$ 1,600
Electrician	\$ 1,800
Milking Machines	\$ 4,600
Supply and install washdown and farm recirculation pumps, backing gate drive, effluent pump	<u>\$ 3,900</u>
	\$27,900
Cost per set of cups	\$ 2,790

Performance: 1 man 50–85 cows per hour.

(b) 15 Aside Herringbone

Labour only contract price; second hand pipework, machines and meal feeders; pipework done by farmer; poured concrete walls; town supply.

Site preparation	\$ 200
Building (materials and labour)	\$15,500

Connect power to site	\$ 140
Electrician	\$ 1,200
Milking machine fitted (2nd hand)	\$ 2,200
Meal feeders (2nd hand)	\$ 1,000
Effluent pump and pipe (installed)	\$ 1,500
	<u>\$21,740</u>

Existing vat and refrigeration unit used
 Cost per set of cups \$ 1,500

Performance – 2 men 100–140 cows per hour.

An estimate (not actual costs) of rotary costs for 1977/78 are:

(c) 17 bail turnstyle

Contract price for building, new site, factory supply.

Site preparation and tanker track	\$ 500
Building – materials and labour	\$20,000
Connect power to site and electrical	\$ 3,000
Machinery – (including milking machine, automatic cup removers, water cylinders, rotary platform, effluent pump and pipelines)	<u>\$15,000</u>

\$38,500

Cost per set of cups \$ 2,265

Performance – 1 or 2 operators, 95–125 cows per hour.

(d) 28 bail turnstyle

Contract price for building, new site, factory supply.

Site preparation and tanker track	\$ 500
Building – materials and labour	\$26,500
Connect power and electrical	\$ 3,500
Machinery – (including milking machine, automatic cup removers, water cylinders, cleaning system, rotary platform, effluent pump and pipeline)	<u>\$22,500</u>

\$52,500

Cost per set of cups \$ 1,875

Performance – 2 operators, 160–200 cows per hour.

24. FARM MACHINERY

Prices as at 1.1.78. Some prices have not experienced the full effect of devaluation at this date.

Tractors

<u>Case</u> —	with cab (blower/heater and radio), power shift, quick hitch and 4 x 8 ram and hoses.			
Model	970	81.7 kw	(109 h.p.)	\$29,374
	1070	96.0 kw	(128 h.p.)	\$33,009
	1370	147.0 kw	(196 h.p.) c/w air cond.	\$49,000
	2470	159.7 kw	(213 h.p.) " " "	\$57,105
	2670	192.0 kw	(256 h.p.) " " "	\$60,025
	Air conditioning \$1,060			

<u>Ford</u> —	2 wheel drive			
Model	3600	25.0 kw	(37 h.p.)	\$ 9,117
	4600	35.3 kw	(47 h.p.)	\$10,511
	6600	58.2 kw	(78 h.p.) 8 speed	\$12,064
			16 speed	\$13,129
	7600	72.4 kw	(97 h.p.)	\$16,500
	7700	72.4 kw	(97 h.p.) Q cab & duals	\$22,724
	9700	114.7 kw	(153 h.p.) Q cab & duals	\$33,138
	Safety Frame \$170 extra on models without Q cab.			

County Tractors — 4 wheel drive

Model	4600 x 4	46.3 kw	(62 h.p.)	\$22,025
	6600 x 4	58.2 kw	(78 h.p.)	\$24,542
	7600 x 4	72.4 kw	(97 h.p.)	\$28,034
	764	58.2 kw	(78 h.p.)	\$28,171
	964	72.4 kw	(97 h.p.)	\$30,740
	1164	89.5 kw	(120 h.p.)	\$33,063
	1454	108.2 kw	(145 h.p.)	\$40,324
	County models include factory cab and duals			

David Brown — with safety frame, 2 post

Model	885N	36.0 kw	(48 h.p.)	\$ 8,011
	885	36.0 kw	(48 h.p.) Standard	\$ 8,059
	885	36.0 kw	(48 h.p.) Deluxe	\$ 9,277
	990	43.5 kw	(58 h.p.)	\$10,174

995	48.0 kw	(64 h.p.)	\$10,683
1210	54.0 kw	(72 h.p.)	\$12,076
1210 .x 4	54.0 kw	(72 h.p.)	\$16,528
1212	54.0 kw	(72 h.p.)	\$12,542
1412	68.3 kw	(91 h.p.) 4 post s/f	\$16,833

Fiat — DT = Dual traction, vig = Vigneto (for orchard work, etc.)

Model	450	33.6 kw	(45 h.p.)	\$ 7,200
	450DT	33.6 kw	(45 h.p.)	\$ 8,500
	460Vig	34.3 kw	(46 h.p.)	\$ 8,800
	460Vig DT	34.3 kw	(46 h.p.)	\$ 9,800
	540	40.3 kw	(54 h.p.)	\$ 9,000
	540DT	40.3 kw	(54 h.p.) c/w P.S.	\$11,100
	640	47.8 kw	(64 h.p.) " "	\$10,500
	640DT	47.8 kw	(64 h.p.) " "	\$12,300

Safety frame for models listed above \$140 extra.

	780	58.2 kw	(78 h.p.) c/w P.S. & S.F.	\$13,500
	780DT	58.2 kw	(78 h.p.) " " "	\$16,500
	880	65.7 kw	(88 h.p.) " " "	\$15,600
	880DT	65.7 kw	(88 h.p.) " " "	\$18,900

Sicur cab for 780 and 880 series \$ 2,200

	1000Super	82.1 kw	(110 h.p.) c/w P.S. & weights	\$19,200
	1000DT Super	82.1 kw	(110 h.p.) " " "	\$23,800

Safety frame for 1000S and 1000DTS \$176 extra.

	1300Super	111.9 kw	(150 h.p.) c/w P.S., weights & cab	\$31,000
	1300DT Super	111.9 kw	(150 h.p.) " " " "	\$35,000

International —

Model	444	33.6 kw	(45 h.p.) Delux	\$ 8,280
	454	38.8 kw	(52 h.p.) Standard T.A.	\$ 8,917 \$ 9,456
	574	50.7 kw	(68 h.p.) Standard T.A.	\$10,456 \$10,922
	674	58.2 kw	(78 h.p.)	\$12,029
	886	73.9 kw	(99 h.p.)	\$28,580
	1086	109.7 kw	(147 h.p.)	\$36,053

John Deere (German) –

Model	1130	39.8 kw	(53 h.p.) Standard	\$ 9,987
	1130	39.8 kw	(53 h.p.) Delux	\$10,637
	1130	39.8 kw	(53 h.p.) MFWD	\$13,997
	1630	48.8 kw	(65 h.p.) Delux	\$11,648
	1630	48.8 kw	(65 h.p.) MFWD	\$14,936
	2030	53.3 kw	(71 h.p.) Standard	\$11,857
	2030	53.3 kw	(71 h.p.) Delux	\$12,631
	2030	53.3 kw	(71 h.p.) MFWD	\$15,716
	2130	59.3 kw	(79 h.p.) Delux	\$13,596
	2130	59.3 kw	(79 h.p.) HFWD	\$18,471
	3130	72.8 kw	(97 h.p.) Delux	\$17,974
	3130	72.8 kw	(97 h.p.) HFWD	\$22,576

Optional Extras:

Selective Control	\$215
Base Weights	\$ 70
Suitcase Weights	\$ 30
Safety Frames (1130–2130)	\$168
Safety Frames 3130	\$258
Double Acting Cylinders	\$198
Quick Tach Couplers	\$194

John Deere (U.S.A. –

Model	4030	75.0 kw	(100 h.p.) Delux	\$25,436
	4230	93.8 kw	(125 h.p.) Delux	\$29,800
	4430	114.0 kw	(152 h.p.) Delux	\$32,819
	4630	131.3 kw	(175 h.p.) Delux	\$40,806
	8430	161.3 kw	(215 h.p.) Rivot Steer	P.O.A.
	8630	206.3 kw	(275 h.p.) Rivot Steer	P.O.A.

Soundguard cab with heater and air conditioning standard equipment inclusive in the above USA prices.

Optional Extras:

18.4 x 34 dual rear wheels	\$ 1,560
Selective control valve	\$ 215
Base Weights	94
Suitcase Weights	36
Power from wheel drive	\$ 5,600

Leyland –

Model	154	18.7 kw	(25 h.p.)	\$ 5,414
	245	35.0 kw	(47 h.p.)	\$ 8,314
	262	46.3 kw	(62 h.p.)	\$ 9,287
	272	53.7 kw	(72 h.p.)	\$ 9,989
Safety frame and Cab – \$\$1,460 extra on above models.				
	285	63.4 kw	(85 h.p.)	\$15,789
Safety cab standard				
	2100	74.6 kw	(100 h.p.)	\$16,586

Massey Ferguson –

P.S. = Power Steering, M.P.T. = Multi Power Transmission, 4 W.D. = 4 Wheel Drive.

Model	135	33.6 kw	(45 h.p.) P.S.	\$ 9,080
			M.P.T.	\$ 9,551
	165	45.5 kw	(61 h.p.) P.S.	\$10,511
			M.P.T. & P.S.	\$11,079
	174	51.5 kw	(69 h.p.) 4 W.D.	\$13,777
	185	55.9 kw	(75 h.p.) P.S.	\$12,064
	188	55.9 kw	(75 h.p.) M.P.T. & P.S.	\$12,685
Add \$187 for Safety Frame to above models.				
	295	67.0 kw	(90 h.p.) Without cab	\$16,717
	595	67.0 kw	(90 h.p.) M.P.T., c/w cab	\$20,289
	1135	90.0 kw	(120 h.p.) M.P.T.	\$31,881
	1155	111.9 kw	(155 h.p.) M.P.T.	\$35,625
	1200		M.P.T., 4 W.D.	
			Pivot Steer	\$32,983
	1505	131.0 kw	(175 h.p.) Articulated 4 W.D.	\$45,403
	1805	157.0 kw	(210 h.p.) Articulated 4 W.D.	\$56,759
Above models all complete with cab, air conditioning and radio.				

Zetor –

Model	4712	35.0 kw	(47 h.p.)	\$ 7,172
	5711	42.2 kw	(57 h.p.) 2 W.D.	\$ 8,357
	5745	42.5 kw	(57 h.p.) 4 W.D.	\$ 9,742
	6711	50.0 kw	(67 h.p.) 2 W.D.	\$ 9,152

6745	50.0 kw	(67 h.p.) 4 W.D.	\$11,550
8011	59.7 kw	(80 h.p.) 2 W.D.	\$11,998
8045	59.7 kw	(80 h.p.) 4 W.D.	\$16,493
12011	89.6 kw	(120 h.p.) 2 W.D.	\$19,692
12045	89.6 kw	(120 h.p.) 4 W.D.	\$25,016
Safety Frames –		2 Poster	\$ 185
		4 Poster	\$ 485

Crawlers

Fiat –

Model	605c	44.8 kw	(60 h.p.) 3pt linkage & blade	\$18,000
	805c	59.7 kw	(80 h.p.) 3 pt linkage	\$23,500
			3pt linkage & blade	\$26,700

International –

Model	500E	32.8 kw	(44 h.p.) Standard	\$21,796
			With blade	\$26,113
	T.D.8.B.	46.6 kw	(62 h.p.) “B” Series	\$32,368

Massey Ferguson –

Model	154c	33.6 kw	(45 h.p.) 3pt linkage	\$11,744
	174c	46.3 kw	(62 h.p.) 3pt linkage	\$16,510

Combines

Claas Dominator –

	105	5.2m	(17’)	Hydrostatic and grain monitor	\$79,500
	85	4.6m	(15’)	Hydrostatic	\$69,800
<u>Mercator</u> –	75	4.2m	(14’)		\$46,928
	50	3.6m	(12’)		\$39,650

Clayson –

(New Holland)

	1530	4.0m	(13’)		\$42,800
	1545	4.6m	(15’)		\$53,800
	1540S	4.6m	(15’)	Hydrostatic and grain monitor	\$53,500

1550	5.2m	(17')	” ” ” ”	\$67,000
1550S	5,2m	(17')	4 row corn head	\$72,000

International – D = Diesel

Model	321	56.7 kw	(76 h.p.)	
		3.0m	(10')	\$34,417
		3.6m	(12')	\$35,313
	431	78.3 kw	(105 h.p.)	
		3.6m	(12')	\$39,084
	531	78.3 kw	(105 h.p.)	
		4.2m	(14')	\$45,691

John Deere

Model	955	3.6m	(12')	\$49,500
	955	4.2m	(14')	\$50,190
	975	4.2m	(14')	\$63,000
	6600	Basic machine		\$58,197
	7700	Basic machine		\$73,789

Massey Ferguson – A.T.H.C. = Automatic table height control.

Model	520	3.7m	(12')	A.T.H.C.	\$44,487
		4.2m	(14')	A.T.H.C.	\$45,043
	525	3.7m	(12')	A.T.H.C.	\$46,072
		4.2m	(14')	A.T.H.C.	\$46,628
	750	4.2m	(14')	Hydrostatic	\$68,602
	760	5.5m	(16')	Hydrostatic	\$71,071

Forage Harvesters

John Deere

Model	15A	Double chop (5')		\$ 4,844
	16A	Double chop (6')		\$ 5,094
	35	Fine chop (5'6") Pickup		\$ 9,779
		Maize head, 2 row		\$11,120

Massey Ferguson

Model	260	1.8m	(6')	Hay pickup	\$ 8,343
		Maize unit		\$ 2,325	

New Holland

Model	339	1.52m	(5')	Crop chopper, double chop	\$ 4,930
	718	Base unit		\$7,760	
		Window pickup		\$2,250	
		Sickle bar		\$3,100	
		2 row corn head		\$3,200	
		Base with all attachments			\$16,310
		Electric controls – \$420 extra			

Pottinger

Model	Mex II	Single row maize harvester		\$ 2,540
		Grass pickup attachment		\$ 1,530
	Mex IV	2 row maize harvester		\$ 7,950

Taarup

Model	DMH1100	Single chop	1095mm	\$ 2,684
	S1500	Single chop	1525mm	\$ 4,496
	DC1500	Double chop	1525mm	\$ 6,096
	SE2100	Fine chop	2110mm	
		Base unit		\$4,880
		4 Disc mower	1650mm	\$1,945
		5 Disc mower	2100mm	\$2,285
		2 Row maize head		\$2,545
	502	Double chop	1905mm	\$ 6,901
	602	Fine chop	2110mm	
		Base unit		\$6,970
		Pickup		\$3,023
		5 Disc mower		\$3,950
		2 Row maize head		\$3,844
	605	Fine chop	2110mm	
		Base unit		\$8,618
		Pickup		\$2,453
		5 Disc mower	2110mm	\$3,950
		6 Disc mower	2665mm	\$4,439
		2 Row maize head		\$3,815
	1350	Single chop	1345mm	\$ 3,119

Mowers

Aktiv

T.H.	Sickle bar	1.8m	(6')	\$	747
T.H.S.	Sickle bar	1.8m	(6')	\$	824

Busatis

Double knife	1.5m	(5')	\$	1,500
	1.9m	(6'3")	\$	1,560
	2.3m	(7'6")	\$	1,680
Electric Grinder			\$	300

IBL

Flailmaster H.D.	1.5m	(5')	\$	1,291
Flailmaster Junior	1.5m	(5')	\$	1,177
M60 Standard			\$	998

Kuhn

GMD 44	Multidisc Mower	1.6m	(5'3")	\$	2,290
GMD 66	Multidisc Mower	2.4m	(7'10")	\$	2,790

Massey Ferguson

60	1.5m	(5')	\$	1,281
	1.8m	(6')	\$	1,324

Munro

Dual Master Flail	1542mm	\$	1,270
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P.Z.

165	2 Drum rotary	\$	1,985
165HYD	2 Drum rotary	\$	2,275
215	4 Drum rotary	\$	2,545

Taarup

TS1650	1650mm	\$	2,297
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Vicon

CM165	4 Disc mower	1.7m (5'6")	\$ 2,218
CM240	6 Disc mower	2.4m (8')	\$ 2,998

Mower ConditionersNew Holland

477	Haybine	2.2m (7'3")	\$ 7,430
479	Haybine	2.75m (9')	\$ 9,130
495		3.7m (12')	\$11,870

Taarup

TSC2100	Mower Crimper	2100m	\$ 7,393
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Vicon

KM165	4 disc		\$ 5,752
KM240	6 disc		\$ 7,248

WindrowersHeeston

Self propelled 6400		3.7m (12')	\$18,870
Trailing PT7		2.1m (7')	\$ 5,945
PT10		2.8m (9'3")	\$ 6,495

International

375	Diesel with hay conditioner	3.0m (10')	\$22,940
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Massey Ferguson

54	P.T.O.	2.9m (9'6")	\$ 6,364
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New Holland

912	Hydrostatic drive and hay conditioner	3.7m (12') cab	\$36,600
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Hay ConditionersGallignani

Mounted 3pt linkage	\$ 750
Trailed	\$ 2,130

P.Z.

Conditioner	\$ 1,070
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Hay Rakes

<u>Bamfords</u>	R2 Rake		\$ 1,638
	RG2 Rake		\$ 1,638
	R2 7-Reel Rake		\$ 1,746
	RG2 7-Reel Rake		\$ 1,746
<u>Fahr</u>	KH40 Centipede		\$ 1,784
	KH60 Centipede		\$ 3,125
<u>Kuhn</u>	GF 452 Gyrotedder		\$ 2,042
	GA 280 Gyrorake		\$ 1,290
<u>New Holland</u>	256 Rolabar 2.75m (9')		\$ 2,970
	259/260 Tandem Rake		
	5.8m (19')		\$ 4,600
<u>P.Z.</u>	Hay Bob		\$ 1,770
<u>Vicon</u>	HKX620 4 finger wheels	3pt linkage	\$ 857
	H820 5 finger wheels	3pt linkage	\$ 912
	H1020 6 finger wheels	Trailing	\$ 1,489
	H1240 8 finger wheels	Trailing	\$ 1,612

Balers (conventional)

<u>International</u>	440		\$ 6,480
<u>Massey Ferguson</u>	124		\$ 6,649
<u>New Holland</u>	370		\$ 6,980
	376		\$ 7,980
	286	16" x 18"	\$ 9,980

Big Balers (½ tonne)

<u>Hesston</u>	5800 round		\$11,990
	5700 round		\$12,500
	5400 small round (5' x 5')		\$ 8,094
	StakHand 10		\$13,250
<u>International</u>	241		\$11,360
<u>Massey Ferguson</u>	560 big round with pickup guide & bale carrier		\$10,396

<u>New Holland</u>	845	4½' x 4½' bale, Hydraulic twine wrapper, bale counter	\$ 9,480
	850	5½' x 5½' bale, electric twine wrapper, bale counter	\$11,720
<u>Howard</u>		Bigbaler complete with Gripper Kit	\$14,850

Miscellaneous Bale Handling Equipment

<u>Howard</u>	Gripper Kit	\$ 673
	Counter balance weight kit	\$ 285
<u>T.I.L.</u>	For transport and feeding of big baler 3pt linkage	\$ 775
<u>G.D.S.</u>	Bale accumulator (Aut trip)	\$ 1,200

Forage Boxes

McIntosh Bros. (Price F.O.R. Palmerston North)

Multicrop I	5.66m ³	(200ft) ³	rear unload	\$ 3,930
Deva I	6.51m ³	(230ft) ³	side & rear unload	\$ 5,050
Deva II	9m	(350ft) ³	side & rear unload, tandem axle	\$ 6,290

Mulchers (Straw Choppers)

<u>Taarup</u>	SKT 1500	1525mm	\$ 2,569
	SKT 2150	2100mm	\$ 4,373
	SKT 3000	3050mm	\$ 6,235
	SKT 2100	2100mm	\$ 3,474

Miscellaneous Grain Handling Equipment

<u>Harmans</u>	Augers		
	Basic Cost per M	Plus Motor & Mount	Plus Assembly
100mm (4")	\$28.33	\$65	\$25
150mm (6")	\$34.76	\$70	\$25

Grain Driers

Vale Centrifoil Fans (Grain Drying)

Model		H.P Consumed	Wheat Drying Capacity (tonnes)	Price in \$ with guard
15	SLP	4 3	35	\$883.00
18	SLP	5 4	50	\$909.00
21	SLP	7.9	70	\$1,160.00
21	SLP	(P.T.O.) 13 6	100	\$2,556.00
24	SLP	10.0	90	\$1,218.00
27	SLP	12.4	115	\$1,530.00
30	SLP	15.2	140	\$1,652.00

Capacities refer to bins or silos 10ft (3m) deep.

Prices f.o.r. to nearest railhead.

Hammer Mills

BM2	7.5 h.p.	\$ 1,178
	10.0 h.p.	\$ 1,225
BM3	15.0 h.p.	\$ 1,544
	25.0 h.p.	\$ 1,748
BM4	50.0 h.p.	\$ 2,710

Mixer Bells

1¼ tonne (21cwt)	\$ 2,927
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Bag Sewing Machine

<u>Fischbein</u>	\$ 680
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Ploughs

<u>Clough</u>	All Purpose 'Cropmaster' 35.5cm (14")	Semi Mounted	Mounted
	2 furrow	\$ —	\$ 782
	4 furrow	\$1,864	\$1,375
	5 furrow	\$2,255	\$1,710
	6 furrow	\$2,611	\$1,710

General Purpose 'Stylmaster'
30.5cm (12'')

2 furrow	\$ -	\$ 742
3 furrow	\$1,496	\$ 983
4 furrow	\$1,771	\$1,261
5 furrow	\$2,159	\$1,579
6 furrow	\$2,519	-

<u>Duncan</u>	530	Mounted	3 furrow	\$1,538
			4 furrow	\$1,778
	540	Semi trailed with hydraluc lift	4 furrow	\$2,768
			5 furrow	\$3,099
			6 furrow	\$3,520

Chisel Ploughs

<u>Vicon</u>	'Jumbo Buster'			
	3.0m (10')	9 tine		\$2,219
	3.0m (10')	11 tine		\$2,409
	3.7m (12')	13 tine		\$2,679

Disc Ploughs

<u>Massey Ferguson</u>				
	80-9	Disc plough 2 furrow		\$1,632
	80-9	Disc plough 3 furrow		\$2,150
		Extra furrow attachment		\$ 521

Discs

<u>Duncan</u>	Standard Centry Discs			
	2.1m (7')	24" x 20"	Plain	\$1,318
	2.4m (8')	28" x 20"	Plain	\$1,391
	2.7m (9')	32" x 20"	Plain	\$1,460
	3.0m (10')	36" x 20"	Plain	\$1,622
	800 Mounted Discs			
	2.1m (7')	24" x 20"	Plain	\$1,505
	2.4m (8')	28" x 20"	Plain	\$1,572
	2.7m (9')	32" x 20"	Plain	\$1,705

Reid and Gray

2.7m (9')	Tandem	45.7cm	
	Trailed	(18") Plain	\$1,706
3.0m (10')	Tandem		
	Trailed	(18") Plain	\$1,809

American Line

32 x 20 x 7¼	Disc Harrows		
	Plain Blades		\$3,052
36 x 20 x 7¼	Disc Harrows		
	Plain Blades		\$3,435

Cultivators

Clough (1.3.77)

Standard with bar and wheels. Deduct \$100 for without wheels

9 tine	1.8m	(6')	\$ 744
11 tine	2.3m	(7'6")	\$ 820
13 tine	2.7m	(9')	\$ 864
15 tine	3.2m	(10'6")	\$ 924
17 tine	3.7m	(12')	\$1,006
19 tine	4.1m	(13'6")	\$1,162

Heavy Duty. Deduct \$150 for without sheels

9 tine	2.0m	(6'8")	\$1,012
11 tine	2.5m	(8'4")	\$1,183
13 tine	3.1m	(10')	\$1,186
15 tine	3.1m	(10')	\$1,355
17 tine	4.1m	(13'4")	\$1,470

Duncan

630 Cultivator	11 tine		\$ 825
	13 tine		\$ 870
	15 tine		\$ 932
	17 tine		\$1,028
633 Cultivator and angle crumbler			\$1,462
634 Rota Crumbler	23 tine		\$1,016
	29 tine		\$1,072
Vibro Flex Cultivator			
	9 tine		\$1,343
	13 tine		\$1,872

Rotary Cultivators

<u>Howard</u>	AR 50	1.28m	(50")	\$2,204
	AR 60	1.52m	(60")	\$2,254
	AR 70	1.8 m	(70") Spike with crumble roller	\$3,182
	AR 80	2.03m	(80") Spike with crumble roller	\$3,250
	AR 70	1.8 m	(70")	\$2,325
	AR 80	2.03m	(80")	\$2,541
	AH 90	2.28m	(90")	\$4,468
	AH 100	2.54m	(100")	\$4,620
	AH 120	3.05m	(120")	\$5,066
	M 100	2.54m	(100")	\$8,579
	M 130	3.30m	(130")	\$9,452
	ST 160	4.10m	(160")	\$9,607
	ST 180	4.60m	(180")	\$10,046
	Howard Rota Spreader			
	SPR 100	2.54m	(100")	\$3,173
	SPR 150	3.81m	(150")	\$3,600
	SPR 250	6.35m	(250")	\$5,795
<u>Kobashi</u>	RBS 165P	1575mm	(63")	\$1,807
	RBS 1700	1727mm	(69")	\$1,588
	RBS 1800P	1778mm	(71")	\$1,915
	RBS 2000	1981mm	(79")	\$1,944

Harrows

<u>Duncan</u>	Zig Zag Harrows –			
		3 leaf bar		\$ 91
		4 leaf bar		\$ 101
		5 leaf bar		\$ 120
		each leaf without bar		\$ 84
	Self-clearing Harrows –			
		3 leaf bar		\$ 105
		4 leaf bar		\$ 124
		5 leaf bar		\$ 147
		each leaf without bar		\$ 82

Drill covering Harrows –		
3 leaf bar and sliders		\$ 159
4 leaf bar and sliders		\$ 202
5 leaf bar and sliders		\$ 263
each leaf without bar		\$ 38

Power Harrows

Lely Roterra – P.T.O. Drive

200	2m		\$ 3,380
250	2.5m		\$ 3,790
300	3m		\$ 4,210
350S	3.5m		\$ 6,700
400	4m	1000 r.p.m. only	\$ 8,200
500	5m		\$12,950
600	6m		\$14,500

Rollers Cambridge

<u>Duncan</u>	300	Field Roller	
	2.4m (8') x 66cm (26")		\$ 1,010
	2.7m (9') x 66cm (26")		\$ 1,075
	3.0m (10') x 66cm (26")		\$ 1,161

Drills

<u>Connor-shea</u>	2.1m (7')	Trailed Disc	\$ 2,300
	2.7m (9')	Trailed Disc	\$ 3,330
<u>Duncan</u>	700	Seedliner 16 run hoe	\$ 3,370
		18 run hoe	\$ 3,525
	701	Seedliner 18 run hoe	\$ 3,667
		20 run hoe	\$ 3,836
		18 run disc	\$ 4,218
		20 run disc	\$ 4,412
	702	Seedliner 24 run hoe	\$ 4,538
		24 run disc	\$ 5,219
	730	Multipurpose	
		16 run Mark 2	\$ 5,828

Precision Drills

<u>Nodet Gougis</u>		4 row	\$ 4,852
<u>Stanhay</u>	Handpush	Single row	\$ 286
<u>Stanhay</u>	(Price F.O.R.) S870 MLW	Drill 3 row	\$ 1,867
		Drill 4 row	\$ 2,197
		Drill 5 row	\$ 2,527
		Drill 6 row	\$ 2,829
	Jumbo Maize Drill	4 row	\$ 7,008

Planters

<u>John Deere</u>	J 7000	4 row	\$14,000 approx.
		6 row	\$18,000 approx.

Top Dressers

<u>Puffin Top Dresser (Trailed)</u>	30 cwt		\$ 1,190
P 400	10 cwt	3pt link 24' spread	\$ 566
PS 400S	10 cwt	3pt link 45' spread	\$ 617
PS 1001	30 cwt	Trailing 45' spread	\$ 1,380

Farm Bikes

<u>Yamaha</u>		Retail	Sales Tax Content
AG 100		\$1,099	\$ 252
AG 175		\$1,346	\$ 310.80
DT 100		\$ 949	\$ 215
DT 125		\$1,327	\$ 313.20
DT 175		\$1,454	\$ 344

Farm Vehicles

Landrover

Series	III Petrol –		
	88”	Soft top	\$ 8,994
		Truck cab	\$ 9,123
		Cab and chassis	\$ 8,691
	109”	Truck cab	\$ 9,579
		Cab and chassis	\$ 9,375

	Diesel –				
	88”	Truck cab			\$ 9,638
	109”	Chassis and cab			\$ 9,778
		Range Rover			\$20–23,000
<u>Toyota</u>		Land Cruiser			
		Cab and chassis			\$11,417
		Short wheel base			
		Hard top			\$11,300
		Short wheel base			
<u>Datsun</u>	1500	Cab and chassis			\$ 6,000
	Caball	Cab and chassis			\$ 8,995
Chainsaws					Retail Price
<u>Danarm</u>	36	36cc	30.5cm	(12”)	\$237.49
		Carbra Hedgetrimmer attachment for model 36			\$112.00
	55	55cc	40.6cm	(16”)	\$348.92
	71	71cc	53.3cm	(21”)	\$328.00
		125cc	60.9cm	(24”)	\$270.00
		125cc	71.1cm	(28”)	\$275.00
Loaders – complete with rams, dual bank controls and bucket					
Air		Airwork			\$1,925
		Jones			\$1,895
		Begg and Allen	Mk 3B		\$1,885
Miscellaneous					
Post Hole Digger			305mm (12”) Auger		\$ 782
Multipurpose Blade			1.8m (6’) Standard		\$ 415
Subsoiler – Massey Ferguson			35–9 H.D.		\$ 247
			Pipe laying attachment		\$ 44
Trucks					
<u>Leyland</u>	Boxer	1000	5 ton		\$16,923
	Boxer	1300	13 ton		\$20,973
	Mastiff	1600	16 ton		\$32,501

Spray Equipment

Pumps	S 1B P.T.O. Gear Pump 26 l/min.	\$137.00
	S 3 AS MkII P.T.O. Diaphragm Pump 28–34 l/min.	\$236.13
	S 3 D. Hardi 1300 P.T.O. Diaphragm Pump 68–76 l/min.	\$331.75
	S 3 G. Bertolini 110S P.T.O. Diaphragm Pump 110 l/min.	\$710.00

Spray Booms

9 nozzle	3.2m	\$ 45.26
15 nozzle	5.5m	\$120.00
	Plus nozzles complete	\$2.56
Spray hose plastic 19mm	(60m coils) per metre	\$.82
Pressure controls units		\$ 52.00
Pressure Gauges		\$ 7.98
Spray Guns	S 13A	\$ 26.88
	S 13C	\$ 46.29

25. FENCING

Table of approximate weights and lengths.

No. or Gauge of Wire	Length of 25kg	\$ per 25kg
7	200m	\$14.68
8	254m	\$14.68
9	322m	\$14.72
10	408m	\$14.73
12	649m	\$14.85
12½ high tensile	728m	\$15.70
14	1014m	\$15.00
12½ gauge barb 7.6cm apart	200m (220yds 10 chains)	\$22.84
12½ gauge barb 15.3cm apart	240m (264yds 12 chains)	\$22.84
Wire – Lacing 12, 14 & 16 gauge		\$ per coil
5 kg Coils (11 lb)		6.07
10 kg Coils (22 lb)		12.12

Standards – Flat Wrought Iron

1.4m	(4'6" x 1¼" x 5/16")	1.78
1.5m	(5' x 1¼" x 5/16")	2.00

Waratahs

1.4m	(4'6")	1.80
1.5m	(5')	1.87
1.7m	(5'6")	1.98
1.8m	(6')	2.08

Posts – Concrete Intermediates

1.8m	(6')	3.10
1.7m	(5'6") Paling Posts	3.60
2.7m	(9') Paling Posts	4.80

Posts – Concrete Strainers

2.1 m x 15 cm x 15 cm	(7' x 6" x 6")	9.00
2.1 m x 18 cm x 18 cm	(7' x 7" x 7")	10.00
2.4 m x 20 cm x 20 cm	(8' x 8" x 8")	10.50

Posts – Tanalised Intermediates

(a) Natural Round

1.8 m x 10 cm	(6' x 4')	Minimum top	2.17
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(b) ½ Round

1.8 m x 15 cm	(6' x 6--6")	face	2.31
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Posts – Tanalised Strainers

2.1 m x 15 cm	(7' x 6")	6.55
2.1 m x 18 cm	(7' x 7")	7.43
2.4 m x 15 cm	(8' x 6")	7.54
2.4 m x 18 cm	(8' x 7")	8.53
2.4 m x 20 cm	(8' x 8")	10.45

Pointing

Strainers 30 cents extra

Posts

Stays

(a) Concrete	(9')	4.80
(b) Tanalized 2.7m x 8 cm	(9' x 3")	3.03

Stay Blocks

(a) Concrete		1.50
(b) Tanalized 60cm	85-90 cents each	

Staples

Sliced Point Staples

Per 25kg Case

40 mm x 4.00 mm	22.46
30 mm x 4.00 mm	22.46
30 mm or 25 mm x 3.15 mm	23.50
27 mm x 2.80 mm	23.89
25 mm x 2.50 mm	24.28
19 mm or 15 mm x 2.00 mm	25.21

Barbed Staples

50 mm x 4.00 mm	24.32
40 mm x 4.00 mm	24.32
30 mm x 4.00 mm	24.32
30 mm x 3.15 mm	25.25

Concrete Post Staples (for single or double hole posts)

25 kg bags	\$22.55
5 kg bags	\$ 4.69

Battens – Tanalized

5 cm x 4 cm x 1 m	(2" x 1½" x 3'4")	47.30/100
5 cm x 4 cm x 1.2 m	(2" x 1½" x 3'10")	55.55/100

Gates – Cyclone & Hurricane	Economy Gate	Cyclone Special
3.7m (12')	35.29 each	49.61 each
4.3m (14')	38.11 each	60.48 each

Boundary Fences – Cyclone

(a) Tightlock Boundary	Nominal	Stays	Per 20 metres
Medium Tensile Superweight			
Tight 8 750mm (30")	8 line	300mm (12")	\$15.49
Tight Hog 750mm (30")	8 line	150mm (6")	\$17.32

(b) Twinlock Boundary

Medium Tensile Superweight

750mm (30'') 8 line 300mm (12'') \$15.00

(c) Tightlock Boundary

\$ Per 20 metres

High Tensile

900mm (36'') 7 line 300mm (12'') \$10.88

800mm (32'') 8 line 300mm (12'') \$12.23

750mm (30'') 8 line 300mm (12'') \$12.41

Contract Fencing Rate

(a) On Canterbury Plains

1. 2 posts to the chain, 5 standards between posts.
5 plain and 2 barbed wires: \$10.00 per chain or per
20 metres. Varies according to number of strainers and
gateways.
2. 1 post, 5 waratahs, Hurricane boundary netting, 1 barb.
\$8.50 per 20 metres (1 chain)

(b) On Hills and Downs

1. Rough Going
 - (i) 2 posts, 4 to 5 standards, 5 plain, 2 barbs: \$12.00 –
\$14.00 per chain.
 - (ii) 2 T-irons in place of posts: \$9.00 – \$10.50 per chain
or per 20 metres
2. Good Going
 - (i) 2 posts, 4 to 5 standards, 5 plain, 2 barbs: \$10.00 –
\$11.00 per chain or 20m.
 - (ii) 3 posts, Hurricane (boundary) netting, 1 barb wire, 6
plain, \$9.00 – \$11.00 per chain or per 20 metres.

Contract Post Driving

50–60 cents per post, minimum \$12.00 per hour.

Contract Post Hole digging \$0.50–60 per hole, minimum \$12.00 per hour
according to conditions.

Guide to Fencing Cost (January, 1978)

Costs in cents/metre of fence

Plain Wire

No. of Wires in Fence	1	7	8	9	10
Gauge (mm)					
No.8 (4)	5.8	40.6	46.4		
No.10 (3.15)	3.6	25.2	28.8		
No.12½(2.37)					
High Tensile	2.1	14.7	16.8	18.9	21.0

Barbed Wire (12½ gauge)

No. of Wires in Fence	1	2
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Barbs

75mm apart	11.4	22.8
150mm apart	9.5	19.0

Netting

Cyclone Medium Tensile

Superweight (tight 8)	77.47
Twinlock Boundary (7)	75.01
High Tensile Boundary (8)	61.16

Posts

No. of Post/20 Metres	3	4	5	6
Pine 100mm round	32.5	43.4	54.3	65.1
Pine 150-175mm ½ round	34.7	46.2	57.8	69.3
Concrete Intermediate (1.8m)	46.5	62.0	77.5	93.0
Waratah (1.7m)	29.7	39.6	49.5	59.4

Battens

No. of Battens/20 metres	10	20	30
1m (50 x 40)	23.7	47.3	71.0

Strainers, Stay and Block (x 2)

Length of Strain	120m	160m	200m	240m
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Tanilised Pine				
2.1m x 150mm	17.0	13.1	10.4	8.7
2.4m x 150mm	19.1	14.3	11.4	9.5

Concrete

2.1m (150 x 150)	25.5	19.1	15.3	12.7
2.1m (180 x 180)	27.1	20.3	16.3	13.5

Angles (with stay)

No. of Angles/200 metres	1	2	3	4
Tanilised	3.6	7.2	10.8	14.4
Concrete	5.6	11.2	16.8	22.4

Gates (inc. Hinges, Gudgeon and Catches)

No. of Gates/600 metres	1	2	3
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Cyclone Galvanised

Standard	10'(3m)	7.3	14.6	21.9
Standard	12'(3.6m)	7.8	15.6	23.4
Stressmaster	12'(3.6m)	10.4	20.8	31.2
Stressmaster	14'(4.2m)	11.6	23.2	34.8

Staples tie down foots, etc, depending on contour allow
3.5 – 7.2 cents per metre.

Pricing types of fences then: (excluding labour)

- (a) 3 wooden posts/20 metres
3 battens between posts
9 12½ gauge wires
200 m strain.

Price per metre

Wire	18.0 cents
Posts	32.6 cents
Battens	21.3 cents
Strainers	10.4 cents
Angles	7.2 cents
Gate	15.6 cents
Staples, etc.	6.5 cents
Total Cost	\$1.12 per metre
With labour at erected is	55.0 cents per metre the price \$1.67 per metre

- (b) 4 concrete posts/20 metres
 7 8 gauge wires plus 2 barbs
 5 battens between posts

Price per metre:

Wire No. 8	40.6 cents
Barb	22.8 cents
Posts	62.0 cents
Battens	35.5 cents
Strainers	15.3 cents
Angles	11.2 cents
Gate	11.6 cents
Staples, etc.	7.2 cents
Total Cost	\$2.06
With Labour at	60.0 cents per metre the price
erected is	\$2.66 per metre

- (c) Recommended by N.Z.A.E.I.

4 wooden posts/20 metres
 10 12½ gauge H.T. wires
 2 battens between posts
 K.R.A. horizontal stay strainer assembly:
 2 stays, 3 posts, 30 metres No. 8 wire, batten and staples.

Price per metre

Wire	21.0 cents
Posts	43.4 cents
Battens	18.9 cents
Strainer assembly	14.88 cents
Angles	7.2 cents
Gate	10.4 cents
Staples, etc.	6.0 cents
Total Materials	121.75 cents per metre
With labour at	60 cents per metre the price
erected is	181.75 cents per metre.

As above any particular fence design can be costed using the tables on a price per metre basis.

26. WATER SUPPLY

Piping: (85lbs p.s.i.)

15mm	(½")	Alkalthene	Class B	\$ 19.40 per 100m
20mm	(¾")	Alkalthene	Class B	\$ 35.48 per 100m
25mm	(1")	Alkalthene	Class B	\$ 45.10 per 100m
32mm	(1¼")	Alkalthene	Class B	\$ 58.35 per 100m
40mm	(1½")	Alkalthene	Class B	\$ 70.28 per 100m
50mm	(2")	Alkalthene	Class B	\$ 94.64 per 100m

Concrete Water Troughs

1137l.	(250 gallon) round	\$60.00
910 l.	(200 gallon) round	\$52.00
455 l.	(100 gallon) round	\$34.00
318 l.	(70 gallon) long	\$30.50
273 l.	(60 gallon) long	\$28.50
182 l.	(40 gallon) round	\$27.00
182 l.	(40 gallon) long	\$27.00

Concrete Tanks

		Width	Height	Weight	Price
22750l.	(5000 gallon)	3.5m (11'6")	2.7m (8'10")	6.2T (122cwt)	\$710.00
9092 l.	(2000 gallon)	2.6m (8'4")	2.1m (6'8")	2.1 tonne (42cwt)	\$450.00
4540 l.	(1000 gallon)	1.8m (6')	1.8m (6')	1.0 tonne (21cwt)	\$285.00
3637 l.	(800 gallon)	1.8m (6')	1.5m (4'8")	0.8 tonne (16cwt)	\$255.00
2728 l.	(600 gallon)	1.7m (5'6")	1.3m (4'3")	0.6 tonne (12½cwt)	\$195.00
1818 l.	(400 gallon)	1.5m (4'8")	1.3m (4'3")	0.5 tonne (9cwt)	\$170.00

Concrete Pipes (2nd Sewer Pipes)

375mm	(15")	\$13.94 per metre
450mm	(18")	\$18.32 per metre
525mm	(21")	\$22.65 per metre
600mm	(24")	\$27.76 per metre
576mm	(27")	\$34.27 per metre
750mm	(30")	\$45.90 per metre

Culvert Pipe (flush joint)

600mm	(24")	\$23.09 per metre
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27. 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 estimates for a married man's salary.

Town Milk Dairy	\$6,500 – \$7,500
Factory Supply Dairy	\$6,000 – \$7,000
Sheep and Mixed Cropping	\$5,500 – \$6,500

Generally within the range \$6,000 – \$7,000 depending on experience.

28. SUBSIDIES (For full details of subsidies available see Section 3).

Fertilizer:

From 21 July 1977 a subsidy of \$22.50 per tonne is payable on locally manufactured and imported fertilizers.

Deducted from price to the fertiliser manufacturer.

Fertilizer and Lime Transport Subsidies.

First 65km	4.4 cents/tonne
Next 185km	3.7 cents/tonne
over 250km	2.0 cents/tonne

Claimable by manufacturers or distributors on the distances advised by farmers or their merchants.

The supplier invoices the farmer with the net amount after subsidy.

FERTILIZER AND LIME SPREADING BOUNTY

Fertilizer:

Spread by Commercial Aerial Contractor	\$8.50 per tonne
Spread by Commercial Groundspread Contractor	\$4.00 per tonne
Spread by farmer	\$2.50 per tonne

Lime:

Spread by Commercial Operator	\$2.00 per tonne
Spread by Farmer	\$1.00 per tonne

When spread by farmer claim is made by farmer. When spread by Contractor claim is by operator and is credited to the farmer.

29. DRAINAGE

Drainage Materials		Cost per Metre
Field Tiles	100mm	\$0.89
	150mm	\$1.77

Plastic Drainage Tube:	100mm	\$1.33
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Backfill shingle (per cubic metre \$7.00 ton \$8.56)

Trenching Costs:

Trenching \$25.00 per hour

Cartage Costs are extra.

Mole Drainage

Rate of work approximately 2.5 hrs/ha

Hire of suitable tractor \$16.00 per hour

Approximate cost \$40.00 per hectare.

Well & Drilling

Cost includes drilling, pipe and screen	Cost/metre
150mm dia.	\$54.00
200mm dia.	\$76.50

30. IRRIGATION

1. Basic Materials

(i) Aluminium Pipes & Couplings (Complete, 7.5m lengths)

Diameter	Price Per Metre
51mm (2")	\$4.30
76mm (3")	\$6.05
102mm (4")	\$7.60
127mm (5")	\$13.10
153mm (6")	\$21.30

(ii) Sprinklers

From \$7.50 to \$12.50 each

(iii) Buried Mains (F.O.R.) Pipes only. Does not include trenching and laying.

Class B for standard Roll Line, Angle Tow and Hand Shift Systems. Working Pressure 600 – 690 KPa

Class C for high pressure Travelling Irrigator and Centre Pivotal Systems. Working Pressure 900 – 1030 KPa

Fibrolite (Price per metre complete)

	Class B	Class C
150mm	\$ 7.65	\$10.20
200mm	\$13.00	\$16.00

PVC (price per metre complete)

127mm (5")	\$ 5.61	\$ 8.37
153mm (6")	\$ 8.05	\$10.64
203mm (8")	\$12.89	\$16.67

(iv) Outlets (cast iron, complete with hydrant)

6"x6"x4"	\$132 each
8"x8"x4"	\$159 each

(v) Pumps

(a) Diesel

Model 4cyl Ford 53kw (71hp)
1800 l/min, 70m head \$5,457

Model 6cyl Ford 82kw (110hp)
1800 l/min, 70m head \$6,537

Model 6cyl for Winch Travelling Irrigator
1900 l/min, 100m head \$7,200

**(b) Electric; Pump sets and motor prices only available once system requirements have been calculated
Prices range from \$500 to \$3,000.**

(vi) Suction Delivery Equipment

Prices only determined once system requirements known.
Range: \$100 to \$350.

2. Systems (prices do not include Pumps or Mains)

(i) Roll Lines:

102mm Complete with wheels and couplings
\$18.34 per metre plus Power Mover at \$2,800.

(ii) Tow Lines (Angle Tow Wheels):

102mm Complete with wheels
\$11.48 per metre.

(iii) Travelling Irrigator:

Model – The Winch

Pipe Diameter	Length	Price
76mm	200m	\$10,970
90mm	200m	\$11,730
102mm	200m	\$13,080
114mm	200m	\$13,890

Trailer part of Winch Unit.

(iv) Centre Pivotal Systems:

Model – Hygromatic Fieldhopper

61m length, 15m cantilever and end gun \$16,500

Model – Hygromatic Centre Pivotal system

Multispan Units each span lengths of

43m (141')

49m (161')

55m (181')

61m (201')

at cost of \$164.00 per metre

(Erected F.O.R. Chch).

SECTION 3
ASSISTANCE AND INCENTIVES
FOR FARMERS

CONTENTS		Page
INTRODUCTION	.. .. .	122
FARM SETTLEMENT		
Farm Settlement Finance	.. .. .	122
Special Settlement Loans	.. .. .	123
Land Settlement	.. .. .	123
Farm-Ownership Accounts	.. .. .	124
Farm-Vendor Mortgage Tax Concession	.. .. .	125
Suspensory Loans for Sharemilkers	.. .. .	126
Stamp-Duty Exemption on First Farms	.. .. .	126
FARM FINANCE AND DEVELOPMENT		1
Livestock Incentive Scheme	.. .. .	126
Development Finance	.. .. .	128
Stock Loans	.. .. .	128
Special Plant Loans	.. .. .	129
Marginal Lands Board Finance	.. .. .	129
Refinancing of Farm Debts	.. .. .	130
Seasonal Finance	.. .. .	130
Farm Mortgage Guarantees	.. .. .	130
FERTILISER		
Fertiliser Price Subsidy	.. .. .	131
Bounty on Spreading of Fertiliser, Lime Serpentine and Dolomite	.. .. .	131
Transport Subsidies on Fertiliser and Lime	.. .. .	131
Subsidy on Transport of Serpentine, Dunite and Dolomite	.. .. .	132
FORESTRY		
Forestry Encouragement Grants	.. .. .	132
SOIL AND WATER		
Irrigation	.. .. .	133
Soil Conservation, Drainage and River-Control Works	.. .. .	134
Rural Water-Supply Scheme	.. .. .	134
NOXIOUS-PLANT and PEST and DISEASE CONTROL		
Cattle Tuberculosis and Brucellosis Eradication Schemes	.. .. .	135
Noxious- Plants Control Scheme	.. .. .	135
Nassella Tussock	.. .. .	136
ADVERSE-EVENTS RELIEF		
Adverse Climatic Events	.. .. .	136
Adverse Climatic-Events Emergency Services	.. .. .	137
Adverse Climatic-Events Loans	.. .. .	138
Adverse Climatic-Events Overdrafts	.. .. .	138
Adverse-Event Bonds	.. .. .	138

STABILISATION

Dairy Industry Stabilisation	..	..	..	..	..	..	..	..	139
Meat-Income Stabilisation	..	..	..	..	..	..	..	..	139
Wool-Income Stabilisation	..	..	..	..	..	..	..	..	140

ASSISTANCE AND INCENTIVES FOR FARMERS

1. INTRODUCTION

This section contains direct extracts from the M.A.F. Information Services Booklet "Assistance and Incentives for Farmers"

Whilst this section sets out briefly those measures of direct benefit to farmers it makes no attempt to include the wider range of Government Support for the primary industry, such as advisory services, research and grants to various bodies and organisations.

FARM SETTLEMENT

(a) Farm Settlement Finance

Preference for finance for farm settlement is given to:

- (i) applicants such as sharemilkers, farm employees, and farmers' sons who are purchasing a first farm; and
- (ii) farmers who are purchasing additional land to make an existing unit economic.

Other factors considered are the applicant's qualifications and experience in the type of farming he proposes, personal contributions (cash, stock, or land), the price being paid, other borrowing, and whether farm earnings will cover commitments such as loan charges, farm expenses, and maintenance, and provide a reasonable standard of living for the applicant and his family.

Though most loans are granted to purchase self-contained viable units, some are granted as a stepping stone to farm ownership, and to help retain competent workers in the industry. Experienced bona fide farm workers, such as shearers, and fencers, with a proven record of thrift and initiative, may be granted loans to purchase suitable smaller units, provided the total loan commitments, as well as farm running and living expenses, can be met from the total income.

Rural Banking and Finance Corporation.

(b) Special Settlement Loans

The Special Settlement Loans Scheme aims to settle young farmers who would not otherwise have the opportunity of purchasing a farm, and who have demonstrated qualities of thrift, initiative, and outstanding ability to manage a farm enterprise.

Loans up to 85% of the Rural Bank's valuation of the essential land, buildings, stock and plant may be advanced. Interest is at the current farm purchase rate, presently 8½%, rebated to 7½% for the first 3 years, and repayment terms are flexibly administered to accommodate fluctuations in farm income. Applicants must have a minimum unencumbered contribution of 15% of the ingoing total, with a reasonable proportion from personal savings. Preference will be given to applicants in the 25 to 40-year age group, with their own transport and (desirably) with some academic farming qualification.

Properties are at the applicant's own choice, but must be reasonably priced, economic units, with an adequate standard of improvements. Most loans will be made for the purchase of sheep, dairying, or mixed-cropping farms, though other types of agricultural enterprises may be considered.

Rural Banking and Finance Corporation

(c) Land Settlement

The Land Settlement Board is responsible for the development and settlement of Crown Land.

Each year, Government decides, on the basis of available finance, the number of improved farms to be offered by ballot to landless farmers. To participate in a ballot, applicants must: –

- (i) be New Zealand citizens, by birth or naturalisation;
- (ii) normally be 25 or more years of age;
- (iii) have been engaged principally in farming for at least 12 months immediately prior to applying; and
- (iv) as from 1977, although the Board has some discretion, applicants as a rule must –
 - have completed 5 years' full-time farming experience and four-week courses in each of 2 years in basic husbandries and farm management; or

- have been awarded the Advanced Trade Certificate in farming; or
- have been awarded an appropriate diploma by Massey or Lincoln, and afterwards have completed 2 years' full-time farming.

Stock and plant are provided, at current prices, by the Board, on settlement.

Finance is available from the Land Settlement Board for the capital over and above the stipulated deposit or cash contribution required to take over the farm, stock, and plant. Interest payable on the current-account mortgage granted in the first instance is 7½% for the first 3 years, then 8½%. Interest rates are reviewed every three years.

Department of Lands and Survey

(d) Farm Ownership Accounts

Farm Ownership Accounts, designed to help farm workers, share-milkers, students, and others associated with farming to buy a farm, can be opened with the Post Office Savings Bank, a trustee savings bank, or some building societies.

The account is available for the purchase of a first farm, or for the purchase of stock and plant to go sharemilking or share farming.

With the written consent of the Rural Banking and Finance Corporation, an account can be opened by any New Zealand citizen who has attained the age of 15 years, and who –

- (i) being a pupil at a secondary school in New Zealand, intends to become a farmer; or
- (ii) is undertaking a course of study which will assist him to become an efficient farmer; or
- (iii) is principally engaged or employed in the farming industry or in any associated servicing industry in New Zealand; or
- (iv) has some other relevant experience or qualification which, in the opinion of the Rural Bank, will enable or assist him to become an efficient farmer.

The third of these groups may elect to save under either a grant scheme or a tax-rebate scheme.

Grant Option –

The contributor receives a tax-free grant of between 25 and 50% of his savings, depending on how long the account has been open. The minimum grant is \$15,125, on the maximum eligible savings of \$30,250. The minimum qualifying period for a grant is 5 years from the date the first \$250 is saved, if a farm is being purchased; or 3 years, if stock and plant are being purchased to go share-milking or share farming.

Tax-Rebate Option --

A contributor may deposit up to \$4,000 per annum (with a maximum of \$50,000 per account) in a Farm Ownership Account and claim a tax-rebate of 45c for each \$1 of the annual increase in savings.

Each year the depositor is entitled to a tax-rebate of 45c for every \$1 of eligible savings. There is a limit of \$1,800 (45% of \$4,500) or the depositor's tax liability, if it is less than that amount.

Interest at the rate of 3% per annum is payable on balances up to \$60,000 in both types of account.

*Rural Banking and Finance Corporation
and New Zealand Post Office.*

(e) **Farm-Vendor Mortgage Tax Concession**

The 1977 Budget contained provision for a tax concession to encourage a retiring farmer to leave a substantial investment on mortgage in the farm he is selling, and thus to assist in the settlement of a suitably qualified young farmer who is purchasing his first farm.

The retiring farmer will benefit by having 50% of the interest earned from the money left in the property exempt from income tax, provided he is prepared to reinvest at least one-half of the sale price for a minimum period of 7 years. Provision is made for the Rural Banking and Finance Corporation to be responsible for administering the scheme and for determining a farmer's eligibility under it. Further details will be issued later. The necessary legislation is to be introduced during the 1977 session, and will be effective from 1 April 1978.

Rural Banking and Finance Corporation.

(f) **Suspensory Loans for Sharemilkers**

A sharemilker buying his first dairy farm may be forced to sell a substantial part of his existing dairy herd if it exceeds the farm's carrying capacity. To overcome the heavy tax liability on this type of sale, an interest-free suspensory loan may be granted, secured by a mortgage on land. Providing the recipient remains in occupation and actively farms the property on his own account for 10 years, the loan is written off.

Rural Banking and Finance Corporation.

(g) **Stamp-Duty Exemption on First Farms**

To help encourage bona fide farmers to go into farming on their own account, provision was made in the 1977 Budget for a first-farm purchase to be exempt from stamp duty payment. Subject to the passing of the necessary legislation and the setting up of the administrative procedures, the scheme will be effective for contracts entered into from 22 July 1977. Accordingly, where it is necessary to have the documents stamped, the normal duty should be paid, but a purchaser who qualifies for a refund will be given it at a later date.

A claim for the exemption will normally be made through the purchaser's solicitor. Further information will be available after the necessary legislation has been passed.

*Rural Banking and Finance Corporation
and Inland Revenue Department.*

FARM FINANCE AND DEVELOPMENT

(a) **Livestock Incentive Scheme**

The Livestock Incentive Scheme aims to encourage farmers to achieve a permanent increase in the number of livestock carried on an existing holding. A farmer whose property has an unexploited carrying capacity, and who intends to permanently increase pastoral production, can seek a suspensory loan or a taxation incentive.

(i) **Loan Option –**

An interest-free suspensory loan of \$12 per qualifying stock unit.

(This loan will be written off if the increase is sustained for 2 years.)

(ii) Taxation Option –

A deduction from taxable income of \$24 per qualifying stock unit. (This deduction may be used, in whole or in part, in any of the 3 tax years after the increase has been sustained for 2 years.)

The scheme applies to farms carrying sheep, cattle (beef or dairy), or deer. Livestock will be converted to stock units to establish the basis for payment of a loan or for the deduction from taxable income. Allowance will be made for land devoted to cash cropping on mixed-cropping properties.

To be eligible, the farm's potential minimum carrying capacity at the end of the program must be:

Dairy –	65 cows and replacements (500 stock units)
Sheep and other livestock –	1000 stock units.

The programme must be commercially viable and offer a substantial and permanent increase in livestock numbers and production.

Applicants must have a mortgageable interest, a satisfactory lease or some other written agreement, giving them the sole use of the land to which the programme applies, for the period of the programme and for at least 2 years thereafter.

Stock Increase Programme

- (i) The programme may be for a minimum of 1 year and a maximum of 3 years. The scheme is open until 31 March 1979, and the farmer must submit his programme for approval by the Rural Bank before that date.
- (ii) The basic number of stock units will normally be calculated on stock held at 30 June 1977; but when this is less than the 30 June 1976 carrying capacity, an average of the two figures may be used by the Rural Bank to determine the basic carrying capacity of a particular property. For farmers buying properties after these dates, and in special circumstances, the Bank will take into account stock carried at 30 June in the 2 years before application, and any other relevant factors.

- (iii) Before the increase in livestock units qualifies for either incentive, the farm must achieve an increase equal to 2%, 3% or 4% of the basic livestock units, depending on the length of the programme, with a minimum increase of 50 units spread over the whole programme. This means that a 1-year programme will need to show a more than 3% increase; and a 2-year programme, a more than 3% increase; and a 3-year programme, a more than 4% increase, or more than 50 units in each case, whichever is the greater.

The amount of the suspensory loan or the tax incentive will be calculated on livestock units in excess of these basic increases.

Farm advisers and farm consultants can assist a farmer to prepare his application.

Rural Banking and Finance Corporation.

(b) Development Finance

Any reasonable need for development finance may qualify for a loan, including clearing, grassing, fencing, topdressing, housing, farm buildings, roading, planting, water supply, irrigation, and purchasing stock and essential plant.

Priority is given to applicants who actively farm their own properties, and special attention is paid to farming ability.

Rural Banking and Finance Corporation

(c) Stock Loans

- (i) Short Term: (5 to 7 years).

Sharemilkers and other farmers who do not own the land they farm may obtain loans to purchase stock and plant.

Reasonable security of tenure, or a satisfactory 50/50 sharemilking agreement (normally 3 years) is needed. Provided the applicant can meet his commitments and make a reasonable contribution from his own resources, a loan of up to 60% of the market value of stock and plant may be advanced on first security.

- (ii) Long Term: (up to 25 years).

These loans are available for –

- (a) Stock purchased or increased (through retention of stock that

would normally be sold) in association with development or the purchase of additional land.

- (b) Purchase of stock for diversification, where the new stock is more costly per unit or a change is being made from dry stock to breeding stock.

Loan limits and security are flexible.

Rural Banking and Finance Corporation.

(d) **Special Plant Loans**

To foster progressive farming methods and new techniques, assistance is given to soundly based farmers and agricultural contractors to introduce modern plant and machinery. The aim is to demonstrate and evaluate the equipment under local farming conditions. Substantial amounts may be granted on a term basis; interest rates depend on the type of proposition and the security offered.

Rural Banking and Finance Corporation

(e) **Marginal Lands Board Finance**

The Marginal Lands Board operates as a Government lender of last resort, providing finance to farmers to restore, maintain, and increase production on properties that are not economic, but are potentially so.

The only applications considered by the board are those which are unacceptable to other lenders, or where the terms on which finance is available are so demanding that the property could not service them.

Finance is available, generally, on current-account mortgage in the first instance, for development, to buy stock and chattels, to buy additional land to make a farm economic, and to refinance existing securities to enable additional development to be undertaken.

Finance and advances for development, stock, and plant, can attract a concessional interest rate of 6½% for the first 3 years and 7½% for the next 3 years, afterwards increasing to 8½%. Advances for amalgamation can attract a concessional interest rate of 7½% for 3 years, after which the rate increases to 8½%. No concessional interest rate is available on finance for refinancing. Interest rates are reviewed every 3 years.

The Board has advanced money for orchards, market gardens, and deer

farming, as well as for traditional farming ventures; it will consider any reasonable proposition aimed at increasing production from the land.

Department of Lands and Survey

(f) Refinancing of Farm Debts

When a farmer is in financial difficulty, assistance is available for refinancing his onerous short-term debts. The aim is to provide long-term financial stability for the farmer, within the limits of his earning capacity, rather than the complete repayment of the debt. First mortgages and institutional mortgages are not normally re-financed.

Priority is given to efficient, credit-worthy farmers who have severe liquidity problems which are hindering further progress or the maintenance of past development. The interest rate is 9½%.

Rural Banking and Finance Corporation

(g) Seasonal Finance

Seasonal finance on a current account basis is available for tobacco growers, pip-fruit growers, and (as the need arises) for other farmers, especially in periods of depressed farm incomes. First-time farmers and those who are carrying out substantial development programmes may also qualify for seasonal finance, if it is not readily available from other sources.

Rural Banking and Finance Corporation

(h) Farm Mortgage Guarantees

To encourage lenders to invest their funds in farm mortgages, the Rural Bank guarantees farm lenders against loss should the borrower ultimately fail to repay a loan. The Rural Bank does not itself grant the loan.

Mortgages which qualify for guarantee are those raised for any acceptable farming purpose, including purchase of land, development, working expenses, and the refinancing of current accounts or existing mortgages.

Most competent farmers are eligible, including individuals, a family or other partnership, and private companies or trusts.

Rural Banking and Finance Corporation.

FERTILISER

(a) Fertiliser Price Subsidy

From 21 July 1977, a subsidy of \$22.50 per tonne is payable on locally manufactured and imported fertilisers.

The method of payment for superphosphate is by deduction from the cost of the raw materials used in manufacture. For other imported fertilisers, the subsidy is paid at the point of first sale in New Zealand.

The ex-works or ex-store price has therefore been reduced by the equivalent of \$22.50 per tonne, and no farmer claims are involved.

Ministry of Agriculture & Fisheries

(b) Bounty on Spreading of Fertiliser, Lime, Serpentine, and Dolomite

This bounty is available at the following rates:

Fertiliser spread by a commercial aerial-spreading contractor —	\$8.50 per tonne
Fertiliser spread by a commercial ground-spreading contractor —	\$4.00 per tonne
Fertiliser spread by a farmer —	\$2.50 per tonne
Lime (including serpentine and dolomite) spread by a commercial operator —	\$2.00 per tonne
Lime (including serpentine and dolomite) spread by a farmer —	\$1.00 per tonne.

If contract-spreading is involved, the contractor invoices the farmer with the net amount after subsidy. When a farmer does the spreading, the farmer himself claims the subsidy.

Ministry of Agriculture & Fisheries

(c) Transport Subsidies on Fertiliser and Lime

A subsidy is payable on the transport of fertiliser and lime from a works, a merchant, or its port of entry to the farm gate. From 21 July 1977 the rates are:

First 65 kilometres —	4.4 cents per tonne per kilometre
-----------------------	--------------------------------------

Next 185 kilometres –	3.7 cents per tonne per kilometre
Kilometres in excess of 250 –	2.0 cents per tonne per kilometre

The supplier invoices the farmer with the net amount, after subsidy.

Ministry of Agriculture & Fisheries.

(d) Subsidy on Transport of Serpentine, Dunite, and Dolomite

A subsidy is payable on the cost of transporting serpentine, dunite, and dolomite from the point of its production to a fertiliser works.

The rate of the subsidy is:

First 30 kilometres –	4.4 cents per tonne per kilometre
Next 130 kilometres –	3.7 cents per tonne per kilometre
Kilometres in excess of 160 –	2.0 cents per tonne per kilometre.

Ministry of Agriculture & Fisheries.

FORESTRY

Forestry Encouragement Grants

Cash grants, equal to 50% of the qualifying costs of establishing and maintaining an approved woodlot, are available up to a maximum of \$450 per hectare, to persons whose qualifying costs do not exceed \$300,000 in any one financial year. The minimum area of planting eligible for a grant in any one financial year is 2 hectares.

Qualifying costs are:

- Land clearing and preparation.
- Fencing (costs of new fencing, up to \$40 per hectare).
- Trees and planting, blanking and releasing.
- Pruning and thinning.
- Fertilisers and other chemicals and their application.
- Disease and pest control (insect, fungal, and animal).

- Temporary internal roads and access tracks, including any associated culverts and bridges, up to \$40 per hectare.
- Land tax on land used for forestry.
- Rates.
- Insurance against fire.
- Interest on loans for forestry (limited by their impact on profitability).
- Professional forestry services and advice.
- Repairs and maintenance to temporary fences; to plant and equipment used for land preparation and planting, and the tending and maintenance of the tree crop; to temporary buildings and temporary roads and bridges; and to access tracks.
- Fire protection and suppression.
- Rent on land leased for forestry.
- Hired plant and equipment.
- Subscriptions to the Farm Forestry Association or the New Zealand Forest Owners' Association Inc.

New Zealand Forest Service.

SOIL AND WATER

(a) Irrigation

Assistance is given for approved community irrigation schemes. In general, there must be a minimum of four farms and 400 hectares being irrigated. A Government grant provides the finance for the headworks. There is a 1:1 subsidy for off-farm works; the farmer's share, plus ruling rates of interest, is recovered in the water charge over a 40-year period. The Government provides interim finance for the full cost of on-farm works. A suspensory loan is provided for one-third of the fixed on-farm costs. This loan is written off after 7 years, provided the farmer does not sell his farm and does meet the requirements of the development programme. The remaining two-thirds of the annual cost of on-farm work is recovered from the farmer at the end of the year. The Rural Banking and Finance Corporation may provide a loan of up to 100% for on-farm works.

In addition, Rural Banking and Finance Corporation loans up to 100%, with provision for deferral of interest, may be given for schemes that do not meet the policy criterion; for example, some spray irrigation

schemes, or a scheme covering fewer than four farms or less than 400 hectares.

*Ministry of Works and Development
and Rural Banking and Finance Corporation.*

(b) Soil Conservation, Drainage, and River-Control Works

Assistance is available on approved proposals for the protection of farm land from flooding, for community drainage schemes, and for erosion-control works. The subsidy rate varies from 1:1 to 3:1, depending on a number of factors (including the off-site or 'downstream' value of the works). Assistance is provided on condition that the farmer will contribute, as appropriate, to the maintenance of the works.

The works for which a subsidy may be available include:

- River control and flood protection.
- Community drainage schemes, including pumphouse structures and equipment
- Catchment-control schemes that involve water management, and soil-conservation works that treat a whole catchment.
- A soil-and-water conservation plan for an individual farm. This may include erosion-control fencing; the provision of alternative grazing where severely eroded country is to be retired; and various structures and planting, oversowing, and topdressing specifically to control severe erosion.

*Local Catchment Authorities and
Regional Water Boards.*

(c) Rural Water-Supply Schemes

Assistance is given for approved community rural water-supply schemes which incorporate a minimum of four farms and service at least 800 hectares. There is a 1:1 subsidy for both off-farm and on-farm works. The responsibility for promoting schemes rests with county councils.

Ministry of Works and Development.

NOXIOUS PLANT AND PEST AND DISEASE CONTROL

(a) Cattle Tuberculosis and Brucellosis Eradication Schemes

Farmers are responsible for presenting cattle for testing and for arranging the slaughter of reactors. Government contributes the cost of the testing (either by providing ministry staff or, in some circumstances, by paying the farmer's veterinarian to carry out the tests) and pays compensation for any reactors.

The compensation payable on reactors to either test is as follows:

- In addition to the carcass proceeds, 90% of the difference between an average carcass value and a standard replacement value, assessed each season for differing classes of animals over 6 weeks of age.
- Where a reactor is condemned at the works, 90% of the average carcass value, in addition to compensation.
- A seasonal bonus payment on the following classes of reactor, slaughtered within the period allowed –
 - (i) Town supply cows, at \$70 each.
 - (ii) Lactating factory-supply cows, at a varying rate (according to the month of test) on tests carried out between June and January in the North Island and between July and February in the South Island.
 - (iii) In-calf beef breeding cows and heifers, and cows with dependent calves at foot, tested between July and December, at a rate estimated as one-half of the average price of weaners for the season.
- Tb-reactor meat is not eligible for export, and a support scheme is operated to ensure that the proceeds to farmers equal the export-schedule rates applying at the date of slaughter.

Ministry of Agriculture & Fisheries.

(b) Noxious-Plants Control Scheme

The Noxious-Plants Control Scheme provides for a subsidy of 75% of the cost of the chemicals used to control specified noxious weeds.

The local administration of noxious-plants control is the responsibility of the district noxious plants authority, which is the county (or combined counties) noxious-weeds committee, with the local senior farm

advisory officer as an *ex officio* member. The administration is co-ordinated by eight regional co-ordinating committees, and the national policy is formulated by the Noxious Plants Advisory Committee.

The 75% subsidy applies to 'declared' species, but only after the particular control programme has been approved by the district authority. Claims are paid by the Ministry of Agriculture and Fisheries.

The 1977 Budget provided for an additional noxious plant to be eligible for subsidy in each region, at the discretion of the Noxious Plants Advisory Committee.

Ministry of Agriculture & Fisheries.

(c) **Nassella Tussock**

The North Canterbury and Marlborough Nassella Tussock Boards derive most of their funds from a Government subsidy, based on county contributions. The boards carry out control work on farms within their districts. (Farmers meet 50% of the cost).

A 'county scheme', administered by 16 local authorities in the South Island and 5 in the North, provides for farmers to be re-imbursed for 50% of the cost of undertaking approved nassella-tussock-control programmes themselves. This scheme also operates now in the North Canterbury and Marlborough Nassella Tussock Board's districts, as a complement to those Board's activities.

ADVERSE-EVENTS RELIEF

(a) **Adverse Climatic Events**

In emergencies such as floods and droughts, Government assistance is available to farmers in areas where adverse-events committees are formed. A committee is set up by local farm-advisory officers at the request of the effected farmers. Standard forms of relief are:

- (i) Refund of freight costs up to \$10 per tonne on stock feed carried by commercial transport.
- (ii) Refund of freight charges for livestock carried by commercial transport from the relief area for grazing elsewhere. The concession applies to the homeward journey for a maximum of 160 kilometres for droughts, and to the outward journey for floods.

- (iii) Transport subsidy on the use of farmers' own vehicles for carting stock feeds, at the rate of 6 cents per tonne per kilometre up to a maximum of \$10 per tonne, and for carting livestock, at 6 cents per tonne per kilometre. The concession is limited to the home-ward journey in the case of droughts, and to the outward journey for floods, with a maximum allowable distance of 160 kilometres.
- (iv) A subsidy of up to \$25 per hectare toward the cost of regrassing pastures destroyed by flooding. Expenditure which qualifies for reimbursement includes seed, fertiliser, insecticides, and contractors' charges.
- (v) Taxation relief is available to a farmer who is forced to sell because of an 'adverse event' such as a fire, flood, disease, or drought. Provided certain conditions are met, the excess of the sale price over the standard or 'nil' values used by the farmer is not included in his assessable income until the year in which replacement livestock is bought.

If, however, taxation relief is the only form of assistance desired, the local Federated Farmers' branch should submit a request to the district Ministry of Agriculture & Fisheries office for reference to the Commissioner of Inland Revenue. (There is no need to set up an adverse-events committee solely to recommend this assistance).

Ministry of Agriculture & Fisheries

(b) Adverse Climatic-Events Emergency Services

Helicopters, fixed-wing aircraft, and specially equipped ground machinery may be used in certain emergencies for inspection and relief work. Wherever practicable, equipment owned by commercial organisations is used; but if no suitable equipment is available, Ministry of Works resources can be employed. Farmers must agree in advance to meet half the transit cost of moving the aircraft or the equipment and the personnel to the headquarters established for the emergency operation, and also half the cost of operations on their own properties.

*Ministry of Agriculture & Fisheries and
Ministry of Defence*

(c) Adverse Climatic-Events Loans

Loans are granted to farmers in Government-designated disaster areas who suffer hardship as a result of severe climatic conditions such as droughts, hail and snowstorms, and flooding. If an early recovery appears likely, a loan is granted, regardless of the normal security margins.

The terms and conditions vary, according to the degree of hardship; both principal and interest may be deferred for 2 years. In cases of severe hardship, interest of up to \$500 a year for the first 2 years may be converted to a suspensory loan. Loans may be used for all forms of farm expenditure, including purchase of feed, cartage, sprays, living expenses, and so on.

Rural Banking and Finance Corporation.

(d) Adverse Climatic-Events Overdrafts

In exceptional cases, farmers who require funds to restore their properties or production after an emergency may be granted Government-guaranteed overdraft facilities by the Bank of New Zealand, or (by arrangement) through their own bank. Guarantees are available if the bank is satisfied that finance cannot be arranged by private negotiation, and if the application for assistance is supported by the local adverse-events committee.

Bank of New Zealand.

(e) Adverse-Events Bonds

These bonds are tax deductible and interest-bearing, and are available to farmers, farming companies, and executors. They may be cashed in times of adverse climatic occurrences, such as droughts, floods and snowstorms.

Bonds are tax deductible up to a maximum of 40% of the net farm income in any one year. There is, however, no limit to the total value of bonds which may be purchased. Bonds become assessable for taxation in the year they are redeemed.

Interest is at 3½% per annum, calculated on a daily basis, and payable on the anniversary of purchase. Interest is assessable for taxation, subject to the normal exemptions.

New Zealand Post Office.

STABILISATION

(a) Dairy Industry Stabilisation

At the beginning of each season, basic farm gate prices are set for milkfat and for SNF ('solids-not-fat'). These prices must not be more than 10% up or 5% down on the previous season's basic prices.

At the end of the season, if either or both of the Milkfat Trading Account and the SNF Trading Account indicates a surplus, the board may propose to distribute up to 50% of the surplus and to credit the balance into a Reserve Account. In the event of the board incurring a loss in milkfat and/or SNF products, it will be granted overdraft facilities at 1% by the Reserve Bank of New Zealand if the loss exceeds the accumulated reserves in the relevant account.

New Zealand Dairy Board.

(b) Meat-Income Stabilisation Scheme

A Meat Export Prices Committee establishes minimum and 'trigger' schedule prices for 'bench mark' grades of export meat – lamb, mutton, and beef – before the start of each meat year. Minimum and trigger prices for the remaining grades are set by the Meat Board in relation to these bench-mark classes.

Should market realisations prevent exporters paying the minimum price for a given class of export meat, the Meat Board will either make supplementary payments to producers, or intervene in the market itself.

Alternatively, if the schedule for any week exceeds the trigger price for a given grade, a levy of 50% of the excess amount will be deducted from producers' returns and paid into the stabilisation account of the appropriate commodity.

There are separate stabilisation accounts at the Reserve Bank of New Zealand for beef and for sheep meats. Should the funds provided by producers become exhausted, advances will be made from the Reserve Bank at 1%.

New Zealand Meat Producers Board.

(c) **Wool-Income Stabilisation Scheme**

The wool-income stabilisation scheme provides for a 3% levy on all shorn wool, and on slipe wool from sheep and lambs sold collectively or on their owner's account.

The Wool Marketing Corporation sets a table of minimum prices, and movements in the average of the table are limited to a decrease of 5% and an increase of 10% on the previous season. When the price of wool falls below the table of minimum prices supplementation payments will be made from an account funded by the levy. Should the funds collected from the growers become exhausted, advances will be made by the Reserve Bank of New Zealand, at 1%. The interest will be paid when the account is in credit.

When the average price of wool at auction exceeds a 'trigger price' set at the beginning of the season, a further levy is introduced, equivalent to 50% of the amount by which the average price at that auction exceeds the trigger price. This will be applied as a flat percentage levy on all qualifying wool, and will be paid into individual grower's income-retention accounts and released under specified conditions.

*New Zealand Wool Marketing
Corporation*

SECTION 4

INCOME TAXATION

1.	INTRODUCTION	..	..	..	..	..	..	..	..	143
2.	DETERMINING TAXABLE INCOME	..	..	..	..	..	..	..	..	143
3.	PERSONAL ASSESSMENT									
	Exempt Income	..	..	..	..	..	..	..	..	144
	Assessable Income	..	..	..	..	..	..	..	..	144
	Special Exemptions	..	..	..	..	..	..	..	..	145
	Tax Rebates	..	..	..	..	..	..	..	..	146
4.	COMPANY TAXATION	..	..	..	..	..	..	..	..	148
5.	PARTNERSHIP									
	Relatives in Partnership	..	..	..	..	..	..	..	..	148
6.	TRUST ASSESSMENT									
	Specified and Other Trusts	..	..	..	..	..	..	..	..	149
	Tax Liability	..	..	..	..	..	..	..	..	149
	Beneficiaries Income	..	..	..	..	..	..	..	..	150
7.	FARM TAXATION									
	Valuation of Livestock	..	..	..	..	..	..	..	..	151
	Farm Income	..	..	..	..	..	..	..	..	153
	Farm Expenses	..	..	..	..	..	..	..	..	154
	Depreciation	..	..	..	..	..	..	..	..	155
	Development Expenditure	..	..	..	..	..	..	..	..	158
	Income Levelling Schemes	..	..	..	..	..	..	..	..	158
8.	INCOME TAX TABLES	..	..	..	..	..	..	..	..	161

NOTES ON INCOME TAXATION

J.V. Bennett

1. INTRODUCTION

Users should appreciate that this section is not exhaustive, comprises notes and is a general outline only of the principles and methods of some aspects of the New Zealand tax system.

For reasons of brevity, certain aspects are simplified and may be misleading.

2. DETERMINING TAXABLE INCOME

The following factors are examined to determine taxable income.

1. Exempt Income – income wholly exempt from taxation.
2. Assessable Income – income of any other kind not exempted from income tax otherwise than by way of a special exemption.
3. Non-Assessable Income – income not directly taxable but which affects the rate of tax paid – applies to companies.
4. Special Exemptions – income specifically excluded from liability for income tax – applies to individuals.
5. Taxable Income – the residue from assessable income after deducting the sum of all special exemptions to which the tax payer is entitled.

All Income

– Exempt Income

Assessable Income

– Special Exemptions

TAXABLE INCOME

3. PERSONAL ASSESSMENT

3.1 Exempt Income

Includes inter alia:

1. Up to \$100 of interest from all sources, plus up to \$200 of interest received specifically from the Post Office Savings Bank, Trustee Savings Banks, Building Societies, and Private Savings Banks – a total possible exemption of up to \$300.
2. Up to \$500 in accumulated interest from National Development Bonds and/or New Zealand Savings Certificates. The interest is deemed to be received on maturity or earlier surrender of the Bonds or Certificates.
3. Any scholarship or bursary monies received in respect of a taxpayer's attendance at an educational institution.
4. Any payment received in respect of personal incapacity or sickness under a policy of insurance not being a payment calculated according to loss of earnings or profits.
5. Prizes in respect of Post Office Bonus Bonds.
6. From April 1, 1978, 50% of any interest received on any farm vendor finance bond or any farm vendor mortgage will be exempt provided the bond or mortgage meet certain criteria. Such interest will not also qualify for the exemption as outlined in (1) above.

3.2 Assessable Income

Includes inter alia:

1. Profits or gains derived from any business.
2. Salaries, wages or allowances in respect of employment or service.
3. All payments of earnings related compensation made by the Accident Compensation Commission.
4. Profits or gains derived from the sale or disposition of property if it is the business of the taxpayer to deal in such properties, or if the property was acquired for the purpose or intention of selling or otherwise disposing

of it. Here, the word property does not refer to only land, but includes all real or personal property.

5. Rents, fines, premiums and other revenues derived by the owner of land in respect of any lease, easement or licence affecting the land.
6. All royalty and know-how payments.
7. Interest, dividends, annuities and pensions, retiring allowances, etc.

3.3 Special Exemptions

1. Up to \$200 for donations to charities and/or fees paid to private schools and/or activity fees paid to secondary schools and/or donations to free kindergarten associations. Receipts must be supplied, and only donations/fees of \$2 or more qualify. This Special Exemption is replaced by a rebate for the income year commencing April 1, 1978 (see 3.4 (9)).
2. A standard deduction of \$50 or 2 per cent of assessable income, whichever is less, is available to all individual taxpayers. This is not strictly a special exemption, but is deemed to be an element of expenditure which should be deducted from Assessable Income separately rather than being included with Special Exemptions. Alternatively, actual and reasonable employment-related expenses may be deducted if supported by receipts or other suitable evidence.
3. Superannuation and Life Assurance etc. Payments
Payments made or liable to be made by a taxpayer for life, personal accident or sickness insurance premiums plus superannuation contributions are deductible as follows:—
 - (a) \$800 or the amount paid, whichever is the less, for members of employer-subsidised superannuation schemes.
 - (b) \$1000 or the amount paid, whichever is the less, for all other taxpayers.

3.4 Tax Rebates

These are deductible from the tax assessed on taxable income where they apply.

1. Personal \$155
2. Wife – \$156 reduced by \$0.30 for each complete dollar by which her personal earnings exceed \$520. The rebate therefore ceases to be deductible from the tax on the income of the husband when the income of the wife reaches \$1040. (The reverse, of course, applies for a dependant husband).
3. Housekeeper – the lesser of \$156 or \$0.40 for each dollar of ‘qualifying payments’.
4. Dependent Relatives – \$60 (does not include children for whom a family benefit is being received.)
5. Young Family Rebate:
 - (a) Applies to families which include at least one child under 5 years of age, or who will attain 5 years of age during the income year, and in respect of whom a family benefit is receivable.
 - (b) The principal income earner of such a family (or where two people earn the same income, then the one who receives the family benefit) is entitled to the rebate.
 - (c) The rebate is \$468, diminished by \$0.10 for each complete dollar of assessable income over \$7800. Example: assessable income \$8400, rebate would be $\$468 - 0.10(8400 - 7800)$ or \$408. The rebate therefore expires when the assessable income reaches \$12480.
6. Single Income Family Rebate
 - (a) Applies to families which include at least one child under 10 years of age, or who will attain 10 years of age during the income year, and in respect of whom a family benefit is receivable.
 - (b) As for 3.4 (5 (b)) above.
 - (c) The rebate is \$208 diminished by \$0.30 for each dollar by which the income of any other person who also has

care of the child exceeds \$1040. The rebate is thus extinguished when the income of say a wife exceeds \$1733.

(d) The rebate is claimable in respect of only one child.

7. Rates – an owner-occupier of a dwelling may, in the income year commencing April 1, 1978, deduct a rebate of the lesser of –

- (a) \$25, or
- (b) the rates paid.

In respect of rates paid, no more than \$25 may be deducted in respect of any one dwelling.

8. Vendor Mortgages

Where a Taxpayer derives interest income from a home vendor mortgage, a rebate of the lesser of \$0.20 per dollar of such income, or \$500 is deductible. The mortgage must comply with certain conditions (e.g. is approved by the Housing Corporation), and such interest does not also qualify as exempt as per 3.1 (1) above.

9. Donations and School Fees

In the income year commencing April 1, 1978, a rebate donations/school fees as outlined in 3.3 (1) above, of the lesser of

- (a) half of the aggregate gifts and fees, or
- (b) \$175.

10. Special Farm Ownership Savings Accounts

Where a taxpayer operates such an account a rebate of income tax in respect of any one year will be allowed of 45 cents for every complete dollar of any increase in savings. The maximum qualifying increase in savings for these purposes will be \$4000 in any one year (a rebate of \$18000) and no more than \$50,000 over a number of years may be saved in the accounts i.e. once savings have reached \$50,000, no further rebate will be available.

A similar provision operates in respect of savings in a home ownership account.

11. There are special rebate provisions relating to dividends and backpay. In the case of dividends a rebate is available as follows:
 - (a) Where taxable income (including dividends) is \$4,000 or less the rebate is –
 - (i) 10% of the taxable dividends, or
 - (ii) the tax assessed – whichever is smaller.
 - (b) Where the taxable income (including dividends) falls between \$4,000 - \$8,000 the rebate is –
 - (i) 10% of the taxable dividends, or
 - (ii) \$400, reducing 10c for every complete dollar in excess of \$4,000 – whichever is the smaller.
 - (c) Where the taxable income is in excess of \$8,000, no rebate applies.
12. There are also rebates available in respect of overtime, shift work, etc.

4. COMPANY TAXATION

For the 1978 year companies will pay a flat rate of tax of 45 per cent.

5. PARTNERSHIPS

There is no joint assessment on a partnership but each partner is separately assessed and liable for the tax payable on his total income including his share of the income of any firm in which he is a partner. **Partners are required to make a joint return of the income of the partnership setting forth the amount of that income and the respective shares of the partners.**

5.1 Relatives in Partnership

Such partnerships normally require to be evidenced by deed for taxation purposes, except in those cases where capital is a significant factor in earning, wherein the earnings of the partners must be in relation to their capital contributions. To prevent evasion of taxation, where relatives enter into partnership the Commissioner may allocate the income of the partnership for taxation purposes between the partners in such shares

as he considers reasonable, having regard to the capital and services contributed by the partners and other relevant matters. This discretionary power will not apply in the case of a bona fide contract of employment or partnership – such a contract which in general terms:

1. Is in writing or by deed
2. Is signed by parties over 20 years of age
3. Is binding on the parties for not less than three years
4. Allows each party real and effective control over his remuneration or share of profits
5. Allows for remuneration or a share of profits not of such nature as to constitute a gift either in whole or in part.

In determining whether a gift exists consideration may be taken for example, of –

1. The nature and amount of the capital contributions or the value of the services performed
2. The proportions of such contributions to remuneration or profit shares as between the partners
3. Whether the taxpayers would have entered into such a partnership arrangement with a non relative.

6. TRUST ASSESSMENT

6.1 Specified and Other Trusts

“Other Trusts” for taxation purposes are in general terms all trusts, except inter vivos trusts created on or after 19 July 1968, these being termed “Specified Trusts”. An “inter vivos” trust is one formed during the life of the settler.

6.2 Tax Liability

All the income of a trust is liable for tax in the hands of the trustees, either for trustees income or as agent for tax payable on beneficiaries income.

In the case of “beneficiaries income” (see below), the taxation liability is determined as if the beneficiary was personally deriving that income. That is, special exemptions and tax rebates may be taken into account, if known, where they apply, in determining the taxation liability.

Income not classed as beneficiaries income is “trustees income”. All such income from a trust is assessed in total in the hands of the trustees. The taxation liability on trustees income depends on whether the trust is an “other trust” or a “specified trust”.

1. **Other Trust** – a special exemption of up to \$100 is available on trustees income. The balance is taxable at the same rates as apply to individual taxpayers. There is no minimum rate of tax.
2. **Specified Trust** – no special exemption is available. The whole of trustees income is taxable at the rates applying to individual taxpayers or 35 cents per dollar, whichever is greater.

6.3 Beneficiaries Income

Trust income is classed as ‘beneficiaries income’ under the following conditions:

1. **Adult Beneficiaries**
 - (a) If the income vests in an adult beneficiary either by virtue of the trust deed or by the exercise of a trustee’s discretionary power, whether the beneficiary actually receives the income or not during the income year, or
 - (b) If a trustee is empowered or required by the terms of the trust deed to pay or apply some income for the benefit of nominated beneficiaries and the trustee does so pay or apply that income beyond his control as trustee during the year or within 6 months after the end of the income year.
2. **Infant Beneficiaries**
 - (a) **Other Trust** – if the income vests by virtue of the trust deed whether the infant actually receives that income or not, OR as for 1 (b) above
 - (b) **Specified Trust** – as for 1 (b) above so long as that income remains out of the trust or any business in which the trust is interested whilst the beneficiary remains an infant.

Any income not coming within the above is then trustees income. Tax on the income of a trust will normally be paid on a provisional basis, the return for the trust being filed by the trustees. A beneficiary with income derived other than from the trust, should file a return of all his income including his trust income, and he will be allowed a credit for the tax paid on his behalf by the trustees.

7. FARM TAXATION

Certain features of the taxation system apply specifically to agriculture because of the special place it holds within the economy. Farmers pay tax on assessable income as do other taxpayers, however, in order to encourage capital investment, increased stock numbers, etc. and in view of the highly variable nature of farm income, certain considerations apply in assessing farm income.

7.1 Valuation of Livestock

A choice in valuation is available

1. Cost, market or replacement value.
2. Standard Value – a value approximating the average market value of stock of a particular class. In practice, once a standard value has been adopted the Commissioner will not usually require the adoption of true market values each year in a continuing operation, nor will different standard values for different classes of livestock be required. (i.e. the same standard value may be applied to 2th ewes, M.A. ewes and rams if desired).

Once established, a standard value may be altered with the concurrence of the Commissioner, but in practice an increase to a value still within the market value of the livestock will not usually require prior approval.

In addition:

- (a) New farmers on new farms – may, if desired, write stock down to standard values over a period of up to three years.
- (b) Standard values are not available to livestock dealers.

- (c) Reliefs are available by allowing the spreading of resultant large incomes either forward or backward over three years in the event of a sale of livestock occasioned by death, retirement, adverse events, expiry of lease etc.
 - (d) For income tax purpose, gifts of livestock to children (who are at least 18 years of age, and who use those stock in a farming operation) may be made at a reasonable standard value, i.e. not unduly low. Note any gift duty will be assessed on the market value less the standard value of the stock however.
3. Nil Value – the valuation of stock above a basic number at nil value.
- (a) The basic number is the greater number of stock held in the past two income years prior to joining the scheme.
 - (b) At the end of each income year the taxpayer may value any or all stock above the basic number in each class at nil value.
 - (c) The scheme is only available for cattle, sheep, and pigs.
 - (d) Where stock numbers in a particular class fall below the basic number, a compensatory decrease in the other classes to be valued at nil value must be made on the basis

1 cattle	=	6 sheep
1 cattle	=	4 pigs
3 sheep	=	2 pigs
 - (e) Special provisions apply where there is a change in the basic nature of the farming operation, or where a drop below the basic number is occasioned by an adverse event.
 - (f) The scheme is available for stud stock.

Example: A sheep and cattle farmer, balancing June 30, elects to join the nil value scheme 1.7.72

	Stock on Hand		Basic No.	Stand. Value \$
	30.6.71	30.6.72		
Sheep	3,500	3,000	3,500	5
Cattle	150	200	200	50

Year ended 30.6.74

Stock on Hand:	Sheep – 4,000:	Cattle - 250
Valued as	Sheep – 3,500; at \$5	\$17,500
	500 at Nil	
	Cattle – 200 at \$50	\$10,000
	50 at Nil	

Year ended 30.6.75

Stock on Hand:	Sheep – 5,500;	Cattle - 150
Valued as:	Sheep – 3,500 at \$5	\$17,500
	plus 300 at \$5	*\$ 1,500
	1,700 at Nil	
	Cattle 150 at \$50	\$ 7,500

* The 50 head decrease in cattle numbers below basic number requires a compensatory decrease in the number of sheep to be valued at nil:

Sheep numbers	5,500
less reductions in cattle numbers	
50 cattle x 6 sheep	<u>300</u>
	5,200
less basic number of sheep	<u>3,500</u>
Number Valued at Nil Value	<u><u>1,700</u></u>

7.2 Farm Income

The assessable income of a farmer will include all wages, revenues from product sold, contracting income, etc., as expected but will also include, inter alia

1. The value of farm produce privately consumed

2. Net prize money from A & P shows
3. Rents from land let
4. Stud fees received
5. Some compensation payments received
6. Net receipts from bailed livestock

7.3 Farm Expenses

Will include inter alia

1. Legal expenses incurred in arranging finance for the purchase of, or in arranging for the lease of, income producing assets.
2. Telephones.
3. Car depreciation (D.V. – Diminishing Value)
 - (a) Half of 20% D.V. where farmer has car and truck
 - (b) Three-quarters of 20% D.V. where farmer has car only.

Car expenses are allowed in similar proportions unless evidence indicates a greater proportion.

Where the car was purchased after 1.4.77, the maximum depreciable initial cost is \$7,000.

4. Employee food and/or lodgings – where accurate records are kept the actual cost is deductible; otherwise \$2 per week per employee. Note that the value of benefits in kind provided to employees such as meals, lodgings, housing etc. must be added to the wages paid, and tax deducted accordingly.
5. Depreciation – see below
6. Maintenance costs on sheep yards, submersion dips and fencing. The outlay cost of such items will usually be claimed as development expenditure.
7. Cost of papers or magazines containing farming information.
8. Domestic power – $\frac{1}{4}$ of such cost is deductible if the dwelling is situated on the farm.

9. Wages paid to wife

(a) Payments made to a wife for cooking duties in respect to permanent employees (including adult members of the farmers family employed full time) will be allowed on the basis

(i) 1 permanent employee – \$6 per week

(ii) 2 permanent employees – \$9 per week

and thereafter an additional \$1.50 per man per week.

Note that a simple declaration that the wages are for genuine services, regular cash payments, and tax deductions in the proper manner, will be required.

This allowance is in addition to any special arrangements made in respect of seasonal or part-time employees e.g. shearers.

(b) Payments made to a wife for farm working duties must have the prior approval of the Commissioner. An application for approval must set out certain details but subsequent to approval only written confirmation that wages are still being paid on the agreed basis is required.

Approval (where required) for such payments should be obtained when action is contemplated, not after payments are made. This is especially important for Accident Compensation purposes, since retrospective approval is unacceptable.

7.4 Depreciation

1. First Year Allowances

A single first year allowance will be deductible where an asset is used in the production of assessable income as follows:

(a) New or used machinery and plant 25 per cent

(b) New Farm Buildings, Extensions
and Capital Alterations (Not
dwellings) 40 per cent

(c) Newly Acquired Employee
Accommodation 22 per cent

2. Investment Allowance

Where new farm plant or machinery (not motorcars, items costing less than \$500, or office equipment) is acquired on or after 30/7/76, an investment allowance of 40 per cent of the cost of the plant or machinery will be allowed in calculating assessable income. The investment allowance is also allowable in respect of leased plant or machinery.

3. Subsequent Depreciation Allowances

In the second and subsequent years ordinary depreciation, generally as an annual deduction, will be allowed provided adequate records are maintained. The rates scheduled below are the maximum rates of ordinary depreciation allowable for income tax purposes, although a lesser rate may be claimed if desired.

Selected Rates of Ordinary Depreciation (See also 10.5)

Asset	Structure	Per Cent	
Barns	Loafing and wintering	10	C.P.
Bridges	Wooden	2½	C.P.
	Other	2	C.P.
Buildings	Reinforced concrete	1	C.P.
	Brick, stone or concrete	2	C.P.
	Wooden	2½	C.P.
	Portable Hut	10	D.V.
Note: Special rates for silos, pig sties, etc.			
Crates	Sheep and cattle	15	D.V.
Dams and Reservoirs	Reinforced concrete	1	C.P.
	Other	maintenance	
Dips	Spray type	10	D.V.
Ensilage Pits	Concrete bunkers with sliding roof	10	D.V.
	Non-Motorised	10	D.V.
Equipment	Motorised	20	D.V.
	Feed out units for cattle	4	C.P.
Fences	Electric	10	D.V.

Freezers	For dog tucker	10	D.V.
Glasshouse	Metal frame	3	C.P.
	Wooden frame	5	C.P.
Motor Bikes		20	D.V.
Milk Sheds	Erected before 1.4.66	4	C.P.
	Other	10	C.P.
	Herringbone conversion cost	10	C.P.
	Herringbone or Rotary plant	10	D.V.
Pig Sties		10	C.P.
Radio Equipment		20	D.V.
Roofing	as for building		
Saws	Chain	50	D.V.
Silo	Erected on farm	10	D.V.
Slaughterhouse	Concrete	5	C.P.
	Timber and concrete	6	C.P.
	Timber	10	C.P.
Tractor Safety frames		100	C.P.
Trailers	- at the rate of the vehicle drawing them.		
Windmill		10	D.V.

5. Assets (other than buildings) Sold after Deduction of Depreciation Allowances

- (a) Where an asset is sold or disposed of for consideration in excess of its depreciated book value, such excess is assessable income in the year in which the asset is disposed of, except that
- (b) Where the amount of such excess on disposition exceeds \$1000 the resultant assessable income may be spread, evenly or unevenly, between the income year and any number of immediately preceding income years not exceeding three, or alternatively
- (c) The amount of such excess may be set off against the cost of any replacement asset. The initial allowance and subsequent ordinary depreciation allowances for the new plant will be claimed in respect of this reduced opening book value.

- (d) Receipts in excess of initial cost are not assessable income.
 - (e) Where an asset is sold or disposed of for consideration less than the depreciated book value, the resultant book loss is deductible from assessable income in the year of sale.
6. Buildings Sold after Deduction of Depreciation Allowances.
- (a), (d), and (e) above apply to buildings, except that
 - (a) Any ordinary depreciation recovered on sale of a building is not assessable income.
 - (b) In the case of a building owned for 10 years or more, no allowances or depreciation recovered on sale is assessable for income tax purposes.

7.5 Development Expenditure

Certain expenditures incurred during an income year which would otherwise be capitalized and depreciated may be treated as expense for income tax purposes. The deduction of this expenditure may be deferred, either in whole or in part, for up to nine years, and includes inter alia, expenditures on:

1. Eradication of animal and vegetable pests.
2. Clearing and cultivation of land in preparation for agriculture.
3. Swamp drainage.
4. The sinking of bores, and the construction of dams, stop banks, and irrigation channels.
5. Construction of roads, access tracks and topdressing landing strips
6. Construction of fences.

In addition expenditure on a fertilizer programme may be deferred, either in whole or in part, and claimed at the election of the taxpayer in the year of incurrence or over up to four succeeding years.

7.6 Income Levelling Schemes

Several schemes are available to taxpayers deriving income from agriculture, which may serve to dampen the highly

variable nature of farm incomes and subsequent taxation payments.

1. Income Equalisation Reserve Scheme.

In years when unappropriated funds exist, a taxpayer may deposit sums tax free and withdraw them at a later date to then become assessable income.

General conditions of the scheme include:

- (a) to be included in a particular income year, the deposit must be made either
 - (i) within six months from balance date, or
 - (ii) within one month from the due date for filing the return of incomewhichever is the shorter period.
- (b) the conditions for the inclusion of refunds in a particular income year are similar to (a) above
- (c) there is no maximum deposit but the minimum deposit must usually be \$200
- (d) the minimum period of deposit is one year (able to be relaxed under certain circumstances) and the maximum period five years.
- (e) a refund will not attract more tax than the deposit saved
- (f) refunds will be made on a first in - first out basis.
- (g) 3% interest will be paid on deposits held from 1/4/77

2. Adverse Event Bonds:

These, in multiples of \$5, are available for purchase from any Post Office. General conditions of the scheme include inter alia,

- (a) The purchase cost of the Bonds will be deductible from assessable income and the proceeds on redemption included in assessable income for income tax purposes.
- (b) The conditions for inclusion in any one year are as for the Income Equalisation Scheme – See 1 (a) and 1 (b) above.

- (c) The maximum deduction in respect of bond purchase allowable in any one year will be up to 40 per cent of a taxpayer's assessable income for that year.
- (d) The Bonds will earn interest at 3½ per cent per annum, payable on the anniversary of the Bond purchase. The interest will be included in assessable income each year subject to any interest exemption.
- (e) The Bonds will be redeemable only on the occurrence of an adverse event (e.g. snow, drought, flood) although exceptions may be made in the case of serious financial hardship, death, retirement etc.

3. Estimate of Income

A provisional taxpayer who thinks his current income will be less than his previous year's income may estimate his current income and pay provisional tax accordingly. A re-estimate may be made up to the time the last instalment is due.

However, a penalty is payable if this estimate is less than the previous year's income and less than 80 per cent of the actual current income, unless an unforeseeable event was the reason.

- 4. Deferred Development Expenditure – as above.
- 5. Nil Standard Value for Livestock – as above.
- 6. Livestock Incentive Scheme – refer elsewhere in Manual

8. INCOME TAX TABLES

SCALE OF RATES OF INDIVIDUAL INCOME TAX
1976/77 INCOME YEAR

TAXABLE INCOME			AMOUNT AND RATE		
On so much of the taxable income					
Exceeding	Not Exceeding				
\$ 0	\$ 2,000	– \$ 0	plus 20	% of excess over	\$ 0
2,000	2,500	– 400	21		2,000
2,500	3,000	– 505	23.5		2,500
3,000	3,500	– 622.50	26		3,000
3,500	4,000	– 752.50	28.5		3,500
4,000	4,500	– 895	31		4,000
4,500	5,000	– 1050	33.5		4,500
5,000	5,500	– 1217.50	36.5		5,000
5,500	6,000	– 1400	39.5		5,500
6,000	6,500	– 1597.50	42.5		6,000
6,500	8,000	– 1810	45.5		6,500
8,000	10,000	– 2492.50	48		8,000
10,000	12,000	– 3452.50	49		10,000
12,000	14,000	– 4432.50	50		12,000
14,000	16,000	– 5432.50	51		14,000
16,000	18,000	– 6452.50	52		16,000
18,000	20,000	– 7492.50	54		18,000
20,000	22,000	– 8572.50	57		20,000
22,000		– 9712.50	60		22,000

NOTE:

- (1) Table A does not take into account the 5 percent tax cut from February 1, 1978, announced in the mini-budget of October 28, 1977. Pay-period employees will receive the cut in the form of reduced PAYE deductions. Provisional taxpayers will have to await adjustment when they file their 1978 return. For the 1978 year the cut will mean an effective reduction in tax of 5/6 of 1 percent – or 5 percent from February 1.

TABLE B
ABBREVIATED INCOME TAX TABLE⁽¹⁾
1977/78 INCOME YEAR

Taxable Income	Tax Payable ⁽²⁾	Taxable Income	Tax Payable	Taxable Income	Tax Payable	Taxable Income	Tax Payable
\$ 250	\$ 50	\$ 5,750	\$1,499	\$11,250	\$4,065	\$16,750	\$6,843
500	100	6,000	1,598	11,500	4,188	17,000	6,973
750	150	6,250	1,704	11,750	4,310	17,250	7,103
1,000	200	6,500	1,810	12,000	4,433	17,500	7,233
1,250	250	6,750	1,924	12,250	4,558	17,750	7,363
1,500	300	7,000	2,038	12,500	4,683	18,000	7,493
1,750	350	7,250	2,151	12,750	4,808	18,250	7,628
2,000	400	7,500	2,265	13,000	4,933	18,500	7,763
2,250	453	7,750	2,379	13,250	5,058	18,750	7,898
2,500	505	8,000	2,493	13,500	5,183	19,000	8,033
2,750	564	8,250	2,613	13,750	5,308	19,250	8,168
3,000	623	8,500	2,733	14,000	5,433	19,500	8,303
3,250	688	8,750	2,853	14,250	5,560	19,750	8,438
3,500	753	9,000	2,973	14,500	5,688	20,000	8,573
3,750	824	9,250	3,093	14,750	5,815	20,250	8,715
4,000	895	9,500	3,213	15,000	5,943	20,500	8,858
4,250	973	9,750	3,333	15,250	6,070	20,750	9,000
4,500	1,050	10,000	3,453	15,500	6,198	21,000	9,143
4,750	1,134	10,250	3,575	15,750	6,325	21,250	9,285
5,000	1,218	10,500	3,698	16,000	6,453	21,500	9,428
5,250	1,309	10,750	3,820	16,250	6,583	21,750	9,570
5,500	1,400	11,000	3,943	16,500	6,713	22,000 ⁽³⁾	9,713

NOTE:

- (1) The table does not take account of the tax rate reduction outlined under Table A.
- (2) The tax payable is rounded off, and does not take into account any rebates which a taxpayer may be entitled to.
- (3) The rate of tax on taxable incomes above \$22,000 is a flat \$0.60 per dollar.

SECTION 5
GIFT DUTY AND ESTATE DUTY
TABLES

TABLE A
PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR LIFE OF MALE
OR EXPECTANT ON DEATH OF MALE

Years of Age	Expectation of Life of Male	Present Value of \$1 per Annum for Life	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
0	68.29	19.28531	0.03573	0.96427
1	69.03	19.31080	0.03446	0.96554
2	68.17	19.28117	0.03594	0.96406
3	67.27	19.24885	0.03756	0.96244
4	66.33	19.21357	0.03932	0.96068
5	65.39	19.17665	0.04117	0.95883
6	64.44	19.13758	0.04312	0.95688
7	63.48	19.09622	0.04519	0.95481
8	62.53	19.05334	0.04733	0.95267
9	61.56	19.00747	0.04963	0.95037
10	60.60	18.95988	0.05201	0.94799
11	59.63	18.90948	0.05453	0.94547
12	58.66	18.85664	0.05717	0.94283
13	57.69	18.80124	0.05994	0.94006
14	56.74	18.74441	0.06278	0.93722
15	55.79	18.68488	0.06576	0.93424
16	54.86	18.62391	0.06880	0.93120
17	53.92	18.55941	0.07203	0.92797
18	53.00	18.49340	0.07533	0.92467
19	52.07	18.42335	0.07883	0.92117
20	51.15	18.35084	0.08246	0.91754
21	50.23	18.27503	0.08625	0.91375
22	49.32	18.19663	0.09017	0.90983
23	48.40	18.11378	0.09431	0.90569
24	47.48	18.02716	0.09864	0.90136
25	46.56	17.93660	0.10317	0.89683
26	45.63	17.84085	0.10796	0.89204
27	44.70	17.74068	0.11297	0.88703
28	43.76	17.63473	0.11826	0.88174
29	42.83	17.52505	0.12375	0.87625
30	41.89	17.40904	0.12955	0.87045

TABLE A—continued

PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR LIFE OF MALE
OR EXPECTANT ON DEATH OF MALE—continued

Years of Age	Expectation of Life of Male	Present Value of \$1 per Annum for Life	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
31	40.96	17.28896	0.13555	0.86445
32	40.03	17.16314	0.14184	0.85816
33	39.10	17.03125	0.14844	0.85156
34	38.17	16.89325	0.15534	0.84466
35	37.24	16.74887	0.16256	0.83744
36	36.32	16.59947	0.17003	0.82997
37	35.40	16.44326	0.17784	0.82216
38	34.48	16.27992	0.18600	0.81400
39	33.57	16.11105	0.19445	0.80555
40	32.65	15.93259	0.20337	0.79663
41	31.74	15.74811	0.21259	0.78741
42	30.83	15.55535	0.22223	0.77777
43	29.92	15.35394	0.23230	0.76770
44	29.02	15.14570	0.24271	0.75729
45	28.13	14.92971	0.25351	0.74649
46	27.25	14.70681	0.26466	0.73534
47	26.38	14.47697	0.27615	0.72385
48	25.52	14.24019	0.28799	0.71201
49	24.67	13.99650	0.30018	0.69982
50	23.83	13.74593	0.31270	0.68730
51	23.00	13.48857	0.32557	0.67443
52	22.18	13.22161	0.33892	0.66108
53	21.38	12.95106	0.35245	0.64755
54	20.59	12.67399	0.36630	0.63370
55	19.82	12.39437	0.38028	0.61972
56	19.06	12.10793	0.39460	0.60540
57	18.32	11.81622	0.40919	0.59081
58	17.60	11.52338	0.42383	0.57617
59	16.89	11.22607	0.43870	0.56130
60	16.19	10.92067	0.45397	0.54603
61	15.50	10.60871	0.46956	0.53044
62	14.82	10.29307	0.48535	0.51465
63	14.16	9.97560	0.50122	0.49878
64	13.52	9.65621	0.51719	0.48281
65	12.90	9.34054	0.53297	0.46703
66	12.29	9.01705	0.54915	0.45085

TABLE A—continued

PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR LIFE OF MALE
OR EXPECTANT ON DEATH OF MALE—continued

Years of Age	Expectation of Life of Male	Present Value of \$1 per Annum for Life	Present Value of \$1 Payable on Death	Present Value of Income of Capital of \$1 for Life
	Years	\$	\$	\$
67	11.71	8.70177	0.56491	0.43509
68	11.14	8.38437	0.58078	0.41922
69	10.59	8.06670	0.59666	0.40334
70	10.05	7.75097	0.61245	0.38755
71	9.53	7.43320	0.62834	0.37166
72	9.01	7.11396	0.64430	0.35570
73	8.51	6.79196	0.66040	0.33960
74	8.03	6.48255	0.67587	0.32413
75	7.57	6.17217	0.69139	0.30861
76	7.13	5.87436	0.70628	0.29372
77	6.71	5.58028	0.72099	0.27901
78	6.31	5.29600	0.73520	0.26480
79	5.92	5.01599	0.74920	0.25080
80	5.55	4.73990	0.76300	0.23700
81	5.19	4.47126	0.77644	0.22356
82	4.84	4.20411	0.78979	0.21021
83	4.51	3.94555	0.80272	0.19728
84	4.19	3.69482	0.81526	0.18474
85	3.89	3.45545	0.82723	0.17277
86	3.60	3.21687	0.83916	0.16084
87	3.33	2.99474	0.85026	0.14974
88	3.07	2.78084	0.86096	0.13904
89	2.83	2.57640	0.87118	0.12882
90	2.60	2.37771	0.88111	0.11889
91	2.39	2.19631	0.89018	0.10982
92	2.19	2.02354	0.89882	0.10118
93	2.01	1.86805	0.90660	0.09340
94	1.84	1.71429	0.91429	0.08571
95	1.68	1.56916	0.92154	0.07846
96	1.53	1.43311	0.92834	0.07166
97	1.39	1.30612	0.93469	0.06531
98	1.27	1.19728	0.94014	0.05986
99	1.15	1.08844	0.94558	0.05442
100	1.05	0.99773	0.95011	0.04989

TABLE B

PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR LIFE OF FEMALE
OR EXPECTANT ON DEATH OF FEMALE

Years of Age	Expectation of Life of Female	Present Value of \$1 per Annum for Life	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
0	72.43	19.41600	0.02920	0.97080
1	72.90	19.42934	0.02853	0.97147
2	72.05	19.40521	0.02974	0.97026
3	71.12	19.37756	0.03112	0.96888
4	70.18	19.34831	0.03258	0.96742
5	69.23	19.31737	0.03413	0.96587
6	68.26	19.28427	0.03579	0.96421
7	67.30	19.24994	0.03750	0.96250
8	66.33	19.21357	0.03932	0.96068
9	65.35	19.17505	0.04125	0.95875
10	64.37	19.13464	0.04327	0.95673
11	63.39	19.09226	0.04539	0.95461
12	62.41	19.04779	0.04761	0.95239
13	61.42	19.00067	0.04997	0.95003
14	60.44	18.95172	0.05241	0.94759
15	59.47	18.90092	0.05495	0.94505
16	58.50	18.84765	0.05762	0.94238
17	57.53	18.79180	0.06041	0.93959
18	56.56	18.73325	0.06334	0.93666
19	55.60	18.67252	0.06637	0.93363
20	54.64	18.60887	0.06956	0.93044
21	53.67	18.54147	0.07293	0.92707
22	52.71	18.47156	0.07642	0.92358
23	51.75	18.39830	0.08008	0.91992
24	50.79	18.32154	0.08392	0.91608
25	49.83	18.24110	0.08795	0.91205
26	48.87	18.15682	0.09216	0.90784
27	47.92	18.06947	0.09653	0.90347
28	46.96	17.97698	0.10115	0.89885
29	46.01	17.88108	0.10595	0.89405
30	45.06	17.78043	0.11098	0.88902
31	44.11	17.67502	0.11625	0.88375
32	43.16	17.56461	0.12177	0.87823
33	42.21	17.44898	0.12755	0.87245
34	41.26	17.32787	0.13361	0.86639
35	40.32	17.20238	0.13988	0.86012

TABLE B—*continued*PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR LIFE OF FEMALE
OR EXPECTANT ON DEATH OF FEMALE—*continued*

Years of Age	Expectation of Life of Female	Present Value of \$1 per Annum for Life	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
36	39.38	17.07102	0.14645	0.85355
37	38.44	16.93352	0.15332	0.84668
38	37.50	16.78959	0.16052	0.83948
39	36.57	16.64058	0.16797	0.83203
40	35.64	16.48470	0.17576	0.82424
41	34.71	16.32162	0.18392	0.81608
42	33.79	16.15293	0.19235	0.80765
43	32.88	15.97856	0.20107	0.79893
44	31.97	15.79638	0.21018	0.78982
45	31.06	15.60540	0.21973	0.78072
46	30.17	15.40991	0.22950	0.77050
47	29.29	15.20817	0.23959	0.76041
48	28.41	14.99774	0.25011	0.74989
49	27.54	14.78078	0.26096	0.73904
50	26.68	14.55732	0.27213	0.72787
51	25.82	14.32456	0.28377	0.71623
52	24.98	14.08804	0.29560	0.70440
53	24.14	13.83998	0.30800	0.69200
54	23.31	13.58470	0.32077	0.67923
55	22.49	13.32253	0.33387	0.66613
56	21.67	13.05019	0.34749	0.65251
57	20.87	12.77449	0.36128	0.63872
58	20.08	12.49093	0.37545	0.62455
59	19.30	12.19839	0.39008	0.60992
60	18.53	11.89933	0.40503	0.59497
61	17.77	11.59402	0.42030	0.57970
62	17.02	11.28238	0.43588	0.56412
63	16.28	10.95993	0.45200	0.54800
64	15.56	10.63620	0.46819	0.53181
65	14.84	10.30270	0.48487	0.51513
66	14.14	9.96598	0.50170	0.49830
67	13.45	9.62085	0.51896	0.48104
68	12.77	9.27160	0.53642	0.46358
69	12.11	8.92159	0.55392	0.44608
70	11.46	8.56256	0.57187	0.42813
71	10.83	8.20702	0.58965	0.41035
72	10.22	7.85036	0.60748	0.39252

TABLE B—*continued*PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR LIFE OF FEMALE
OR EXPECTANT ON DEATH OF FEMALE—*continued*

Years of Age	Expectation of Life of Female	Present Value of \$1 per Annum for Life	Present Value of \$1 Payable on Death	Present Value of Income on Capital of \$1 for Life
	Years	\$	\$	\$
73	9.63	7.49459	0.62527	0.37473
74	9.07	7.15080	0.64246	0.35754
75	8.53	6.80486	0.65976	0.34024
76	8.01	6.46966	0.67652	0.32348
77	7.52	6.13833	0.69308	0.30692
78	7.05	5.82022	0.70899	0.29101
79	6.59	5.49499	0.72525	0.27475
80	6.16	5.18940	0.74053	0.25947
81	5.74	4.88168	0.75592	0.24408
82	5.34	4.58319	0.77084	0.22916
83	4.96	4.29814	0.78509	0.21491
84	4.59	4.00823	0.79959	0.20041
85	4.24	3.73400	0.81330	0.18670
86	3.91	3.47191	0.82640	0.17360
87	3.60	3.21687	0.83916	0.16084
88	3.31	2.97829	0.85109	0.14891
89	3.04	2.75616	0.86219	0.13781
90	2.78	2.53320	0.87334	0.12666
91	2.54	2.32588	0.88371	0.11629
92	2.32	2.13584	0.89321	0.10679
93	2.12	1.96307	0.90185	0.09815
94	1.93	1.79592	0.91020	0.08980
95	1.75	1.63265	0.91837	0.08163
96	1.59	1.48753	0.92562	0.07438
97	1.45	1.36054	0.93197	0.06803
98	1.31	1.23356	0.93832	0.06168
99	1.19	1.12472	0.94376	0.05624
100	1.07	1.01587	0.94921	0.05079

TABLE C

PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR WIDOWHOOD OR
EXPECTANT ON TERMINATION OF WIDOWHOOD

Years of Age	Expectation of Widowhood	Present Value of \$1 per Annum for Widowhood	Present Value of \$1 Payable on Termination of Widowhood	Present Value of Income on Capital of \$1 for Widowhood
	Years	\$	\$	\$
Up to 20	7.5	6.12479	0.69376	0.30624
21	8.2	6.59213	0.67039	0.32961
22	8.9	7.04336	0.64783	0.35217
23	9.8	7.59895	0.62005	0.37995
24	10.7	8.13101	0.59344	0.40656
25	11.5	8.58483	0.57076	0.42924
26	12.2	8.96931	0.55153	0.44847
27	12.8	9.28751	0.53562	0.46438
28	13.3	9.54509	0.52275	0.47725
29	13.7	9.74712	0.51264	0.48736
30	14.1	9.94674	0.50266	0.49734
31	14.4	10.09104	0.49545	0.50455
32	14.9	10.33156	0.48342	0.51658
33	15.3	10.51709	0.47415	0.52585
34	15.8	10.74614	0.46269	0.53731
35	16.3	10.96866	0.45157	0.54843
36	16.9	11.23044	0.43848	0.56152
37	17.6	11.52338	0.42383	0.57617
38	18.2	11.76874	0.41156	0.58844
39	18.8	12.00617	0.39969	0.60031
40	19.5	12.27376	0.38631	0.61369
41	20.3	12.56989	0.37151	0.62849
42	20.9	12.78526	0.36074	0.63926
43	21.4	12.95789	0.35211	0.64789
44	21.8	13.09463	0.34527	0.65473
45	22.0	13.16300	0.34185	0.65815
46	22.1	13.19556	0.34022	0.65978
47	22.2	13.22811	0.33859	0.66141
48	22.2	13.22811	0.33859	0.66141
49	22.1	13.19556	0.34022	0.65978
50	22.0	13.16300	0.34185	0.65815
51	21.8	13.09463	0.34527	0.65473
52	21.6	13.02626	0.34869	0.65131
53	21.3	12.92370	0.35381	0.64619
54	20.9	12.78526	0.36074	0.63926
55	20.5	12.64168	0.36792	0.63208
56	20.0	12.46221	0.37689	0.62311
57	19.6	12.31145	0.38443	0.61557

TABLE C—*continued*PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR WIDOWHOOD OR
EXPECTANT ON TERMINATION OF WIDOWHOOD—*continued*

Years of Age	Expectation of Widowhood	Present Value of \$1 per Annum for Widowhood	Present Value of \$1 Payable on Termination of Widowhood	Present Value of Income on Capital of \$1 for Widowhood
	Years	\$	\$	\$
Up to 58	19.1	12.12301	0.39385	0.60615
59	18.5	11.88745	0.40563	0.59437
60	18.0	11.68959	0.41552	0.58448
61	17.4	11.44028	0.42799	0.57201
62	16.8	11.18681	0.44066	0.55934
63	16.1	10.88140	0.45593	0.54407
64	15.4	10.56290	0.47186	0.52814
65	14.6	10.18725	0.49064	0.50936

For widows 66 years of age or over, the expectations of life and widowhood are deemed to be identical, and Table B applies for both purposes.

TABLE D

PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR PERIOD OTHER THAN LIFE OR EXPECTANT ON EVENT OTHER THAN DEATH

Years	Present Value of \$1 Per Annum for Period	Present Value of \$1 Payable After Period	Present Value of Income on Capital of \$1 for Period
	\$	\$	\$
1	0.95238	0.95238	0.04762
2	1.85941	0.90703	0.09297
3	2.72325	0.86384	0.13616
4	3.54595	0.82270	0.17730
5	4.32948	0.78353	0.21647
6	5.07569	0.74622	0.25378
7	5.78637	0.71068	0.28932
8	6.46321	0.67684	0.32316
9	7.10782	0.64461	0.35539
10	7.72173	0.61391	0.38609
11	8.30641	0.58468	0.41532
12	8.86325	0.55684	0.44316
13	9.39357	0.53032	0.46968
14	9.89964	0.50507	0.49493
15	10.37966	0.48102	0.51898
16	10.83777	0.45811	0.54189
17	11.27407	0.43630	0.56370
18	11.68959	0.41552	0.58448
19	12.08532	0.39573	0.60427
20	12.46221	0.37689	0.62311
21	12.82115	0.35894	0.64106
22	13.16300	0.34185	0.65815
23	13.48857	0.32557	0.67443
24	13.79864	0.31007	0.68993
25	14.09394	0.29530	0.70470
26	14.37518	0.28124	0.71876
27	14.64303	0.26785	0.73215
28	14.89813	0.25509	0.74491
29	15.14107	0.24295	0.75705
30	15.37245	0.23138	0.76862
31	15.59281	0.22036	0.77964
32	15.80268	0.20987	0.79013

TABLE D—*continued*PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR PERIOD OTHER THAN LIFE OR EXPECTANT ON EVENT OTHER THAN DEATH—*continued*

Years	Present Value of \$1 Per Annum for Period	Present Value of \$1 Payable After Period	Present Value of Income on Capital of \$1 for Period
	\$	\$	\$
33	16.00255	0.19987	0.80013
34	16.19290	0.19035	0.80965
35	16.37419	0.18129	0.81871
36	16.54685	0.17266	0.82734
37	16.71129	0.16444	0.83556
38	16.86789	0.15661	0.84339
39	17.01704	0.14915	0.85085
40	17.15909	0.14205	0.85795
41	17.29437	0.13528	0.86472
42	17.42321	0.12884	0.87116
43	17.54591	0.12270	0.87730
44	17.66277	0.11686	0.88314
45	17.77407	0.11130	0.88870
46	17.88007	0.10600	0.89400
47	17.98101	0.10095	0.89905
48	18.07716	0.09614	0.90386
49	18.16872	0.09156	0.90844
50	18.25592	0.08720	0.91280
51	18.33898	0.08305	0.91695
52	18.41807	0.07910	0.92090
53	18.49340	0.07533	0.92467
54	18.56514	0.07174	0.92826
55	18.63347	0.06833	0.93167
56	18.69854	0.06507	0.93493
57	18.76052	0.06197	0.93803
58	18.81954	0.05902	0.94098
59	18.87575	0.05621	0.94379
60	18.92929	0.05354	0.94646
61	18.98027	0.05099	0.94901
62	19.02883	0.04856	0.95144
63	19.07508	0.04625	0.95375
64	19.11912	0.04404	0.95596
65	19.16107	0.04195	0.95805

TABLE D—*continued*PRESENT VALUE OF ANNUITY OR OTHER INTEREST FOR PERIOD OTHER THAN LIFE OR EXPECTANT ON EVENT OTHER THAN DEATH—*continued*

Years	Present Value of \$1 Per Annum for Period	Present Value of \$1 Payable After Period	Present Value of Income on Capital of \$1 for Period
	\$	\$	\$
66	19.20102	0.03995	0.96005
67	19.23907	0.03805	0.96195
68	19.27530	0.03623	0.96377
69	19.30981	0.03451	0.96549
70	19.34268	0.03287	0.96713
71	19.37398	0.03130	0.96870
72	19.40379	0.02981	0.97019
73	19.43218	0.02839	0.97161
74	19.45922	0.02704	0.97296
75	19.48497	0.02575	0.97425
76	19.50949	0.02453	0.97547
77	19.53285	0.02336	0.97664
78	19.55510	0.02225	0.97775
79	19.57628	0.02119	0.97881
80	19.59646	0.02018	0.97982
81	19.61568	0.01922	0.98078
82	19.63298	0.01830	0.98170
83	19.65141	0.01743	0.98257
84	19.66801	0.01660	0.98340
85	19.68382	0.01581	0.98419
86	19.69887	0.01506	0.98494
87	19.71321	0.01434	0.98566
88	19.72687	0.01366	0.98634
89	19.73987	0.01301	0.98699
90	19.75226	0.01239	0.98761
91	19.76406	0.01180	0.98820
92	19.77529	0.01124	0.98876
93	19.78599	0.01070	0.98930
94	19.79618	0.01019	0.98981
95	19.80589	0.00971	0.99029
96	19.81513	0.00924	0.99076
97	19.82394	0.00880	0.99120
98	19.83232	0.00838	0.99162
99	19.84030	0.00798	0.99202
100	19.84791	0.00760	0.99240

TABLE E
SCALE RATES OF GIFT DUTY

<i>Value of Dutiable Gifts</i>	<i>Rate of Duty</i>
Not exceeding \$8,000	Nil
Exceeding Not exceeding	
\$8,000 - \$10,000	9% on excess over \$8,000
\$10,000 - \$12,000	\$180 plus 10% of excess over \$10,000
\$12,000 - \$14,000	\$380 plus 11% of excess over \$12,000
\$14,000 - \$16,000	\$600 plus 12% of excess over \$14,000
\$16,000 - \$18,000	\$840 plus 13% of excess over \$16,000
\$18,000 - \$20,000	\$1,100 plus 14% of excess over \$18,000
\$20,000 - \$22,000	\$1,380 plus 15% of excess over \$20,000
\$22,000 - \$24,000	\$1,680 plus 16% of excess over \$22,000
\$24,000 - \$26,000	\$2,000 plus 17% of excess over \$24,000
\$26,000 - \$28,000	\$2,340 plus 18% of excess over \$26,000
\$28,000 - \$30,000	\$2,700 plus 19% of excess over \$28,000
\$30,000 - \$32,000	\$3,080 plus 20% of excess over \$30,000
\$32,000 - \$34,000	\$3,480 plus 21% of excess over \$32,000
\$34,000 - \$36,000	\$3,900 plus 22% of excess over \$34,000
\$36,000 - \$38,000	\$4,340 plus 23% of excess over \$36,000
\$38,000 - \$40,000	\$4,800 plus 24% of excess over \$38,000
Exceeding \$40,000	\$5,280 plus 25% of excess over \$40,000

TABLE F
SCALE RATES OF ESTATE DUTY

<i>Final Balance of Estate</i>		<i>Rate</i>
Not Exceeding \$25,000		Nil
.Exceeding	Not Exceeding	
\$25,000 -	\$27,000	7% of excess over \$25,000
\$27,000 -	\$29,000	\$140 plus 8% of excess over \$27,000
\$29,000 -	\$31,000	\$300 plus 9% of excess over \$29,000
\$31,000 -	\$33,000	\$480 plus 10% of excess over \$31,000
\$33,000 -	\$35,000	\$680 plus 11% of excess over \$33,000
\$35,000 -	\$37,000	\$900 plus 12% of excess over \$35,000
\$37,000 -	\$39,000	\$1,140 plus 13% of excess over \$37,000
\$39,000 -	\$41,000	\$1,400 plus 14% of excess over \$39,000
\$41,000 -	\$43,000	\$1,680 plus 15% of excess over \$41,000
\$43,000 -	\$45,000	\$1,980 plus 16% of excess over \$43,000
\$45,000 -	\$47,000	\$2,300 plus 17% of excess over \$45,000
\$47,000 -	\$49,000	\$2,640 plus 18% of excess over \$47,000
\$49,000 -	\$51,000	\$3,000 plus 19% of excess over \$49,000
\$51,000 -	\$53,000	\$3,380 plus 20% of excess over \$51,000
\$53,000 -	\$55,000	\$3,780 plus 21% of excess over \$53,000
\$55,000 -	\$57,000	\$4,200 plus 22% of excess over \$55,000
\$57,000 -	\$59,000	\$4,640 plus 23% of excess over \$57,000
\$59,000 -	\$61,000	\$5,100 plus 24% of excess over \$59,000
\$61,000 -	\$63,000	\$5,580 plus 25% of excess over \$61,000
\$63,000 -	\$65,000	\$6,080 plus 26% of excess over \$63,000
\$65,000 -	\$75,000	\$6,600 plus 27% of excess over \$65,000
\$75,000 -	\$85,000	\$9,300 plus 28% of excess over \$75,000
\$85,000 -	\$95,000	\$12,100 plus 29% of excess over \$85,000
\$95,000 -	\$105,000	\$15,000 plus 30% of excess over \$95,000
\$105,000 -	\$115,000	\$18,000 plus 31% of excess over \$105,000
\$115,000 -	\$125,000	\$21,100 plus 32% of excess over \$115,000
\$125,000 -	\$135,000	\$24,300 plus 33% of excess over \$125,000
\$135,000 -	\$145,000	\$27,600 plus 34% of excess over \$135,000
\$145,000 -	\$155,000	\$31,000 plus 35% of excess over \$145,000
\$155,000 -	\$175,000	\$34,500 plus 36% of excess over \$155,000
\$175,000 -	\$195,000	\$41,700 plus 37% of excess over \$175,000
\$195,000 -	\$225,000	\$49,100 plus 38% of excess over \$195,000
\$225,000 -	\$255,000	\$60,500 plus 39% of excess over \$225,000
Exceeding	\$255,000	\$72,200 plus 40% of excess over \$255,000

SECTION 6

GROSS MARGINS

GROSS MARGIN ANALYSIS – A CRITICAL EVALUATION

G.F. Tate (1976)

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

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

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

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

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

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

Wheat may yield an average of 3.5 tonnes per hectare over the four good years, but in the fifth dry season nothing. A gross margin analysis calculated on the 3.5 tonnes yield would show a return of about \$280 per hectare. However, on the true crop mean yield over the five years of 2.8 tonnes per hectare the gross margin would be reduced to about \$210 per hectare.

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

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

Choice of the Limiting Resource:

Gross margins are customarily expressed in terms of returns per unit of

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

For the purpose of illustration let us assume that the gross margin per ewe equivalent for a ewe flock is \$8. At 15 ewes per hectare the gross margin per hectare would be \$120. For a cattle policy, buying in weaners and selling prime stock. let us assume a gross margin per ewe equivalent of \$9, or at 15 ewes equivalents per hectare \$135. On this basis of gross margin per hectare cattle look more profitable by \$15 per hectare. (\$135 compared with \$120).

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

Let us assume that a ewe equivalent in sheep costs \$ 9 and a ewe equivalent in cattle costs \$17 (if we assume a weaner steer being the equivalent of 3 ewes this values the weaner at about \$50 per head.) With 15 ewe equivalents per hectare we find the following position:

Cattle	$\frac{\text{Gross margin per hectare}}{\text{Livestock capital per hectare}} = \frac{\$135}{\$255}$	
	i.e. a 53% return to livestock capital	
Sheep	$\frac{\text{Gross margin per hectare}}{\text{Livestock capital per hectare}} = \frac{\$120}{\$135}$	
	i.e. an 89% return to livestock capital	

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

In the above example we find the following:-

Cattle	\$255 invested returns \$135	
	i.e. a gross margin return of 53 cents per \$1 invested.	

Sheep \$135 invested returns \$120
 i.e. a gross margin return of 89 cents per \$1 invested.

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

	Cattle	Sheep
Gross margin per hectare	\$135	\$120
Less interest at 5% on capital	\$ 13	\$ 7
Invested in livestock - approximately		
Residual margin per hectare	\$122	\$113

If capital is available at 5% then the farmer on a 500 hectare property with the above figures is likely to be better off by \$4500 by running cattle. If however, in the above example capital was only available at 12% then the residual margin per hectare would favour investment in sheep rather than cattle.

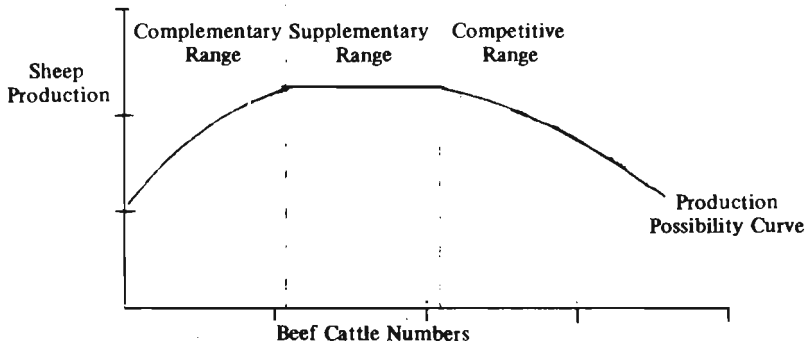
If our farmer has unlimited surplus grass, but only a thousand dollars of capital available to buy livestock then, in the above example, his return to the scarce resource is going to be \$800 if he uses the capital to buy sheep but only \$360 if he used his capital to buy cattle.

Selecting the Correct Rate of Substitution:

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

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

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



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

Gross margin analysis for such a problem would require the definition of the period of feed limitation on a particular property and the use then of the appropriate substitution rate. Again it is a matter of accurately defining the scarce resource, i.e. feed, at a particular time of the year, and using the substitution rate appropriate to that time of the year. Because the above stock policy change is likely to have quite complex effects on farm operation, gross margins analysis is unlikely to yield a satisfactory comparison. Partial or full comparative budgeting would be better methods of comparing the two systems.

Gross margins analysis is sometimes used to compare the returns from a paddock used in growing crop or in carrying livestock. The correct substitution rate to be used in deciding the sheep carrying is not the overall farm position, but the contribution that that particular paddock will make to stock carrying

in the feed pinch period, i.e. the time of maximum constraint. For example, if the time of the year which limits increases in carrying capacity is the months of August, September, the correct substitution rate to impose on sheep versus crop is the potential carrying capacity of that paddock in those two months.

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

Complementarity and Supplementarity of Operations:

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

Old pasture – choumoellier seed – wheat – specialist white clover –
 – wheat – peas – new grass – grass seed – white clover seed – grazing.

The gross margins for each crop might be

	Gross Revenue per hectare	(1976) Direct Costs per hectare	Gross Margin per hectare
Choumoellier seed	\$600	\$200	\$400
Wheat	\$360	\$ 60	\$300
White Clover Specialist	\$300	\$130	\$170
White Clover Pasture	\$200	\$100	\$100
Peas	\$370	\$170	\$200
Ryegrass Seed	\$250	\$200	\$ 50
Grazing ewes	-	-	\$150

Looking simply at the calculated gross margins one would say that most of the farm should be in choumoellier seed. The true position however is not so clear-cut. While over a 10 year period the gross margin for choumoellier could be justified, the price and the yields are extremely variable. Interseasonal variation and risk are very high with this crop. A farmer with all his farm in choumoellier might well go bankrupt waiting for the correct combination of

yield and price to give him that bumper year that over a long term gives such a high average gross margin. In addition choumoellier occupies the ground over the period from December to the succeeding January. Because nothing effective can be done with the land before the following crop of wheat is sown in June, land is really tied up for 18 months and the gross margin for the crop, as expressed above, makes no allowance for this time period, difference.

The specialist white clover permits the carrying of say, five ewes per hectare from May to November, increasing profitability by about \$50 per hectare. The increased nitrogen status of the soil following the white clover crop will also increase the subsequent wheat yield. The white clover in pasture permits the carrying of 15 ewes from February to November, increasing profitability by \$150 per hectare. The ryegrass permits ewe grazing from May to October producing an additional \$120 per hectare of gross margin. The peas boost the subsequent yield of ryegrass by 100 kilograms per hectare. Therefore an additional \$20 per hectare profit is earned from the ryegrass crop, as a result of following peas in the rotation.

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

With mixed arable farming it is possible to establish the revenue earning expectations of the whole rotation over its time period. This may then be compared on a yearly basis with the revenue earning capacity of alternative rotations. Consider for example any rotation 'A', which we assume yields a total gross margin return of \$420 over its six-year time period. Consider also rotation B, which yields a gross margin return of \$480 over its eight-year time period. Clearly, when the total revenue earned is divided by the number of years involved, rotation A returning \$70 per annum would appear more profitable than rotation B returning \$60 per annum.

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

The Allocation between the Variable and Fixed Costs:

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

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

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

- (1) To which enterprise should the cost of new grass establishment be charged—to the cropping because it is necessary to restore structure or fertility, or to the livestock that are going to eat it.
- (2) Should the cost of fencing maintenance be a charge against livestock.
- (3) What is the cost of a fallow and where should it be charged.

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

Summary

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

Where problems are complex, or involve considerations embracing interaction between several enterprises, then the preparation of alternative budgets will give a more reliable guide to the decision-maker. Whatever the tech-

nique of analysis employed, the conclusion will only be as accurate as the initial data on which it was based. The successful application of the analysis will depend on the skill of the farmer or his adviser in recognising the limitation of the technique employed.

GROSS MARGIN ANALYSIS

Farmers with a range of alternative crops and stocking systems have to choose which crops and stock systems they will select. A series of production plans and full budgets of these, whilst indicating the most profitable plan, is time consuming. A preferred approach is to first work out the profitability of each crop and stock system that can be undertaken on the farm, where profitability of each enterprise is measured in terms of the Gross Margin which is the difference between Gross Revenue and Direct Costs. Gross Margins is a short cut method because it ignores fixed costs although these are taken into account later when a better farm plan is budgeted and income and costs for the whole farm estimated

When using the Gross Margin approach to determine a better farm plan, first list the alternative enterprises and estimate gross margins for each, making sure the levels of production are relative to each other, then draw up various rotations taking into account the farmer's preferences and any constraints influenced by say soils, climate, capital. The Gross Margin from each enterprise in the rotation, crops and stock, will be added together and then averaged per hectare per year. The rotation indicating the highest Gross Margin can then be tested by drawing up the whole farm budget to confirm it is a better farm plan.

Example Gross Margins (1/2/78) (Mrs. H. Taylor)

The rotation used is an example of land use on the medium soils of the College Mixed Cropping Farm e.g.

Pasture – wheat – wheat – white clover – wheat – greenfeed –
peas – ryegrass – white clover – pasture 2 years

(i.e. a 9 year rotation)

1. 1st Wheat Crop: (Kopara ex-old grass)

Programme:

(i) Seed Bed Cultivation

Paddock disced twice in March; ploughed in April;
heavy harrowed, grubbed and heavy harrowed in May;
drilled in late May, with 125 kg/ha superphosphate.

(ii) Weed and Pest Control – nil

(iii) Harvest in January with own header. Grain bulk handled into
own silo and stored on farm until August.

(iv) Fire break ploughed and stubble raked for burning in late
January.

Direct Costs (per hectare)	\$
Seed bed preparation with own machinery 5 hrs @ \$4.14/hr	20.70
Seed 125 kg/ha treated seed @ \$210.00/tonne	26.25
Fertiliser: 125 kg/ha @ \$53.80/tonne	6.73
Cartage: @ \$4.15/tonne (subsidy off)	.52
Heading (own header) $\frac{3}{4}$ hr @ \$31.05/hr	23.29
Cartage to silos with own truck 4.03t @ \$1.77	7.13
Raking and Ploughing firebreak $\frac{3}{4}$ hr @ \$4.14	3.11
Cartage silo to nearest rail (by contract) 4.03 tonne @ \$3.56/tonne (24 km)	14.35
TOTAL DIRECT COSTS	\$102.08

Gross Revenue:

Yield: 4.03 tonne/ha

Price: \$120.00/tonne

Storage Increment to July 31st

\$6.75/tonne

Payment per tonne	\$126.75
less wheat levy	46c/tonne
4.03 tonne @	\$126.29
	\$508.95

Thus it appears that in this example using own machinery the wheat crop is costing about \$102/ha to grow, returning \$509/ha gross and leaving a Gross Margin of approximately \$407/ha.

Using contract harvesters would cost a minimum extra charge of \$39/hectare thus reducing the gross margin to nearer \$368/ha.

2. 2nd Wheat Crop: (Kopara ex wheat)

Programme

- (i) Seed Bed Cultivation
 - 2 grubblings in March - April; another grubbing in May; drilled late May, with 125 kg/ha superphosphate
- (ii) Weed and Pest Control
 - 4.2 litres/ha of MCPB in October
- (iii) Undersowing
 - White Clover is sown through drill in August at rate of 3.4 kg/ha, with 125 kg/ha, of reverted super.
- (iv) Harvest programme is the same as for the 1st Wheat crop. It is not necessary to bale the straw.

Direct Costs (per hectare)	\$
Seed bed preparation (own machinery)	
3 hrs @ \$4.14/hr	12.42
Seed (same as 1st wheat crop)	26.25
Fertilizer	6.73
(Undersowing charged to white clover Gross Margin)	
Weed and Pest Control	
4.2 litres/ha MCPB @ \$3.84/litre +	
½ hr @ \$4.14/hr	16.13
Heading (own header) same as before	23.29
Cartage: to silo 3.7 tonne @ \$1.77	6.55
Silo to nearest rail 3.7 tonne @ \$3.56	13.17
TOTAL DIRECT COSTS	\$104.54

Gross Revenue:

Yield: 3.7 tonnes/ha (55 bus/ac)

Price: Same calculations as first crop

Revenue 3.7 tonnes @ \$126.29 \$467.27

Here cost of growing 2nd crop is approximately \$105/ha and reduced yield means return down to \$467/ha, leaving a gross margin of \$362/ha with own machinery or \$328/ha using a contract header.

3. White Clover Crop (ex-wheat)

Programme:

- (i) Seed undersown in wheat crop in August.
- (ii) Fertilizer. Paddock receives 250 kg/ha super phosphate in March.
- (iii) Grazing programme. Paddock receives a light grazing in March and is then fairly consistently grazed over the winter, thus helping to spread the straw. Over the spring months August and September the equivalent stocking rate is approximately 5 e.e./ha
- (iv) Closing: Paddock is closed from grazing about 7th October, and heavy rolled.
- (v) Weed and Pest Control

If grass weeds are present, then paraquat is applied at 1.4 litres/ha, after closing or alternatively sprayed with carbetamex in August. Bromophos is applied for case bearer control in December if necessary, at rate of .36 kg a.i./ha (2 applications)

- (vi) Harvest Programme

Crop is mowed at end of January – early February, is left for 5 to 6 days and is then headed. The field dressed seed at approximately 70 kg per sack is then carted to be machine dressed for sale. Extra sacks are required for double bagging the machine dressed seed.

Direct Costs:	\$
Undersowing: Seed 3.4 kg/ha @ \$2.00/kg	6.80
.6 hrs @ \$4.14/hr	2.48
Fertilizer: 125 kg/ha reverted super @ \$51.05 plus cartage \$4.15/tonne	6.90
250 kg/ha super phosphate @ \$53.80/tonne (incl. freight)	13.45
Heavy rolling .6 hrs @ \$4.14/hr	2.48
Weed Control 1.4 litres paraquat @ \$6.96 litre + ½ hr @ \$4.14/hr	11.81
Pest Control: Bromophos – 2 applications @ .36 kg a.i./ha, i.e. \$9.41/ha	18.82
Mowing: 1.75 hrs/ha @ \$4.14/hr	7.52
Heading: 2.5 hrs @ \$31.05	77.63
Sacks: 14 sacks @ 48c net (50 kg sacks)	6.72
Seed Testing:	
Purity and Germination @ \$12.00/line	.86
Seed Certification 352 kg/ha @ 2.2c/kg	7.74
Consolidated Dressing: Store Handling Charges 12c/kg (of field dressed wgt)	60.00
Cartage: 7.4 sacks/ha @ 27.6c/sack	2.03
TOTAL DIRECT COSTS	\$224.97

Gross Revenue:

Yield: 500 kg/ha field dressed with a
30% loss on machine dressing gives
350kg/ha machine dressed yield
1st Generation Seed

1st Generation Seed
350 kg @ \$1.40/kg 490.00

In this illustration, gross revenue is \$490/ha with direct costs of \$225/ha, leaving a gross margin of \$296/ha. To this should be added some return for the winter spring grazing. From the sheep **Gross Margins**, with the fat lamb policy typical

of mixed cropping farms. the gross margin of \$12 per ewe equivalent can be said to be the return from the consumption of 590 kg of grass dry matter over 12 months.

If one hectare of white clover produces 1500 kg in the winter/spring period, then this represents 254% of the annual requirement of one ewe.

Thus the return to be added to the above is:

$\$12.00 \times 2.54 = \30.48 which brings the total white clover margin to $\$295.48c/ha$.

4. 3rd Wheat Crop (ex white clover)

Programme:

Following the white clover harvest, the tailings are fed to sheep and the paddock cleaned up prior to cultivation for wheat.

The cultivation programme follows as for the wheat crop ex old grass and the only alteration to the gross margin analysis is the inclusion of weed control.

Direct Costs (per hectare):

As for 1st Wheat Crop \$102/ha
plus M.C.P.A. @ 3.5 litres @ \$3.11/litre is \$10.89
thus total direct costs = \$112.89/ha.

Gross Revenue:

Yield: as for 2nd crop
3.7 tonnes/ha
@ \$126.29 \$467.27
Gross Margin thus \$354/ha with own machinery.

5. Greenfeed Oats (ex wheat):

Programme:

(i) Seed bed preparation

Following the stubble burn off the paddock receives three grubblings during February and crop is drilled at end of February.

- (ii) Sowing: Amuri Oats are drilled at rate of 90 kg/ha with 250 kg/ha of nitrogen super.
- (iii) Grazing: Paddock is grazed during June and July.

Direct Costs	\$
Seed bed preparation (own machinery)	
2½ hrs/ha @ \$4.14/hr	10.35
Seed 90 kg @ \$145/tonne	13.05
Fertilizer 250 kg nitrogen super @ \$67.45/tonne (cartage included)	16.86
TOTAL DIRECT COSTS	\$40.26

Gross Revenue

The revenue is measured in terms of the feed available for sheep grazing, the worth varying with various sheep policies.

Again using the 2 yr fat lamb flock system with a \$12.00 gross margin per ewe equivalent for a feed consumption of 590 kg of dry matter then one hectare of greenfeed producing an estimated 3500 kg/ha would support the annual equivalent of 6 ee per hectare.

Thus the revenue contribution is:

5.9 e.e. x \$12.00 = \$70.80	(say)	\$71.00
Gross Margin then (\$71 – \$40) =		\$31/ha

6. Field Peas (Blue Rondo) ex greenfeed

Programme:

- (i) Seed bed cultivation

Paddock disced twice at end of July and then ploughed heavy harrowed, rolled and drilled on the rolling, at end of August.

- (ii) Sowing

Rate of sowing 250 kg/ha with 250 kg/ha of molybdate super

(iii) Weed and Pest Control

The paddock would be sprayed for weed control in October with 5.6 litres/ha of M.C.P.B.

(iv) Harvesting

The crop is direct headed in February into sacks and is carted from the paddock to merchants store for dressing and sale. The pea straw is raked and baled and sold in the paddock.

Direct Costs:		\$
Seed Bed Preparation		
4hr/ha @ \$4.14/hr		16.56
Seed: 250 kg/ha Blue Rondo @ \$2.50/tonne		62.50
(Contract price includes treating and sacks)		
Fertilizer: 250 kg/ha molybdate super @ \$57.15/tonne	14.29	
Weed Control: 5.6 litres/ha M.C.P.B. @ \$3.84/litre		
plus ½ hr/ha @ \$4.14/hr		23.57
Harvesting: 1.75 hrs/ha @ \$31.05/hr		54.34
Sacks: 54 sacks/ha @ 52.5c nett		28.35
Cartage: 2.69 tonnes or 40 sacks @ \$0.294/sack		11.76
Consolidated Dressing & Store Handling		
\$21.88/tonne x 2.69		58.86
Raking pea straw (own machinery)		
.5 hrs/ha @ \$4.14/hr		2.07
Baling pea straw (contract)		
86 bales/ha @ 28c/bale		24.08
TOTAL DIRECT COSTS		\$296.38

Gross Revenue

Yield: 2.69 tonnes/ha	
Price: Contract \$140/tonne	
Income: 2.69 x 140	376.60
Pea Straw 86 bales @ 35c per bale	30.10
TOTAL	\$406.70

Thus cost/ha approximates \$296 and gross revenue is in the vicinity of \$407/ha in the example, leaving a gross margin of approximately \$111/ha.

7. New Grass for Ariki Seed (ex peas)

Programme:

Following the pea harvest in February the paddock receives two grubblings and the lime is worked into the soil. To sustain a rotation of this nature the pH should be brought up to 6.2 at this stage which means 2.47 tonnes/ha lime if pH following peas was about 5.7. Cultivation follows programme of grub-harrow and roll, in sequence three times to achieve effective weed control and then new grass is drilled with a mixture of 22.4 kg/ha Ariki ryegrass and 3.4 kg/ha white clover sown with 250 kg/ha of super phosphate.

Grazing: This new grass is given a light first grazing in May and is lightly grazed over the winter to allow light into the clover seedlings. Then although the paddock is not available for the whole spring period, the equivalent spring grazing rate is 6 e.e./ha

The paddock is closed from grazing in the middle of September and at the end of September receives either 125 kg/ha of urea or 250 kg/ha of sulphate of ammonia.

Harvesting: In early January the crop is mown and left for 5 - 6 days before being headed, 2 rows into one.

The field dressed seed is then carted in sacks to the merchant for machine dressing and sale.

The ryegrass straw is raked and baled and sold in the paddock, the yield being approximately 100 bales/ha.

Direct Costs (per ha)	\$
Seed Bed Preparation	
6½ hrs/ha @ \$4.14/hr	26.91
Seed 22.4 kg/ha Ariki ryegrass @ 70c/kg	15.40
3.4 kg/ha white clover @ \$2.00/kg	6.80
Fertilizer: Lime 2.47 tonnes/ha on the ground	
@ \$9.30/tonne (includes cartage and	
apreading)	22.97
250 kg/ha super @ \$53.80/tonne	13.45
250 kg/ha sulphate of ammonia @ \$96.50/tonne	24.13
Harvesting: Mowing 1.5 hrs/ha @ \$4.14/hr	6.21
Heading 2.25 hrs/ha @ \$31.05/hr	69.86
Sacks: 18 sacks @ 57c	10.26
Cartage: 18 sacks @ 27.6c	4.97
Seed Certification	
1.1c/kg (MD yield) (660 kg/ha)	7.26
Seed Testing	
Purity and Germination @ \$12.00/line	.86
Consolidated Dressing and Store Handling Charge	
4c/kg (field dressed wgt) 880 kg	35.20
Separating white clover and ryegrass	
18 sacks @ 68c/sack	12.24
Raking ryegrass straw (own machinery)	
.3 hrs/ha @ \$4.14/hr	1.24
Baling ryegrass straw (contract)	
100 bales/ha @ 28c/bale	28.00
TOTAL DIRECT COSTS	\$285.76

Gross Revenue

Yield: Field dressed 900 kg/ha approximately	
Loss on machine dressing close to 25%	
Thus machine dressed yield 675 kg/ha	
Price: 1st Generation Ariki at 43c/kg	
Income: 675 kg @ 43c	\$290.25
Ryegrass Straw	
100 bales/ha sold in paddock @ 40c/bale	40.00
Gross Revenue	\$330.25

This illustration suggests gross revenue of \$320 to \$330/ha with direct costs of approximately \$285/ha leaves a gross margin surplus of \$35 to \$45/ha. Some recognition in terms of income should also be attributed to the grazing provided by the paddock during the winter spring period.

With an estimated feed production of 2200 kg/ha over the grazing period, representing an annual grazing equivalent of 3.7 ewe equivalents then the gross margin contribution is:

$$3.7 \times \$12.00 = \$44.40 \text{ which brings the surplus to } \$90.00$$

Without the liming charge, the gross margin would be about \$23/ha extra

8. 2nd Year of New Grass For White Clover Seed

Programme:

Following the ryegrass harvest the paddock is grazed consistently until being closed in early October (1st week). The autumn fertilizer application is 250 kg/ha of straight super phosphate. The programme is virtually identical to the earlier white clover crop (3), except no paraquat will be used and there will be more likelihood of a case bearer problem.

Direct Costs	\$
Fertiliser: 250 kg/ha @ \$45.80/tonne	11.45
Heavy Rolling: .6 hrs @ \$4.14/hr	2.48
Pest Control: Bromophos (case bearer control)	18.82
Mowing, Heading (as before)	84.88
Seed Testing and sacks	4.12
Seed Certification (225 kg/ha) @ 2.2c/kg	4.95
Cartage: 4-5 sacks/ha @ 27.6	1.38
Consolidated Dressing & Store Handling Charges	
12c/kg (field dressed wgt) i.e. 340 kg/ha	40.80
TOTAL DIRECT COSTS	\$168.88

Gross Revenue

Yield: Field dressed 340 kg/ha (2 sacks/ac) with
30% loss on machine dressing gives 225 kg/ha of machine
dressed seed.

225 kg @ \$1.40/kg \$315.00

Thus with gross revenue of approximately \$315/ha and
direct costs of \$170/ha the gross margin is approximately
145/ha.

Again the grazing contribution should be added to this.
The estimated feed produced over the grazing period is
2700 kg/ha or an annual grazing equivalent of 4.6 ewes
equivalents, which means a gross margin contribution
of:

$4.6 \times \$12.00 = \55.20

bringing the white clover gross margin to \$200/ha.

9. Pasture (2 years grazing)

In assessing the gross margin contribution of pasture, the revenue earned
is measured by the stocking rate per ha times the ewe equivalent gross
margin. The estimated utilised feed is 8250 kg/ha D.M. which at 590 kg
D.M. per ewe means a stocking rate of 14 e.e./ha.

At \$12.00 per e.e. the gross revenue becomes $14 \times \$12.00 = \168.00 .

Direct Costs:

Fertiliser' Autumn application of 250 kg/ha of super phosphate @ \$45.80/tonne	\$ 11.45
Haymaking:	
Mowing & raking @ \$34.00/ha x 0.2	6.80
Baling 140 bales/ha @ 28c x 0.2	7.84
Cartage 140 bales @ 28c x 0.2	6.16
TOTAL DIRECT COSTS	\$32.25

Thus with gross revenue of \$168/ha and direct costs of \$32/ha, the gross margin is \$136/ha for pasture.

Regarding the haymaking charges, the cost has been assessed as that of providing the 14 e.e./ha with 2 bales per ewe for wintering. i.e. 28 bales/ha required which is 20% of the normal hay crop of 140 bales/ha.

Summary:

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

Year	Crop	\$ Gross Margin/ha
1	Wheat	368
2	Wheat	328
3	White Clover (sp.)	296
4	Wheat	354
5	Greenfeed Oats \$31	
	Field Peas	111
6	Arika ryegrass	90
7	White Clover	200
8	Pasture	136
9	Pasture	136

Average annual gross margin thus \$225/ha. Following this procedure and comparing various rotations, a best rotation can be established, which then enables the formulation of a better farm plan.

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

An illustration of the effect of varying a critical parameter, in this case price, is given below: –

Crop or Enterprise	Price	Gross Margin \$/ha
Wheat	\$100/tonne	\$300
(4.0t/ha Kopara)	\$120/tonne*	\$380*
	\$140/tonne	\$460
Barley		
(4.5 tonne/ha)	\$90/tonne	\$265
	\$105/tonne *	\$330*
	\$120/tonne	\$400
Field Peas		
(2.7 tonnes/ha Rondos)	\$130/tonne	\$ 85
	\$140/tonne*	\$111*
	\$160/tonne	\$167
Vining Peas		
(3.7 tonne at 110 reading)	\$100/tonne	\$215
	\$125/tonne*	\$307*
White Clover (sp.)	\$1.20/kg	\$225
(350 kg/ha M.D.)	\$1.40/kg*	\$295*
	\$1.50/kg	\$330
Ariki Ryegrass		
(1st yr pasture	\$0.40/kg	\$ 70
675 kg/ha M.D.)	\$0.43/kg*	\$ 90*
	\$0.60/kg	\$205
Cocksfoot		
(340 kg/ha M.D.)	\$1.50/kg	\$305
	\$2.00/kg	\$475
	\$2.40/kg*	\$610*
Pasture (Sheep Grazing)		
14 ee/ha	\$10.00/ee	\$108
	\$12.00/ee*	\$136*
	\$14.00/ee	\$164

(NOTE: * Marks current price and gross margin February 1978).

OTHER CROPS

Selected examples from Mrs Heather Taylor's gross margin analysis (1978)

1. Vining Peas

Gross Revenue (per ha)	\$
Av. tendrometer reading 110	
3.7 t @ \$124.99	462.43
Direct Costs	
Cultivation 6 hrs @ \$4.14/hr	24.84
Seed 270 kg @ \$16.00/50 kg	86.40
Fertiliser 250 kg/ha rev. super	
@ \$51.05/tonne (including cartage)	12.76
Spraying M.C.P.B. 5.6 l @ \$3.84/l	21.50
½ hr/ha @ \$4.14/hr	2.07
2 Irrigations @ \$3.85/irrigation/ha	7.70
TOTAL DIRECT COSTS	\$155.27
GROSS MARGIN	\$307.16

2. Garden Peas (William Massey contract)

Gross Revenue (per ha)	\$
Yield 3.4 tonne @ \$168/tonne	571.20
Direct Costs	
Cultivation 5.5 hrs @ \$4.14/hr	22.77
Seed 236 kg @ \$207/tonne	48.85
Fertiliser 250 kg Mo reverted super	
@ \$57.15 (includes cartage)	14.29
Spraying	14.26
Heading 3.5 hrs @ \$31.05/hr	93.15
2 Irrigations @ \$3.85 each	7.70
Cartage (full boxes) @ \$5.55/tonne	18.87
Box Hire \$2.50/box (1 box full = 1.225 tonne)	6.94
Box Cartage (empty) \$1/box	2.78
TOTAL DIRECT COSTS	\$229.61
GROSS MARGIN	\$341.59

3. Spring Wheat (Karama)

Gross Revenue (per ha)	\$
Yield 4.0 tonne @ \$120/tonne plus storage increment to 31st July \$6.75/tonne	507.00
Direct Costs	
Cultivation 6.5 hrs @ \$4.14/hr	26.91
Fertiliser 200 kg super phosphate @ \$53.80/ tonne	10.76
Seed 112 kg cert. 1st gen. @ \$210.00/tonne	23.52
Straw disposal	2.07
Heading ¾ hr @ \$31.05	23.29
2 Irrigations @ \$3.85/irrigation	7.70
Levies 46c/tonne	1.84
Cartage to silos \$1.77/tonne	7.08
Cartage silo to rail \$3.56/tonne	14.24
TOTAL DIRECT COSTS	\$117.41
GROSS MARGIN	\$389.59

4. Barley (Zephyr for malting)

Gross Revenue (per ha)	\$
Yield 4.5 tonne @ \$105/tonne	472.50
Direct Costs	
Cultivation 6.5 hrs @ \$4.14/hr	26.91
Seed 130 kg @ \$180/tonne	23.40
Fertiliser 200 kg super phosphate @ \$53.80/ tonne	10.76
Weed Spray M.C.P.A. 31/ha @ \$3.11/litre, plus 5 hrs @ \$4.14	11.40
Heading 1.25 hrs @ \$31.05/hr	38.81
2 Irrigations @ \$3.85 each	7.70
Cartage 32 km @ \$4.17/tonne	18.77
Fire Break .75 hr @ \$4.14/hr	3.11
TOTAL DIRECT COSTS	\$140.86
GROSS MARGIN	\$331.64

5.	Oil Seed Rape (contract)	\$
	Gross Revenue	
	Yield 2.8 t/ha @ 94% purity	
	price paid \$230/tonne	644.00
	Direct Costs	
	Cultivation 5 hrs @ \$4.14	20.70
	Pre-emergent spray (Trifluralin)	
	560 gm/ha @ \$15.80/kg	8.85
	½hr @ \$4.14	2.07
	Seed 5 kg @ \$1.00/kg	5.00
	Fertilizer 250 kg reverted super	
	@ \$51.05/tonne (including cartage)	12.76
	Nitrogen 250 kg sulphate of ammonia	
	@ \$101.56/tonne (including cartage)	25.39
	Insecticide	28.75
	Windrowing (contract) \$24.90/ha	24.90
	Own Header 1 hr @ \$31.05/hr	31.05
	2 Irrigations @ \$3.85 each	7.70
	Cartage \$4.17/tonne	11.68
	TOTAL DIRECT COSTS	\$178.85
	GROSS MARGIN	\$465.15
6.	Linseed (ex grass) (contract)	\$
	Gross Revenue (per ha)	
	Yield 2.35 tonne/ha @ 96% purity	
	price paid \$180.00/tonne	423.00
	Direct Costs	
	Cultivation 6 hrs @ \$4.14/hr	24.84
	Seed 50 kg @ 45c/kg	22.50
	Spray	14.75
	Fertilizer 200 kg reverted super	
	@ \$51.05/tonne (including cartage)	10.21
	Heading (own) 3.5 hr @ \$31.05/hr	108.68
	2 Irrigations @ \$3.85 each	7.70
	Cartage \$4.17/tonne	9.80
	TOTAL DIRECT COSTS	\$198.48
	GROSS MARGIN	\$224.52

7. Lucerne	\$
Establishment Cost	
Cultivation 13 hours @ \$4.14	53.82
Seed 12 kg/ha @ \$3.75/kg	45.00
Lime 2.5 t/ha @ \$9.30 On ground/tonne	23.25
Fertilizer 250 kg reverted super @ \$51.05/tonne	12.76
Inoculation	7.11
TOTAL	\$141.94
Estimated life of stand depends on usage.	
(a) Dry land Stand life = 9 years	
∴ Annual Establishment cost =	15.77
Annual Costs	
Fertilizer 250 kg lucerne fertilizer	
@ \$65.15 (includes cartage)	16.28
Spreading @ \$2.00/ha	2.00
Roll – 6h @ \$4.14	2.48
Weed spray	20.17
TOTAL COST (including establishment)	\$56.70
Revenue	
Yield 6000 kg dm/year = 11.54 ee/ha	
Return 1 ewe = \$12	
Return = \$12 x 11.54 =	138.48
GROSS MARGIN =	\$ 81.78
(b) Irrigated (for Dehydration)	
Stand life = 7 years	
∴ Annual Establishment Cost =	20.28
Annual Costs	
Fertilizer 300 kg lucerne fertilizer	
@ \$65.15/tonne (includes cartage)	19.54
Spreading @ \$2.00/ha	2.00
Irrigation 3 @ \$3.85 each	11.55
TOTAL COST (including establishment)	\$53.37
Revenue (Dehydration contract)	
4 cuts Total yield 13000 kg	
@ \$28.00/tonne	\$364.00
GROSS MARGIN	\$310.63

8. Cocksfoot Seed		\$
Gross Revenue (per ha)		.
450 kg F.D. yields 340 kg/ha M.D. @ \$2.40/kg		816.00
Direct Costs		
Average Renewal		20.70
Nitrogen 375 kg/ha s/a @ \$88.50/tonne		33.19
Windrowing @ \$24.90/ha		24.90
Heading 1.25 hrs @ \$31.05/hr		38.81
Sacks 17 @ 67c		11.39
Cartage 17 @ 46c		7.82
Spreading nitrogen 1.25 hrs @ \$6.90/hr		8.63
Consolidated handling charge 450 kg @ 12c/kg		54.00
Certification 2.2c/kg M.D.		7.48
TOTAL DIRECT COSTS		\$206.92
GROSS MARGIN		\$609.08

9. Potatoes (Ilam Hardy) 1976	\$ per tonne	\$ per ha
5.02 t Table potatoes	@ 50	251
10.04 t Seed potatoes (112 – 170 gms)	@ 100	1004
12.55 t Seed potatoes (57 – 112 gms)	@ 110	1380
1.26 t Table potatoes (28 – 57 gms)	@ 110	139
1.26 t Waste		–
30.13 GROSS REVENUE		\$2774.00
Direct Costs		
Cultivation – 10 hrs @ \$4.14/hr		41.40
Planting – 3 hrs @ \$6.00/hr (2 men plus machine)		18.00
Seed @ 3.7 t @ \$110/tonne		407.00
Cutting and dipping (22 bags)		2.00
Fertilizer – 625 kg bagged potato fertilizer (includes cartage) \$69.65/tonne		43.53
Weed and Pest Control – prometryne (1500 gm a.i./ha)		43.70
Aerial Spray – monocrotophos (800 gm a.i./ha)		19.32
Roguing		20.00
Haulm destruction – reglone (3 l/ha @ \$5.91)		17.73

Sacks 370 @ 50c	185.00
Digging 2.5 hrs @ \$2.76	6.90
Picking 370 sacks @ 35c	129.50
Grading 370 sacks @ 80c	296.00
Cartage to rail 370 sacks @ 50c	185.00
Levy – no charge in 1978	-----
Certification	12.00
Inspection (optional) 5.02 t @ 50c	2.51
TOTAL DIRECT COSTS	\$1429.59
GROSS MARGIN	\$1344.41

SHEEP GROSS MARGINS – R.H. Shelton (26/1/78)

- A. The example gross margin here is for a 2-year flock system, buying 2 year ewes annually and all going to fat lamb sire. Corriedale ewes mated to Dorset Down rams.

Production Parameters:

110% lambing, selling 105%, and 5% withheld for home killing, 10% of 1st year ewes culled. Death rate 5%. Ewes clip 4 kg per head. Lambs not shorn.

Gross Revenue (per ewe)

Lamb Sales: 1.05 lambs @ \$10.60 (Lamb price 13kg @ 64.2c/kg plus .75kg woolpull @ \$3.02)	11.13
Cull Ewe Sales: .462 ewes @ \$8.80 (Cull ewe 25kg @ 33.8c/kg plus .5kg woolpull @ \$3.08 less 12% for those downgraded)	4.06
Wool Sale: 3.94kg @ \$1.60/kg nett (Wool yield .89 sheep @ 4kg allowing for deaths. Wool price is gross less 15c/kg).	6.30
GROSS REVENUE –	\$21.49

Direct Costs

Replacement purchase .54 ewes @ \$14.00	7.56
Shearing (shearers only) .96 sheep @ \$32/100	.31
Tup crutch .46 sheep @ \$11.00/100	.05
Main crutching .99 sheep @ \$15/100	.15
Drenching Ewes receive two drenches, one pre-tupping and one pre-lambing: 2 drenches @ 9.7c/dose for .99 sheep	.19
Lambs 50% of lambs 1 drench and 30% 2 drenches lamb drench @ 3.9c/dose 4x6c	.03
Vaccination: triple vaccine, 98 @ 6.4c/sheep	.06
Eartags, footrot and docking	.11
Dipping: Allowing for purchased ewes having been dipped, .46 sheep @ 14c/sheep	.07

Cost of ram (2 per 100) 4 year life .005 @ \$50/ram	.25
Woolshed expenses including woolpacks, twine, glue, emery paper and shearing plant expenses – when all tallied are very close to 2c/kilo	.08
Cartage: Say cull ewe to works, .46 @ 28c	.13
Bought in ewe ex North Canterbury, .54 @ 55c	.30
Lambs to works, 1.05 @ 25c	.26
Wool, 3.94 kg @ .9c/kg (all cartage over 24 km except ewes purchased 80 km)	.04
TOTAL DIRECT COSTS –	\$ 9.59
GROSS MARGIN PER EWE –	\$11.90

In summary then, with revenue of approximately \$21.50 per ewe and expenses of \$9.50 per ewe, the gross margin is in the vicinity of \$12.00 per ewe in the fat lamb 2 year flock system. It is interesting to note that direct costs per ewe excluding the replacement cost, are approximately \$2.00/ewe.

The above gross margin of \$12.00 can also be regarded as the gross margin per ewe equivalent.

- B. Typical North Canterbury flock policy of selling genuine 5 year olds and breeding own replacements. Ewes on hand for 4 lambings.

Total flock to Corriedale ram. Culling hoggets at 2 tooth stage, being shorn as hoggets and not as lambs. 50% of wether lambs sold fat to works and 50% sold as stores.

Production Parameters:

Lambing 93%, deaths 5% and culls 5%. Ewes clip 4 kg per head.

Hoggets also clip 4 kg per head.

Gross Revenue (per ewe)

Lamb Sales, .23 lambs @ \$10.34	2.38
Store lambs, .23 lambs @ \$9.00	2.07
(fat lamb price 13kg @ 64.2c plus \$2.00 pelt)	
Cull ewe sales: Cull 2 tooth .15 @ \$15.00	2.25
5 year olds in yards .16 @ \$10.00	1.60
Cull ewes to works .08 @ \$9.00	.72

Wool Sale: .98 of ewe @ 4 kg/ewe	
i.e. 3.9 kg @ \$1.60 nett/kg	6.24
.45 ewe hoggets @ 4 kg/hogget	
1.8 kg @ \$1.70 nett/kg	3.06
GROSS REVENUE	\$18.32

Direct Costs

Shearing, .96 ewes @ \$32/100	.31
.45 ewe hoggets @ \$32/100	.14
Tup crutch, .99 ewes @ \$11/100	.11
Main crutching, .99 ewes @ \$15/100	.15
Drenching: Ewes receive 2 drenches as in previous example	.19
Lambs receive 3 drenches, .66 @ 12c	.08
Vaccination: Triple vaccine 1.44 @ 6.4/sheep (lambs also)	.09
Eartags, docking and footrot	.10
Dipping, 1 ewe @ 14c plus .67 lambs @ 13c plus .44 hoggets @ 12c	.28
Cost of ram (2 per 100, 4 year life) .005 @ \$65	.33
Woolshed expenses including woolpacks, twine, glue, emery papers and shearing plant expenses 5.7 kg @ 2c	.11
Cartage: 2 tooths & 5 year olds to yards, .31 @ 40c	.11
Cull ewes to works, .08 @ 72c	.05
Fat lamb to works, .21 @ 50c	.10
Store lamb to yards, .21 @ 60c	.12
Wool 5.7 kg @ 1.8c/kg	.10
(Mileages from North Canterbury @ 100 km)	
Stock selling charges. Yard fees 9c/sheep (.52 x 9c)	.05
Trucking fee 1c/sheep inward; Commission 3.5% of \$5.92	.21
TOTAL DIRECT COSTS	\$ 2.63
GROSS MARGIN	\$15.69

This gross margin is for a ewe replacement and thus to compare it on a gross margin per ewe equivalent basis we must divide the \$15.69 by the 1.3 ewe equivalents which results in Gross Margin/e.e. of \$12.07.

In summary then for the two sheep policies the gross margins per ewe equivalent for the breeding own replacement in North Canterbury is only 20c approximately greater than the gross margin per ewe equivalent for the plains fat lamb policy.

Last year the difference in profitability was approximately \$3.00 per ewe equivalent.

The factors which will have the greatest effect on the above gross margins are:

- (a) Lambing percentage
- (b) Wool clip per head
- (c) Lamb sale price (slight reduction from previous year)
- (d) Cull ewe prices (Significant reduction from previous year)
- (e) Wool price (significant reduction, 20–25% from previous year).

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

GROSS MARGIN PER EWE EQUIVALENT:

	1974/75	1975/76	1976/77	1977/78	% Change (from last yr)
Fat Lamb	\$7.80	\$ 8.70	\$13.40	\$11.90	-17%
Breed own replacements	\$5.90	\$11.00	\$16.77	\$12.07	-28%

The North Canterbury type policy shows wider fluctuations in the gross margins than the fat lamb type policy. The fat lamb producer is able to work on a margin for purchase and sale of ewes whereas the store sheep farmer has no such margin available.

PIG PRODUCTION – FINANCIAL (P.M. Kaye 23.1.78)

The majority of pigs produced in New Zealand are now all meal fed, based on grain from the South Island and Waikato. With the increasing costs of grain and protein and no related increase in pig meat prices in the last year, profitability has decreased markedly. This trend which is likely to continue has inevitably led to more intense and efficient production. The Pork Marketing Board has set a basic minimum price to maintain the viability of pig production. C.F.M. operate at this schedule set out below:

1) Baconers

C.F.M. SALES

Division of the CANTERBURY FROZEN MEAT Company Ltd.

Pig Schedule

Effective as from 5th January, 1978

Weight ranges and payments based on "hot" scale weight

Head-on-Feet-on.

Hot Weights		Cents per kg	
45.5/70 kg	Prime	106	
	Choice	96	
	Standard	77	
	Mutilated	72	
70.5/83 kg	Prime	73	
	Choice	63	
	Standard	51	
	Mutilated	44	
2) Pork			
	27.5/45 kg	Prime	95
		Choice	85
		Standard	70
Mutilated		61	
Choppers		22	
Condemned carcasses		NO VALUE	

Deductions

Pig Council Levy	80.0 cents per pig
Federated Farmers Levy	.5 cents per pig
Inspection Fees	81.3 cents per pig
	161.8 cents per pig

Because of the low schedule for pork the majority of pork is sold for the fresh meat trade where returns are considerably higher.

Most weaners and stores are sold between farmers by private contract with prices based on the schedules for slaughter pigs; breeding stock are marketed similarly with premiums for stock with a Performance Testing background. A limited number of all classes of stock are sold at auction through saleyards.

GROSS MARGIN ANALYSIS

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

Below are three Gross Margins which give some indication of the cash surplus for each enterprise:

Assumptions:

(a) Physical

- (i) Sow productivity – 15 pigs weaned per sow per year.
- (ii) Average weight of weaners – 18 kg L.W.
- (iii) F.C.R. Bacon 3.3:1 to 82 kg L.W.
 Pork 3.0:1 to 53 kg L.W.
- (iv) Dressing out percentage – 75%.
- (v) Post weaning mortality – 3%.
- (vi) Grading Prime 60%
 Choice 30%
 Standard 10%
- (vii) Stock Replacement – 33% sow per annum.
 Sow/Board ration – 30:1.

(b) Financial

- (i) Pig meat returns at schedule rates.
- (ii) Feed Cost – Breeder Meal – \$135 per tonne
 - Creep Meal – \$200 per tonne
 - Grower Meal – \$140 per tonne

GROSS MARGINS

(1) Weaner Production	\$
Return	
Sale 15 weaner at \$20.24	303.60
less breeding stock	<u>37.00</u>
	266.60
Variable Costs	
Food	
Sow 1.1 tonnes	148.50
Boar 0.05 tonnes	3.37
Creep at 16kg/weaner	45.60
Veterinary and Medicines	6.00
Repairs and Maintenance	16.00
Miscellaneous Expenses (power etc.)	<u>10.00</u>
	TOTAL VARIABLE COSTS 229.47
	Gross Margin per sow 37.13
	Gross Margin per weaner 2.48
(2) Pork Production	
Returns	
38kg pigmeat at 89.5 cents per kg	34.00
Less weaner	20.24
Less cartage and levy	2.75
Mortality at 2%	<u>.68</u>
	TOTAL RETURN 10.33
	Food 35kg gain at 3.0:1 at 14 cents per kg 14.70
	Veterinary and Medicines .60
	Repairs and Maintenance 1.00
	Miscellaneous Costs <u>.60</u>
	TOTAL VARIABLE COSTS 16.90
	GROSS MARGIN Deficit per porker 6.57

(3) Bacon Production

Returns	\$
Sale 62 kg meat at 100.1 cents per kg.	62.02
less value of weaner	20.24
less levy and transport	2.85
Mortality at 3%	<u>1.86</u>
TOTAL RETURN	37.11
Food 65 kg gain at 3.3:1 at 14 cents per kg	30.03
Veterinary and medicines	1.00
Repairs and maintenance (2% of capital value)	1.20
Miscellaneous cost	<u>1.00</u>
TOTAL VARIABLE COSTS	35.38
GROSS MARGIN per baconer	3.88

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

(a) Pig Meat Prices

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

(b) Feed Costs

Feed is the most significant cost in pig meat production. Cost can be reduced by contract buying grain and home mill and mixing. However, it is essential that the quality of feed is not reduced particularly in protein content as this will affect F.C.R.

(c) F.C.R.

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

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

(d) Breeding performance

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

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

(e) Grading

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

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

(f) Average Daily Gain

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

The effect of a change of 10% on any of the parameter is illustrated below:

Assume an average F.C.R. of 3.3:1 over 65 kg gain

Feed cost at \$140 per tonne

Grading profile of 60:30:10

Pig meat return of 100.1 cents per kg

15 weaners per sow per year

Cost of the weaner is \$20.24 and other costs e.g. Veterinary and repairs and maintenance are taken as \$7.91 in each example.

A.	Return for Pig Meat	Gross Margin	Change in Margin
	100.1c per kg	3.88	
	90 c per kg	-2.38	6.14
B.	Change in Feed Cost		
	\$140 per tonne	3.88	
	\$126 per tonne	6.88	3.00

C.	Change in F.C.R.		
	3.3	3.88	
	3.0	6.61	2.73
D.	Change in Grading Profile		
	60.30.10 = 100.1c per kg	3.88	
	54.36.10 = 99.5c per kg	3.51	0.37

From this example it can be seen that Return for pig meat is the single most important factor. Unfortunately the producer has little control over both meat prices and feed cost so he is better to concentrate on breeding performance and F.C.R. to increase his profitability.

NOTES ON THE MARKETING OF BEEF CATTLE

A.R. McIvor 9.2.76

The livestock market in New Zealand is divided into three main sections. These are (a) store sales between farmers of breeding or fattening stock, (b) schedule sales of stock to freezing companies for export to World Markets, (c) local trade sales of prime quality stock to butchers for sale to New Zealand consumers. Each of these main markets, though operating on different supply and demand schedules, is related to the other and tends, even if for only short periods in some instances, to be influenced by demand from the other sections of the market.

Factors Influencing Store Sales

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

1. General profitability of finishing or breeding from the class of stock concerned at the current schedule or local trade price levels. In cases of forward stock, schedule values can virtually under-write the sale, setting minimum price levels.
2. Trend of schedule or local trade prices and the effect of probably changes on forecasting profit margins.
3. Availability of feed, and effect of climate conditions on feed. Generally New Zealand does not experience prolonged periods of drought on feed shortage, and depression of stock prices tends to be transitory frequently affecting sale values for only a part of the season.
4. Availability of finance and credit.
5. The level of confidence for say beef, sheep or dairying by the farming community and the people who service agriculture.

Factors Influencing Schedule Values

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

1. World Market conditions – supply and demand and price trends.
2. Tariffs or quotas.
3. Shipping and killing charges.
4. Time and place of sale.
5. Industrial unrest and effect of stoppages.

6. To a limited extent competition between local trade and exporters for fat stock may for short periods inflate schedule values. In general during the winter and early spring little or no fat cattle are sold for export.

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

Factors Influencing Local Trade Values

Approximately 30% of all beef slaughtered is consumed in New Zealand. In the South Island because of the lower cattle population relative to people, about 50% of all cattle slaughtered are used for local trade. It is suggested however that up to 60% of all prime beef is consumed within N.Z. Most of this stock is bought by buyers for butchers either on the farm or in the fat pens at sale yards. i.e. about 50% of the Christchurch beef requirement is bought through Addington with the remainder bought privately on farms or supplied to the Freezing Company. In some instances exporting companies buy stock for wholesale to butchers. In periods of shortage of fat cattle, practically all prime quality beef is bought for local consumption at values above export schedule. Thus the supply demand schedule for local trade works independent to the export schedule. Practically all fat stock in winter and early spring being bought for local trade with peak prices usually in October. Once feed supplies ease and most farmers are able to produce fat stock, the supply exceeds local trade requirements and price levels fall to export schedule values.

The influence of local trade buying is greatly affected by seasonal conditions. In general local trade begins to have an effect on fat stock prices in May, but in periods of shortage may begin in March or conversely as late as July. October appears to be the peak month with demand influence falling rapidly in November and December. Local trade values usually range from 5 cents/kilo of carcase above schedule for winter months to 5-10 cents/kilo above schedule in October. Usually stock are bought by eye assessment of weight and it is an advantage to know actual live weight when selling in the paddock. A further point to note is that abattoir weights are taken when the carcase is hot, and includes the channel fats which can increase the killing out percentage by 2% over export weight.

Forecasting of Future Beef Cattle Values for Budgetary Purposes

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

Table 1 **MEAT OPERATIONS SCHEDULE**
Price Ox 221 - 270 kg in c per kg
SOUTH ISLAND

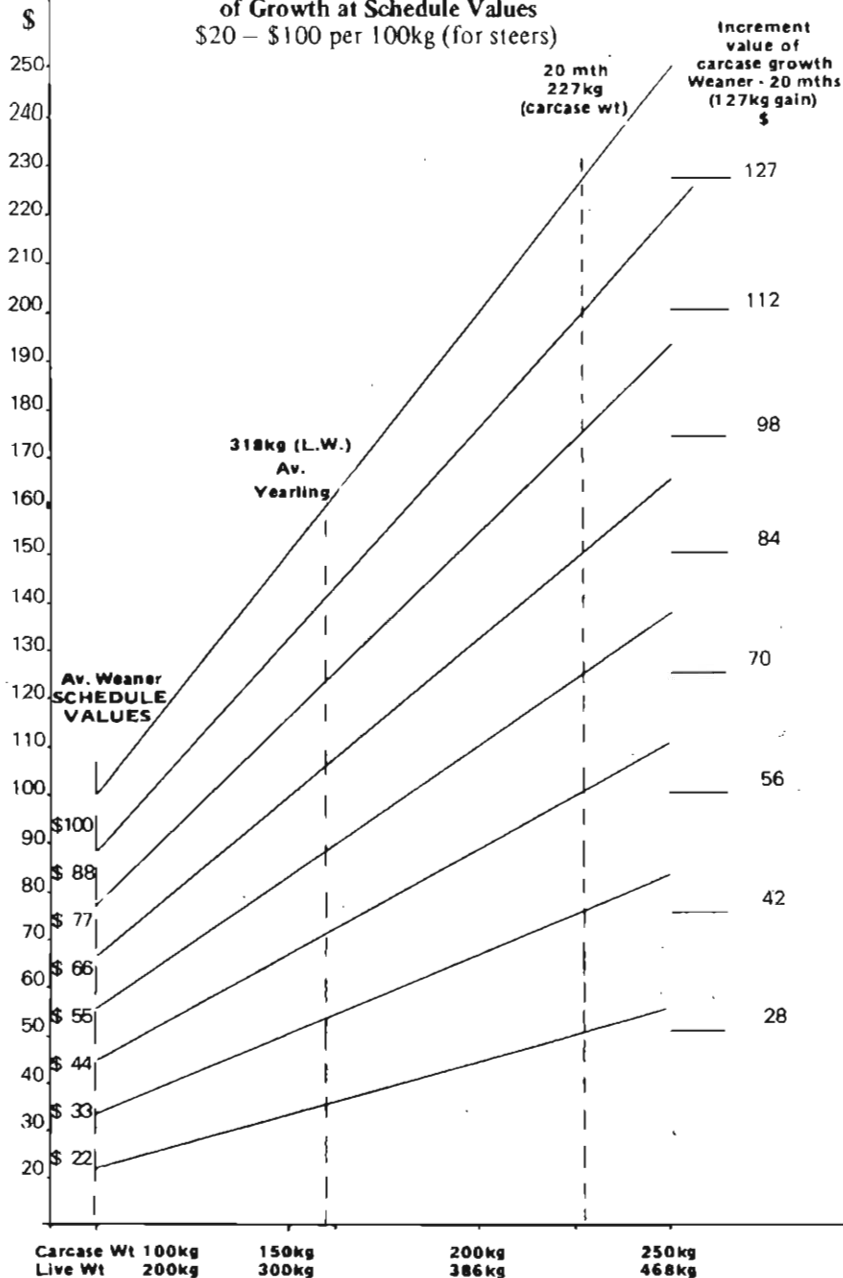
	GAQ			1974	CHILLER			
	1971	1972	1973		1975	1976	1977	1978
January	52	50	71	74	29	55	62	57
February	54	50	73	72	29	55	67	59.5
March	54	52	80	65	29	55	63	
April	54	53	73	54	39	55	59	
May	54	53	71	51	39	55	59	
June	55	56	69	41	—	55	57.5	
July	56	—	—	45	—	55	57.5	
August	51(YAQ)	56	—	45	—	55	57.5	
September	51(YAQ)	56	—	39	—	55	57.5	
October	48(YAQ)	56	—	38	55	55	57	
November	—	63	76	35	55	55	57	
December	53	63	78	31	55	56	57	

(fig 1)

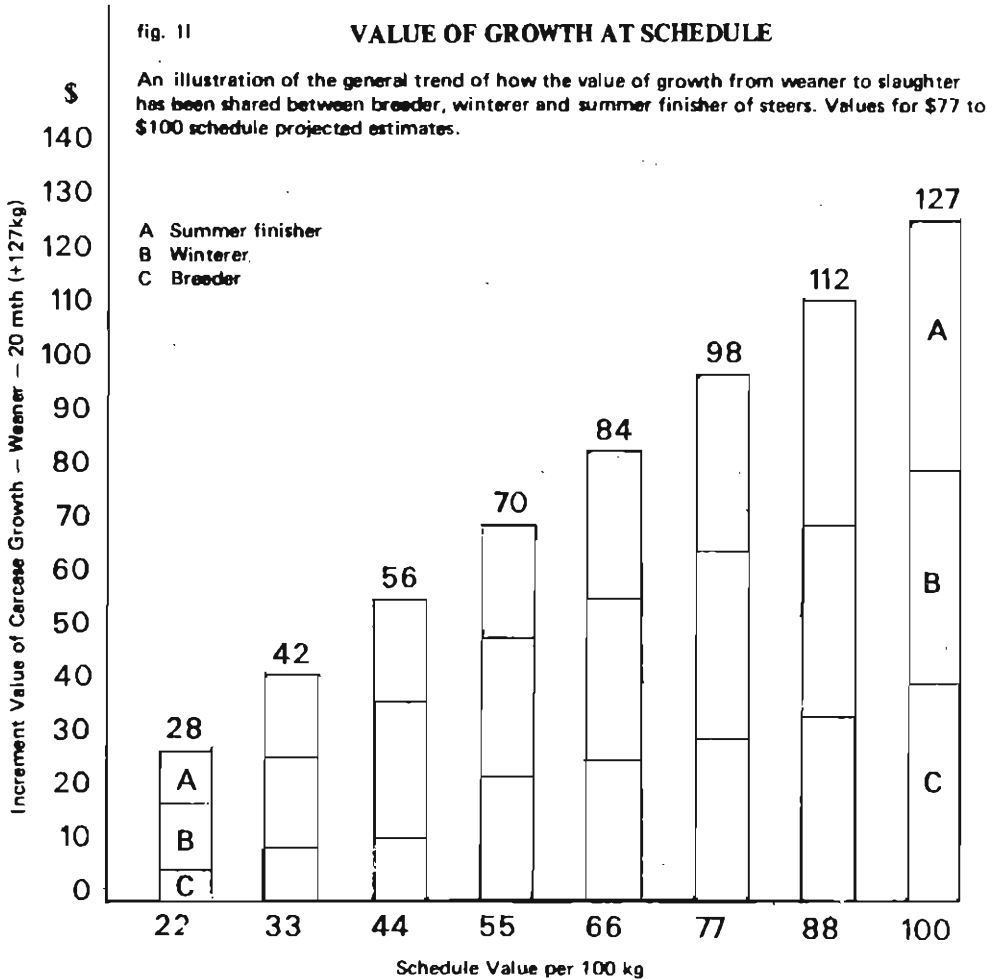
Figure 1 illustrates the growth in value of a weaner to slaughter at 20 months at export values ranging from \$22 to \$100 per 100 kg of carcass. The killing out percentage is assumed at 50% until yearling, increasing to 53% at 20 months. The figure not only shows the growth in the basic value of the 200kg. (L.Wt) weaner with increased schedule prices, but also the marked increase in the value of the additional weight grown between weaner and 20 month (127 kg carcass weight).

fig 1

**Value of Cattle Carcase Weight at Different Stages
of Growth at Schedule Values**
\$20 – \$100 per 100kg (for steers)



Historically purchases of store weaners and yearlings for fattening on grass have paid a premium over export schedule values. This premium has fluctuated from year to year and is influenced by both the schedule value and the demand for stock due to availability of feed. The division of the value of the growth increment is shown in Fig. II.



The questions which a forecaster will ask himself are:

1. What is the likely schedule value for the season, and what does the average buyer expect it to be.
2. How much profit did cattle finishers make last year, and what will they expect this coming year.

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

To assess likely prices for store cattle, one needs to consider both the effect of schedule prices and the likelihood of the sharing of the growth increment. For 1978 the position is likely to be as follows:

Value of weaner (100 kg carcass @ \$57)	\$57
Growth Increment share Nil – \$5	\$ 5
Price for Av. Weaner steer (200 kg L. Wt.) or 31c kg L.W. (62c kg carcass)	\$62

Value of yearling (160 kg carcass @ \$57)	\$91
Growth Increment share Nil – \$5	\$ 5
Price for Av. yearling steer 320 kg L.W. or 30c kg L.W. (60c kg carcass)	\$96

Value of 20 month steer (227 kg carcass @ \$57) –	\$130
Value of 20 month steer (219 kg carcass @ \$51) –	\$112

Summary:

		Margin
Price to store breeder	\$60	
Price as yearling	\$62	\$34 for winter
Price as 20 month fat	\$96	\$34 for summer
Price as 20 month fat (under 220 kg carcass)		\$16 for summer

NOTE:

Due to the increased schedule above 220.5 kg it is essential that the summer cattle farmer achieves maximum growth rates. This will ensure the carcass falls in the higher schedule payment range (16.00 – \$34.00 return).

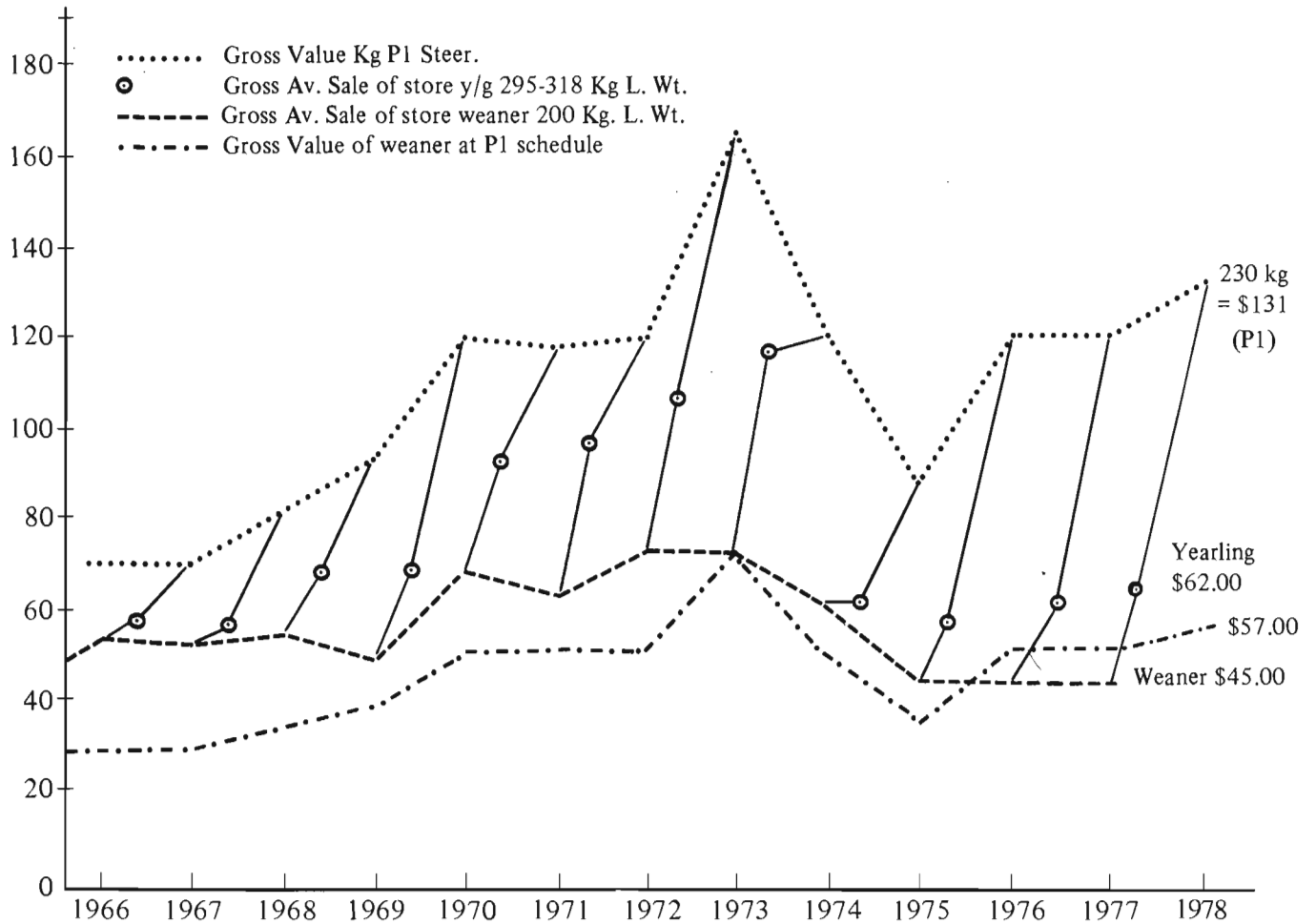


Fig III The generalised historical trend of growth income for Av. Weaner Steers to subsequent slaughter on schedule P1 grade at 20 mth as shared between breeders, winterers and summer fatteners.

Store Cattle Values – Addington

Table 11

Weaner Steers April

Year	Good	Medium	Small	Av Price Pd Carcase Kilo	Differential G.A.Q. Schedule (P1 Schedule)
1963	\$ 45	—	21	33c	+ \$ 7(26.40)
1964	\$ 45	—	16	33c	+ \$ 7(29.80)
1965	\$ 57	—	26	37c	+ \$ 8(31.90)
1966	\$ 61	—	49	44c	+ \$11(31.30)
1967	\$ 58	—	48	41c	+ \$12(31.90)
1968	\$ 64	—	50	67c	+ \$10(37.40)
1969	\$ 58	—	44	41c	+ \$ 6(41.80)
1970	\$ 80	70	50	67c	+ \$16(54.30)
1971	\$ 75	65	54	61c	+ \$ 9(54.00)
1972	\$ 90	75	60	75c	+ \$22(53.00)
1973	\$ 90	75	60	79c	+ \$ 0(74.8c)
1974	\$ 75	63	40	60c	+ \$ 9(54.00) Chiller Grade
1975	\$ 55	45	30	43c	+ \$ 6(39.00) Chiller Grade
1976	\$ 55	45	30	43c	- \$12 (55.00)
1977	\$ 55	40	25	40c	- \$17.50 (57.5) P1

1977 Figures shown in brackets is P1 schedule for the period expressed in the C per kilo.
Differential based on 200 kilo live weight with carcase at 50%.

Table 111

Weaner Heifers April

Year	Good	Medium	Small	Av Price per Carcase Kilo	Differential to G.A.Q. Schedule (P1 Schedule)
1963	\$ 41	—	17	33c	+ \$6
1964	\$ 38	—	15	26c	+ \$3
1965	\$ 37	—	28	31c	Nil
1966	\$ 55	—	39	46c	+ \$15
1967	\$ 43	—	35	37c	+ \$ 5
1968	\$ 57	—	46	42c	+ \$ 4
1969	\$ 45	—	33	36c	- \$ 6
1970	\$ 65	55	35	53c	Nil
1971	\$ 67	57	42	57c	+ \$ 4
1972	\$ 80	70	50	68c	+ \$18
1973	\$ 75	60	45	66c	+ \$ 6
1974	\$ 60	50	35	53c	- \$2
1975	\$ 40	30	15	31c	- \$8
1976	\$ 40	30	15	31c	- \$14
1977	\$ 40	25	15	31c	- \$14

Differential based on 190 kilo live weight weaner carcase at 50% of live weight.

Table 1V
Yearling Steers October

Year	Good	Medium	Small	Av. Price per Carcase Kilo	Differential to G.A.Q. Schedule (P1 Schedule)
1963	\$ 60	--	30	31c	+ \$6 (53.0)
1964	\$ 54	--	35	29c	+ \$5 (32.0)
1965	\$ 70	--	54	42c	+ \$14 (32.0)
1966	\$ 68	--	48	37c	+ \$9 (31.0)
1967	\$ 65	--	50	37c	+ \$17 (28.0)
1968	\$ 90	70	65	50c	+ \$15 (40.0)
1969	\$ 82	--	60	48c	Nil (48.0)
1970	\$120	95	80	64c	+ \$22 (49.0)
1971	\$120	100	85	68c	+ \$23 (53.0)
1972	\$125	110	95	70c	+ \$23 (56.0)
1973	\$140	120	100	82c	+ \$ 9 (76.00)
1974	\$ 85	67	45	43c	+ \$ 6 (38.00) Chiller grade
1975	\$ 75	60	40	39c	- \$15 (55.00) " "
1976	\$ 80	60	40	39c	- \$15 (55.00)
1977	\$ 85	65	45	42c	- \$23 (57.00)

Differential based on 310 kilo live weight with carcase at 50%. Figures in brackets are P1 schedule ruling at the period expressed in c per kilo.

Table V
Yearling Heifers October

Year	Good	Medium	Small	Av. Price per Carcase Kilo	Differential to G.A.Q. Schedule
1963	\$ 58	--	40	40c	+ \$18
1964	\$ 46	--	30	31c	Nil
1965	\$ 48	--	40	35c	+ \$4
1966	\$ 64	--	49	44c	+ \$15
1967	\$ 55	--	47	40c	+ \$18
1968	\$ 64	--	52	44c	+ \$5
1969	\$ 66	--	53	46c	- \$2
1970	\$110	100	75	75c	+ \$35
1971	\$111	100	77	75c	+ \$30
1972	\$110	95	70	70c	+ \$24
1973	\$110	90	60	69c	+ \$ 6
1974	\$ 55	45	35	35c	- \$ 2
1975	\$ 55	40	30	31c	- \$31
1976	\$ 70	50	40	38c	- \$12
1977	\$ 70	50	40	38c	- \$22

Differential based on 260 kilo liveweight with carcase at 50% of live weight.

Table VI**Range of Values for Heifers & Cows**

	Unmated Heifers.		Cows	
	1½ Yr April	2 Yr Oct.	April	Oct.
	\$	\$	\$	\$
1963	40-56	79-81	38-45	23-50
1964	38-59	47-54	20-57	-39
1965	40-60	73-79	46-62	-61
1966	52-62	72-93	70-79	-61
1967	60-70	69-74	60-77	75-80
1968	67-74	70-106	78-92	-82
1969	54-62	84-110	58-70	-71
1970	80-85	85-110	84-117	-110
1971	80-90	110-150	85-130	100-130
1972	80-90	90-145	90-140	116-120
1973	100-140	120-165	110-180	120-150
1974	65-120	60-110	65-140	50- 90
1975	55-65	45-70	25-60	40-60
1976	60-65	70-110	50-80	70-110
1977	50-65	70-100	40-60	70-100

Table VII**Export Slaughtering of beef for South Island**

Cumulative monthly totals and average carcase weight for steers and heifers.

1 Yr and Older.

Month	1972/73		1973/74		1974/75		1975/76	
	No.	Av.Wgt	No.	Av.Wgt	No.	Av.Wgt	No.	Av.Wgt
Oct.	856	249	829	232	1124	273	15051	250
Nov.	2589	251	2764	233	4596	261	29685	258
Dec.	8467	254	8688	233	11192	259	44790	258
Jan.	17325	252	17491	231	20347	251	75540	256
Feb.	38599	241	33917	230	38905	244	106538	252
Mar.	75248	230	62791	225	72994	239	147483	248
April	99904	227	84463	222	91970	237	175444	245
May	127627	223	108769	220	121427	235		
June	139038	222	116806	220	147536	233	245709	239
July	140213	222	117406	219	153801	234	268561	237
August	141729	222	117894	220	154733	234	275414	237
Sept.	143065	222	118947	219	154766	234	275857	237

Table V111**Average Carcase Weight, South Island.**

	Steers & Heifer	Cows	Bulls	Vealers	Calves
1972/73	222	188	242	126	16.4
1973/74	220	191	245	112	17.3
1974/75	234	201	258	60	17.8
1975/76	253	180	247	81	16.25
1976/77	254	183	261	89	15.99

Reference: N.Z. Meat Producer Board.

Table 1X

Estimated Average Gross Profit in rearing steers, purchased at weaner and yearling for fattening with sale at GAQ export schedule during the subsequent autumn carcase weight 230 kilo (506lb). Note 1974 and 1975 based upon Chiller Grade.

Year	Av. Weaner Purchase	Av. Yearling Purchase	20 mth at GAQ	Gross Profit from Weaner	Gross Profit from Yearling
	\$	\$	\$	\$	\$
1963	30	45	67	37	22
1964	30	45	72	42	27
1965	40	62	70	30	8
1966	55	58	72	17	14
1967	54	58	85	31	27
1968	57	70	95	38	25
1969	51	71	124	73	53
1970	70	95	120	50	25
1971	65	100	122	57	22
1972	75	110	168	93	58
1973	75	120	124	49	4
1974	63	65	90	27	25
1975	45	60	126	81	66
1976	45	60	126	81	66
1977	40	65	130	90	65

- a) Though valuation and estimates of sales are given in discreet figures, it should be appreciated that a range of prices will be paid for equivalent beasts, within any sale and that gross profit will vary accordingly.
- b) 1963-70 Valuations of stock supplied by courtesy of State Advances Corporation, remainder through published sales in the Christchurch Press.
- c) 20 month PI values taken at subsequent autumn to weaner and yearling sales.
- d) Note – due to variable weather affecting food supply, cattle values have fluctuated markedly between the Autumn and Spring.

Table X

THE ANTI-BURBY SALE YARDS CO. LIMITED

Monthly Yardings

	Fat Sheep	Fat Lambs	Store Sheep	Baconers	Porkers & Choppers	Store Pigs	Fat Cattle	Store Cattle	Dairy Cows	Calves Vealer
1973										
Jan.	14479	4769	102398	6	1345	1835	1485	4253	81	1438
Feb.	11997	5817	111223	5	813	1367	1318	2454	77	1159
March	6388	5272	51265	72	1028	2379	1089	7099	114	1183
April	5575	5054	26135	45	745	1569	1278	12541	112	891
May	5875	11097	22946	27	1385	2935	1577	11330	164	1149
June	3608	11111	17282	86	891	1316	1131	3219	134	691
July	5039	14869	11595	124	848	2384	1685	3136	115	1036
Aug.	4469	8194	6020	77	599	1710	1341	2433	96	1271
Sept.	5534	8520	9807	147	676	2601	967	3752	67	1313
Oct.	8410	10565	15503	129	838	3412	1802	11011	81	1539
Nov.	7438	2727	9696	315	667	2235	1039	3339	53	967
Dec.	7811	3861	20017	90	830	1733	1220	3898	45	820
	86623	91856	403887	1123	10665	25476	15932	68465	1139	13457
1974										
Jan.	11957	4097	91555	65	996	2486	1471	2643	71	1270
Feb.	8189	3476	101917	36	805	2164	939	1874	48	1064
March	6746	7747	82747	14	961	2719	1176	6102	64	1033
April	8402	10465	35406	39	1107	2697	1669	15735	99	1084
May	4502	7860	13958	86	1043	2087	1962	7098	61	696
June	5238	9210	8170	98	808	1900	1561	2496	82	562
July	4958	8868	7346	171	1007	2893	1574	1363	100	701
Aug.	5133	8198	6186	87	822	2551	1679	2016	196	1007
Sept.	7542	8272	5749	90	882	3562	1668	2395	159	770
Oct.	7434	9684	7204	281	731	3667	2747	5828	83	1304
Nov.	10149	3422	5349	118	901	2240	2144	3358	49	913
Dec.	6569	33448	7047	42	624	1958	1444	2227	29	393
	86819	84747	372634	1127	10687	30924	20034	53135	1041	10797
1975										
Jan.	6484	3032	41269	76	1155	2683	1625	2427	122	753
Feb.	7683	4521	103125	36	657	1851	1459	1379	100	665
March	5450	4258	61000	60	716	2400	2069	4013	109	828
April	8412	9604	31132	164	915	2728	2721	18824	86	763
May	4964	6692	11335	111	756	2220	2174	5751	103	761
June	5527	5646	5974	34	605	1666	2060	3391	71	504
July	5378	10778	8258	51	682	1979	2669	1422	95	607
August	4416	6405	3642	64	884	2161	2282	2632	106	592
Sept.	6778	11161	6390	27	991	3398	2682	5950	147	1003
Oct.	9405	4490	4372	101	673	2242	2175	4367	110	683
Nov.	7887	3584	3703	116	663	2287	2102	3477	87	901
Dec.	6356	3455	19221	207	846	2011	1750	2884	41	576
	78740	73626	299241	1047	9543	27626	25768	56517	1177	8636

	Fat Sheep	Fat Lambs	Store Sheep	Porkers Baconers & Choppers		Store Pigs	Fat Cattle	Store Cattle	Dairy Cows	Calves & Vealers
1976										
Jan.	6338	5234	53019	47	810	1838	2087	4135	113	776
Feb.	7022	5266	131457	29	631	1925	2096	2290	84	817
March	9355	6586	82640	172	732	3160	2398	8475	56	974
April	3458	5067	15200	89	766	1737	1749	16111	88	688
May	4891	6649	8508	76	859	2322	2422	6225	63	622
June	4514	8167	8361	124	669	2186	2945	3354	40	718
July	3396	8798	8053	13	553	1844	1749	1431	52	546
Aug.	3192	6092	6321	26	592	2100	1566	1461	49	537
Sept.	6108	5459	7615	37	509	2585	1494	3182	54	602
Oct.	4620	7170	8509	96	533	2525	1805	5121	24	636
Nov.	11384	4017	9500	70	501	3258	2673	5427	45	934
Dec.	4658	3515	17133	9	508	1776	1396	960	13	507
	68936	72020	356316	788	7663	27357	24380	58172	681	8357
1977										
Jan.	4382	1817	42975	56	449	2183	2142	6151	38	767
Feb.	8019	4359	120431	90	569	2112	2453	4282	61	734
March	8643	6766	80190	204	743	3170	2571	7283	42	961
April	4773	5266	19257	56	536	2256	1498	11683	26	519
May	4031	7465	12562	57	1025	2986	2646	9149	48	820
June	3533	7066	9411	23	662	1739	1696	2421	28	591
July	2632	8339	6221	16	693	1634	1588	879	20	550
Aug.	3891	8823	11226	36	648	3134	2279	1904	47	628
Sept.	5611	7133	7545	15	687	2624	2130	3106	28	549
Oct.	5244	7758	7127	45	494	2360	1892	3313	8	484
Nov.	12715	5518	12505	59	820	3100	2868	6012	12	809
Dec.	7355	3145	15736	54	676	1600	1573	1256	20	485
	70829	73455	345186	711	8002	28898	25336	57439	378	7897

Christchurch Meat Consumption and Stock available through Sale Yards.

Christchurch population 292,500 as at April, 1974.

Table X1

Annual Meat Consumption (bone in) per capita for N.Z. population

	Capita*	Av. Carcase Wgt.	Annual	Month
Beef	45.0	270.0	48,750	4,060
Veal	3.0	108.0	9,750	812
Mutton	31.0	23.0	394,240	32,850
Lamb	9.1	13.0	266,175	22,180
Pork	6.4	36.4	51,420	4,285
Bacon	6.8	55.0	36,160	3,010
Fish	5.0	—	1,460 tons	122 tons

Monthly yardings of fat and store stock at Addington, supplied by courtesy of The Canterbury Sale Yards Co.

Gross Margin Analysis for Beef (26.1.78)

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

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

Policy No. 1:

Breeding from cows and 14 month heifers. All weaners except replacements sold in April as store.

128 cows 24 in-calf heifers
95% calving from cows, 80% from heifers
2% deaths

Capital Stock

128 cows	at 6	E/E	=	768 at \$ 90 per head =	\$11,520
24 in-calf heifers	at 5	E/E	=	120 at \$ 90 per head =	\$ 2,160
25 weaner heifers	at 3.5	E/E	=	88 at \$ 40 per head =	\$ 1,000
4 bulls	at 6	E/E	=	24 at \$250 per head =	\$ 1,000
181			=	1000	\$15,680
			Per E/E =	\$15.68	

Income

70 weaner steers	at \$60	=	\$ 4,200	
46 weaner heifers	at \$40	=	\$ 1,840	
5 2 Yr heifers	at \$80	=	\$ 400	
16 cull cows	at \$70	=	\$ 1,120	
1 bull	at \$80	=	\$ 150	\$ 7,710

Expenditure

Bull purchased, landed at \$500		\$ 500
Freight on sale stock		\$ 525
Animal Health		
Drench 25 weaners 2 x 30c	15	
Spray 181 cattle at 40c	73	
Preg. test 128 cows at 50c	64	\$ 152
Commission on sale stock 6¾% \$6,400		\$ 432
Yard fees 40c 121 hd.		\$ 48
Direct Costs		\$ 1,657

Gross margin before interest & feed cost	\$ 6,053
Gross margin per E/E	\$ 6.05
Per hectare at 8 E/E	\$ 48.4
As % of Capital in Stock	38.6%

Policy 2:

Purchase of medium weaner steers in April, sold at 20 months of age at an average carcase weight of 230 kilos. Death rate 2%.

Capital Stock

250 Weaner steers & 4 E/E	=	1,000 E/E	=	\$ 60	=	\$ 15,000
		Per E/E		\$ 15		

Income

245 Steers	at 230 kg	at 57c kg. av. value		
		\$131 per head		\$ 32,095

Expenditure

250 weaner steers at \$64 landed	16,000
Freight on sale stock at \$4 hd	980

Animal Health

Drench 2 x 30c	145	
Spray 2 x 20c	100	
Bloat	25	270
Direct Costs		\$17,250
Gross margin before int or feed		\$14,845
Gross margin per E/E		\$14.84
Per hectare at 8 E/E		\$118.80
As % of capital in stock		99%

Partial Budgeting for Beef

Interest and Feed Costs

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

However due to the high capital requirements and the fact that in most instances borrowed capital is involved necessitating loan servicing (15% compounded from 1.1.78 if on current account with the stock firm) a partial budget approach is normally adopted, and includes estimates of interest and feed costs in order to provide a more accurate indication of actual returns.

Feed costs can be ignored where there is no change in the supplementary feed required to implement a cattle policy in place of a sheep alternative. Where there is a change however, all additional supplementary feed costs, should be included. There is a trend towards greater supplementing of beef cattle with hay, grain and green feeds and co-operative ventures involving grazing contracts. It should be noted that the opportunity to supplementary feed beef profitability increases with the increase in price per kilo of carcase. Of the variable costs related to beef enterprises, the most variable excluding the purchase price of replacement stock, and frequently the most critical cost is feed cost. Partial budget examples of policies 1 and 2 including interest at 15% and feed costs. Normally, capital stock would not be financed on current account. However, as interest rates increase the effect on profitability is interesting to note.

Policy 1

Gross margin before interest & feed cost			\$ 6,053
Less: Interest on capital in stock at 15%			
on \$15,680 for 1 year			
(@ 9% = \$1,411)	\$ 2,352		
Feed Costs			
152 cows and heifer, hay 1 bale			
to 5			
for 120 days – 1600 bales			
25 weaner heifers, hay 1 bale			
to 7			
for 120 days – 370 bales			
Total hay including bulk reg.			
say 2000 bales at 42c	= \$ 840		\$ 3,192
Gross margin after interest & feed			
Return per ewe equivalent	\$ 2.86		
per hectare	\$ 22.88		
As % of Capital in stock	18.25%		

Winter Feeding Costs

North Island:

Grass wintering 5 weaners per hectare of A.S.P. + 1 bale hay to 10 weaners.

Grass wintering 5 weaners per hectare of A.S.P. + 1 bale hay to 10 weaners per day for 60 days = 6 bales per head.

Chou moellier 15 - 18 weaners per hectare plus some hay – up to 1 bale to 10 weaners per day.

Cows – pad feeding beef cows 1 bale to 4 cows meadow hay per day as a complete ration.

Grazing charges vary from season depending on availability of surplus roughage.

Surplus years – 35 cents per head per week.

Good grazing – 65 cents per head per week.

Winters following drought – 65 cents to \$1.00 depending on quality and availability.

South Island:

Hay and grain feeding 100 days.

Weaner steers – full hay ration 1 bale to 7 weaners (5 kilo hay).

– hay plus grain 1 bale to 9 plus 4 lb grain (4 kilo hay)

– Turnips, hay and grain 1 bale to 10 weaners plus 2 kilo grain while wintering at 18 beasts per hectare of turnips.

Winter Growth Rates

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

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

North Island: All grass or grass plus hay	– .2 – .4 kilo per day
Chou moellier	– .2 – .25 kilo per day
South Island: 5 kilo medium meadow hay plus some grass	– .2 – .25 kilo per day
4 kilo medium meadow hay plus 2 kilo grain	– .4 – .7 kilo per day
Ad lib turnips plus 2 kilo hay, 1.5 kilo grain	– .4 – .7 kilo per day

To assess feed requirements and likely growth rates derived from food stuffs refer to section “The Food Requirements of Ruminants”, K.T. Jagusch.

Policy No. 2

Gross margin before interest and feed cost		\$14,845
Less:		
Interest on capital 15% of \$15,000 (9% = \$1,350)		\$ 2,250
Interest on capital in grain silos roller and feed lot \$2,000 at 9%		\$ 180
Feed Costs		
250 weaner and 1 bale hay to 8 for 120 days = 3,760 bales at 30c		\$ 1,130
Grain at 2 kilo each per day for 100 days = 50 tonnes at \$90 =		\$ 4,500
Gross Margin after interest and feed		\$ 8,060
Return per E/E	\$ 6.78	
per hectare	\$54.24	
as % of capital in stock	45%	

Examples of Feed Costing per day for weaners:

Assessed cost of feed		
Hay 1 bale at 30 kilo at 30c	=	1c kilo
Grain – barley		8.8c kilo
Turnips at say		1c per day

Ration	Cost	Growth	Carcase	Income Day at			
	Day	Day	Day	44c	55c	66c	77c
5 kilo of hay	6c	.25kg	.12kg	5c	7	8	10
4 kilo hay 2 kilo grain	21.6c	.6kg	.3kg	13c	16c	20	23
4 kilo hay: 1½ kilo grain + turnip	18.2c	.6kg	.3kg	13c	16	20	23

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

	Weaner	Yearling	20 mth	Growth Weaner	Increment Yearling
Live wgt in kilo	210	310	400	kilos	kilos
Carcase wgt in kilo	105	155	230	125	75

Value of animal on sale	Weaner	Yearling	20 mth	Net increment value per kg	
				Weaner	Yearling
1970/71	\$70	\$ 95	\$120	40c	33c
1971/72	\$65	\$100	\$130	52c	40c
1972/73	\$75	\$110	\$174	79c	85c
1973/74	\$75	\$120	\$130	44c	13c
1974/75	\$63	\$ 70	\$ 90	20c	27c
1975/76	\$45	\$ 60	\$126	65c	88c
1976/77	\$45	\$ 60	\$126	65c	88c
1977/78	\$40	\$ 65	\$131	73c	88c

CONSOLIDATED INDEX

	Page
A1(1)	
Accountancy Costs	80
Addington Trucking Charges	68
Administration Expenses	
Accountancy	80
General Administration	81
Telephone	81
Adverse Events Relief	
Adverse Climatic Events	136
Adverse Climatic Events Emergency Services	137
Adverse Climatic Events Loans.. .. .	138
Adverse Climatic Events Overdrafts	138
Adverse Event Bonds	138
Aerial Application	
Miscellaneous	73
Oversowing	64
Spray	72
Topdressing	64
Agistment	56
Animal Health	37
Bloat Control	40
Contract Cattle Dipping	37
Contract Sheep Dipping	37
Disinfectants	41
Drenches	39
Facial Eczema Control	40
Penicillin	41
Sheep Dip Guide.. .. .	38
Vaccines	40
Veterinary Club Membership	42
Annual Meat Consumption	229
Annuity Tables	164 – 176
Aotea	26, 66
Apanui Cocksfoot. Price Paid to farmer	30
Arawa	26, 66
Ariki Ryegrass. Price Paid to farmer	30
Artificial Breeding	42
Assessable Income	144
Assistance and Incentives for farmers	119
B1(2)	
Bale Handling Equipment	99
Balers	
Contract Rates	54
New Cost	98
Baling Twine – Cost of	55
Barley	
Cost of Seed	66
Gross Margins	201
Harvesting – Contract Rates	43
Price Paid to farmer	26
Storage Increment	27

Beef Cattle		
	Beef Recording	43
	Beef Revenue	12
	Cartage	62
	Dipping – Contract Rates	37
	Drenches	39
	Export Schedule	12
	Factors Influencing Store Sales	216
	Factors Influencing Schedule Values	216
	Forecasts	218
	Gross Margins	229
	Local Trade	217
	Partial Budgeting for Beef	231
	Prices for Breeding and Store Stock	223
	Vaccines	40
Blade Shearing		36
Bloat Control		40
Bobby Calf Realization		22
Boom Spraying		73
Box Cartage		59
Box Hire		50
Brassicas – Price Paid to farmer		29
Breeding and Store Stock Prices		
	Beef Cattle	25
	Dairy Cattle	23
	Sheep	24
Breeding Expenses		42
Broad Red Clover – Price Paid to farmer		30
Brucellosis Eradication Scheme		135
Building Costs		84
	Cattle Yards	86
	Dairy Sheds	87
	Dwellings	84
	Garages	84
	Grain Storage	86
	Hay Barns	84
	Implement Sheds	84
B2(2)		
	Sheep Yards	85
	Silos	86
	Storage Buildings	86
	Wool Sheds	84
Buildings		
	Costs	84
	Depreciation	156
	Insurance	81
	Repairs and Maintenance	73
Bulk Storage		86
Bull Beef		13
Buried Mains		116
Butter fat – Revenue from		19
C1(2)		
	Calf Rearing Costs	55
	Cambridge Rollers	104

Canterbury Sale Yards Co. Ltd – Monthly Yardings	227
Cartage .	
Cattle	62
Fat Lambs	61
Fertilizer	57
Grain	58
Grass Seed	60
Hay	58
Lambs	61
Lime	57
Rail	56
Sheep	61
Wool	60
Cash Cropping Expenses	
Box Hire	50
Contract Rates	43
Drying Charges	51
Fertilizers	63
Machine Dressing	49
Sacks	45
Seed Certification	47
Seeds – Cost of	66
Seed Testing Fees	48
Spraying	72
Twine	55
Wheat Levy	26
Cattle	
Cartage	62
Dipping	37
Tuberculosis and Brucellosis Eradication Scheme	135
Yards – Cost of	86
Centre Pivotal Irrigation Systems	118
Certification Charges	47
Certification Grades OECD	31
C.F.M. Marketing Pool	7
Chaff Cutting	44
Chain Saws	106
Chisel Ploughs	101
Chou Mollier Seed	67
Cocksfoot	
Gross Margins	204
Price Paid to farmer	30
Combine Harvesters	
Contract Heading Rates.. .. .	43
Cost of	93
Commissions on Stock	68
C2(2)	
Commissions on Wool	69
Company Assessment	148
Company Taxation	148
Commercial Grain Storage	87
Concrete Products	
Pipes	114
Tanks	114
Water Troughs	114

Conditioning Hay	54
Consolidated Dressing and Store Handling Charges	49
Contract Rates	
Aerial Rates – Fertilizer	64
Aerial Rates – Seeds	64
Aerial Rates – Spray	72
Cartage Contracts	56
Cultivation – Tractors and Crawlers	52
Drainage	116
Fencing	110
Harvesting	43
Hay Bailing	54
Miscellaneous	65
Mowing	54, 44
Windrowing	44
Cow Beef	12
Crawlers	
Contract Rates	52
Cost	93
Cropping Revenue	26
Crutching Costs	36
Cultivation – Contract Rates	52
Cultivators	102
Culverts	114
D1(1)	
Dagging Plant Cost	69
Dairy Cattle	
A.B. Expenses	42
Drenches	39
Herd Testing Expenses	42
Penicillin	41
Revenue from	23
Dairy Farm Animal Health Expenses	42
Dairy Farm Workers Wages	36
Dairy Industry Stabilization	139
Dairy Produce Revenue	19
Bobby Calf Realizations	22
Prices from Dairy Cattle	23
Whole Milk for Butter Factories	19
Whole Milk for Casein etc. factories	19
Whole Milk for Cheese Factories	19
Whole Milk for Town Supply	19
Dairy Shed Building Costs	87
Dairy Shed Expenses	53
Death Duty – See Estate Duty	163
Delivery Bulk Fuels	80
Depreciation	155
Development Expenditure	158
Development Finance	128
Development Work – deductible	158
Diesel – Cost	80
Dipping	
Contract Rates – Sheep and Cattle	37
Sheep Dip Guide	38
Direct Drilling	65

Disc Ploughs – Cost	101
Discs – Cost	101
Disinfectants – Cost	41
Dog Registration and Hydatid Control	37
Drainage	116
Drenching Guide	39
Dressing of Seed	49
Drilling – Contract Rates	
Direct	65
Ordinary	65
Precision	65
Drills – Cost	104
Drying Grain and Seeds	51
Dwellings – Cost of	84
E1(1)	
Eartags – Cost	69
Electricity Costs	54
Emery Paper	69
Estate Duty	163
Schedule of Death Duty Rates	176
Estimating Income	160
Exempt Income	144
Expenditure Data	33 – 118
Export Schedules	
Cattle	12
Sheep	8
F1(1)	
Facial Eczema Control	40
Farm Bikes – Cost	105
Farm Income Equalization Scheme	159
Farm Machinery	89
Farm Mortgage Guarantees	130
Farm Ownership Accounts	124
Farm Purchase Finance	122
Farm Taxation	151
Fat Lambs – Cartage	61
Price Paid to farmer	8
Feed Costs	
Grazing Fees	56
Haybaling Contract Rates	54
Stock Foods	55
Fencing	107
Contract Fencing Rate	110
Materials	107
Fertilizers	
Application Cost	
– Aerial Topdressing	64
– Cartage	57
– Spreading	64
– Spreaders – Cost	105
Cartage of	57
Price List	63
Price Subsidy	131
Spreading Bounty	131
Transport Subsidy Scheme	115, 131

Field Peas	
Cost of Seed	66
Price Paid to farmer	27
First Year Taxation Allowances	155
Fixed Wing Crop Spraying	72
Fodder Beet Seed – Cost	67
Forage Box – Cost	99
Forage Harvesters – Cost	94
Four Wheel Drive Tractors – Contract Rates	52
Freezing Peas	
Cost of Seed	66
Price Paid to farmer	28
Freight and Cartage – See Cartage	
Fuel – Cost	80
G1(2)	
Garages – Cost	84
Garden Peas	
Cost of Seed	66
Gross Margin	200
Price Paid to farmer	27
General Administration Expenses	81
Gift Duty	163
Schedule of Gift Duty Rates	176
Gorse Cutting	65
Grader Blade – Cost	106
Grain	
Cartage of	
– Bagged	58
– Bulk	59
– Peas	59
Driers – Cost	100
Handling Equipment – Cost	99
Storage	
– Commercial	87
– Portable	87
– Silos	86
– Storage Increments	26
Grain and Seed Drying Charges	51
Grass Seed – Cartage of	60
Grazing Fees	56
Green Peas	
Cost of Seed	66
Gross Margin	200
Price Paid to farmer	27
Ground Spraying	73
Ground Spreading	64
Gross Margins	177
Ariki	194
Barley	201
Beef Cattle	229
Cocksfoot	204
Evaluation of	178
Green Feed Oats	191
Linseed	202
Lucerne	203

	Oil Seed Rape	202
	Pastures	197
G2(2)	Peas – Field	192
	– Garden	200
	– Vining	200
	Pigs	212
	Potatoes	204
	Ryegrass Straw	194
	Sheep	206
	Spring Wheat	201
	Summary	198
	Wheat	187
	Wheat U/S White Clover	188
	White Clover Seed	189
H1(1)	Hammer Mills – Cost	100
	Hamua Broad Red Clover	
	– Price Paid to farmer	30
	Harrows – Cost	103
	Harvesting	
	Contract Rates	43
	Cost of Headers	93
	Hay	
	Cartage	58.
	Contract Rates	54
	Hay Balers – Cost	98
	Hay Barns – Cost	85
	Hay Conditioners – Cost	97
	Hay Rakes – Cost	98
	Heading	
	Contract Rates	43
	Hourly Running Costs	78
	Heavy Traffic Licence Fees	79
	Helicopter – Charges	72
	Herd Testing	42
	Herringbone – Building Costs	87
	Hilgendorf – Cost of Seed	66
	– Price Paid to farmer	26
	Hoggets – Cartage	61
	Hourly Running Costs	
	Headers	78
	Tractors	77
	Huia White Clover – Price Paid to farmer	30
	H1 Ryegrass – See Manawa	
11(1)	Implements – Contract charges	53
	Implement Sheds – Cost	85
	Income Taxation – See Contents Page 141 for further details	
	Insurances	81
	Interest	84
	Irrigation	
	Assistance	133
	Materials – Cost of	116
	Systems	117

Italian Ryegrass – See Paroa

K1(1)										
	Kahu – See Timothy									
LI(1)										
	Lamb Cartage									61
	Price Paid to farmer									8
	Land Settlement									123
	Lime									
	Cartage									57
	Cost									65
	Spreading Bounty									131
	Spreading Cost									65
	Transport Assistance									131
	Linseed									
	Gross Margin									202
	Price Paid to farmer									28
	Liquid Fertilizer Application									72
	Livestock									
	Cartage									61, 62
	Dairy Cattle									23
	Sheep Breeding Stock									24
	Livestock Incentive Scheme									126
	Loaders – Cost									106
	Lucerne									
	Gross Margins									203
	Price Paid to farmer									
	– dehydration									29
	– seed									30
	Lupins									
	Price Paid to farmer									28
	Seed Cost									66
M1(1)										
	Machine Dressing Charges									49
	Machine Shearing									36
	Machinery									
	Costs									89
	Depreciation									155
	Insurance									81
	Repairs and Maintenance									77
	Maize – Cost of Seed									66
	Management – Wages of									115
	Manawa Ryegrass									
	Price Paid to farmer									30
	Seed Cost									67
	Marginal Lands Board Finance									129
	Matua – See Prairie Grass									
	Meat									
	Bacon									210
	Beef									11
	Bobby Calf									22
	Lamb									8
	Mutton									8
	Pork									14
	Sheep									7

Meat Income Stabilization Scheme	139
Metrication (Grain and Seeds)	45
Milk Products – Revenue from	19
Minimum Export Prices – Meat	11
Miscellaneous	
– Aerial Work	73
– Bale Handling Equipment	99
– Contract Rates	65
– Grain Handling Equipment	99
– Machinery	106
Montgomery Red Clover – Price Paid to farmer	30
Mortgage Guarantees	130
Motor Expenses	77
Motor Registration	79
Mower Conditioners – Cost	97
Mowers – Cost	96
Mowing – Contract Rates	44, 54
N1(1)	
Nil Livestock Values for Taxation	152
Nitrogen Fertilizers – Cost	63
Non-Assessable Income	143
Noxious Plants and Disease Control	135
O1(1)	
Oats	
Price Paid to farmer	27
Seed Cost	66
OECD Seed Certification Grades	31
Oil – Cost	80
Oil Seed Rape – Gross Margin	202
P1(1)	
Paroa Ryegrass	
Price Paid to farmer	30
Seed Cost	67
Partnerships – Taxation	148
Pasture Gross Margins	197
Peas	
Cost of Seed	66
Gross Margins	192, 200
Price Paid to farmer	27
Pelts – Prices	9
Penicillin – Cost	41
Perennial Ryegrass – See Ruanui	
Pest Control	72
Pesticides	
Application Costs	72
Cost Chart	72
Petrol – Cost	80
Pigs	
Bacon – Revenue	210
Gross Margins	212
Pork – Revenue	14, 210
Schedule	14, 210
Piping	114

Saw Bench Contract Prices	65
Schedules	
Beef	12
Pig	14
Sheep	8
Seasonal Finance	129
Seed and Grain Drying Charges	51
Seed Certification Fees	48
Seed Cleaning	49
Seeds	
Costs	66
Price Paid to farmer	30
– Barley	26
– Potatoes	28
– Small Seeds	30
Seed Testing Fees	48
Shearing	
Plant	69
Shed Expenses	69
Wages of Shearers	36
Wool Charges	69
Shed Expenses	
Dairy Shed	53
Wool Shed	69
Sheep	
Cartage	61
Dipping – Contract Rates	37
Dipping Guide	38
Drenches	39
Export Schedule	8
Feed Supplements	55
Gross Margins	206
Mutton Revenue	7, 8
Penicillin	41
Prices for Breeding and Store Stock	24
Vaccines	40
Sheep Yards – Cost	85
Silos – Cost	86
Skin Payments	9
Sledging Bales	54
Small Seeds	
Cartage	60
Machine Dressing and Certification	49
Price Paid to farmer	30
Seed Cost	67
Soil and Water Assistance	133
Irrigation	133
Rural Water Supplies	134
S2(2)	
Special Depreciation.. .. .	155
Special Exemptions	145
Special Plant Loans	129
Special Settlement Loans	123
Spray Costs	
Application	72, 73
Pesticide Guide	72

Weed Spray Guide	70
Spray Equipment – Cost	107
Spreading Subsidies	115
Spring Wheat – Gross Margin	201
Sprinklers – Cost	116
Stabilization	139
Dairy Industry	139
Meat Income Stabilization	139
Price Smoothing Scheme	10
Wool Income Stabilization	140
Standard Value	160
Standing Charges	81
Insurance	81
Interest	84
Rates	83
Rent	84
Stock Cartage.. .. .	61
Stock Foods – Cost	55
Stock Loans	128
Stock Selling Charges	67
Addington Trucking Charges	68
Commissions on Stock	68
Yard Fees	67
Stone Picking – Contract Charges	65
Storage Increments	
Barley	26
Wheat	27
Storage Sheds – Cost	86
Store Handling and Dressing Charges	49
Store Stock Prices	24
Subsidies	115, 131
Subterranean Clover – Price Paid to farmer	30
Super	
Cost of	63
Cartage of	57
Spreading	64
Suspensory Loans for Sharemilkers	126
Swedes – Seed Cost	67
Synthetic Twine – Cost of	55
TI(1)	
Tama Ryegrass	
Price Paid to farmer	30
Seed Cost	67
Tanks – Concrete, Cost of	114
Taxation	
Principles	143
Taxation Tables	
Individuals or Sole Traders	161
Telephone Charges	81
Timothy – Price Paid to farmer	31
Top Dressers – Cost	105
Top Dressing	
Aerial	64
Ground	64

Tow Line Irrigators – Cost	117
Town Milk	
Electricity Charges	54
Revenue From	21
Tractors	
Contract Rates	52
Cost of	89
Repairs and Maintenance	77
Running Costs	77
Transport Subsidies	115
Travelling Irrigators – Cost	118
Trees	70
Tree Topping – Contract Rates	65
Troughs – Concrete, Cost of	114
Trucking Charges, Addington	68
Trucks, Cost of	106
Trusts	
Beneficiaries Income	150
Specified and Other Trusts	149
Tax Liability	149
Tuberculosis Eradication Scheme	135
Turoa Montgomery Red Clover – Price Paid to farmer	30
Twine – Cost of	
Baling Twine	55
Binder Twine	55
Synthetic Twine	55
VI(1)	
Vaccines – Cost	40
Vehicle Expenses	
Fuel, Oil, Grease – Costs per hour	77
Fuels, oils – Cost	80
Hourly Running Costs	78
Registration Fees	79
Repairs and Maintenance	77
Veterinary Club Membership Fees	42
Veterinary Supplies	42
Vining Peas – Gross Margin	200
W1(1)	
Dairy Farm Workers	36
General Farm Workers	35
Shearers	36
Wages of Management	115
Wairau – See Lucerne	
Water Supply	
Piping Cost	114
Troughs – Tanks – Cost	114
Weed and Pest Control	70
Aerial Spray Application	72
Ground Application	73
Pesticide Cost Chart	72
Weed Spray Cost Chart	70
Wheat	
Cartage	58
Cost of Seed	66

	Gross Margins	..	..	..	..	..	..	..	..	..	..	187,201
	Price Paid to farmer	..	..	..	..	..	..	..	..	..	..	26
	Storage Increments	..	..	..	..	..	..	..	..	..	..	26
	Wheat Levy	..	..	..	..	..	..	..	..	..	..	26
White Clover												
	Gross Margins	..	..	..	..	..	..	..	..	..	..	189
	Price Paid to farmer	..	..	..	..	..	..	..	..	..	..	30
Whole Milk for Butter, Casein, Cheese		..	..	..	..	..	..	..	..	..	..	19
for Town Supply		..	..	..	..	..	..	..	..	..	..	21
Windrowers – Cost		..	..	..	..	..	..	..	..	..	..	97
Windrowing – Contract Rates		..	..	..	..	..	..	..	..	..	..	44,54
Wire – Cost	..	..	..	..	..	..	..	..	..	..	..	107
Woodlot Incentives		..	..	..	..	..	..	..	..	..	..	132
Wool Income Stabilization Scheme		..	..	..	..	..	..	..	..	..	..	140
Wool Press – Cost	..	..	..	..	..	..	..	..	..	..	..	69
Wool Production – Cartage		..	..	..	..	..	..	..	..	..	..	60
Crutching and Shearing Wages		..	..	..	..	..	..	..	..	..	..	36
Revenue	..	..	..	..	..	..	..	..	..	..	..	15
Shearing Shed Costs	..	..	..	..	..	..	..	..	..	..	..	69
Wool Charges	..	..	..	..	..	..	..	..	..	..	..	69
Wool Sheds – Cost	84
Wool Shed Hands	36
Y												
Yard Fees	67

**Purchase orders to: Accounts Office,
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Canterbury,
New Zealand.**