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*Grapes -
Coast Road*

Wine Grape Production

186 Hectare : Irrigated

VINEYARD

UPPER HUNTER

GIANNINI FOUNDATION OF
AGRICULTURAL ECONOMICS

Maitland
JUN 18 1977



Local Consensus Data Report

- A CONSENSUS OF COSTS & RETURNS

Graham Kaye
District Horticulturist
Maitland
December 1975

Rod Logan
Regional Economist
Maitland

Bulletin M/LCD: 2

MID COAST & HUNTER REGION

*

*with
Maitland*
N.S.W. DEPARTMENT OF AGRICULTURE

THE LOCAL CONSENSUS DATA TECHNIQUE

Today's economic climate bears hard on primary producers; wine grape producers are no exception. Inflating costs and narrowing profit margins make it increasingly important to keep a careful watch on all production costs.

The L.C.D. or Local Consensus Data technique is a way of obtaining an accurate picture of costs and returns for a particular farming system in a particular locality.

A small group of interested farmers, experienced in a type of farming, meet with officers of the Department of Agriculture to discuss all the practices which have a bearing on the costs and returns of a typical farm in the farming system being studied.

As discussion proceeds, a consensus of opinion, or agreement, is reached on the size and nature of the typical farm and on all aspects of production such as cultural operations, machinery used and time involved. Consensus is arrived at about prices or costs of inputs, normal yields, and expected returns.

It is important to realise that the figures published in these reports are not average figures, but typical figures for farmers represented by the group who provided the data.

Typical figures are in many ways more realistic than average figures. Averages can be biased by unusual or radically different practices which calls for a knowledge of the range of inputs making up the total and a high degree of skill in interpreting the results.

Care must still be taken in applying the figures contained in this report to individual cases. You can be sure, however, that the information in this report has been agreed to by a group of experienced, practicing vignerons on the assumption that they apply to a typical vineyard being operated at a reasonable standard of management in the Hunter Valley.

The management procedures in this report are a consensus of opinion of current practices. They do not necessarily represent or imply any recommendation of the Department of Agriculture.

THANKS

It would not have been possible to produce this consensus report without the valuable assistance of those Hunter Valley vignerons who participated. They were unstinting in giving us both their time and valuable information from their experience.

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WINE GRAPE PRODUCTION

186 Hectare Irrigated Vineyard

UPPER HUNTER

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LOCAL CONSENSUS DATA REPORT

A CONSENSUS OF COSTS & RETURNS

December, 1975

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INTRODUCTION

CLIMATE

The climate of the Hunter Valley is intermediate between the Mediterranean climate of southern Australia with its winter rainfall and summer droughts, and that of northern Australia with a summer rainfall and winter drought. The climate of the area is therefore erratic; it is greatly affected by the direction from which the major climatic influences come.

The average annual rainfall for Muswellbrook is slightly over 600 mm and most of this falls in summer. The hottest months are December to February, with maximum temperatures averaging 24.6°C in January at Muswellbrook. A frost-free period of 7 months is usual for the Hunter Valley.

VARIETIES PLANTED

The Hunter Valley has a reputation for producing distinctive, high quality table wines. This reputation has, basically, been built on two varieties: Semillon for white wines and Shiraz for the reds. In the Hunter Valley, both these consistently produce rich, flavoursome wines which have a unique regional style and character. Shiraz and Semillon account for 47.5% and 24.3%, respectively, of the total Hunter Valley plantings.

With the rapid expansion of Hunter Valley vineyards, a number of other high quality varieties have also been planted in the region. Of these, the famous Cabernet Sauvignon variety from the Bordeaux region in France has already demonstrated that in the Hunter Valley it can produce top quality red wines of distinctive fruitiness and high colour. Chardonnay, the variety which produces the famous white wines of the Burgundy, Chablis and Champagne regions of France, is showing tremendous promise for the Hunter.

A great many other varieties, among them Pinot Noir, Rhine Riesling, Sauvignon Blanc and Traminer, are now planted in the Hunter Valley. These varieties produce top quality table wines in other parts of the world and are now producing wines of a similar quality in this area.

4.

YIELDS

Production on different vineyards ranges from 1.2 to 14.8 tonnes per hectare (0.5 to 6 tons per acre). Substantial year-to-year variation in the whole district also occurs as a result of drought, heavy rainfall at vintage, management and other factors.

The average yield of wine grapes from Hunter Valley vineyards is 4.5 to 5 tonnes per hectare (1.8 to 2 tons per acre).

VINEYARD SIZE

A total of 83 growers in the Hunter Valley cultivate 4 186 hectares (10 344 acres) of grapes and vineyard size ranges from 5 to 470 hectares (12 to 1 160 acres). However, 22 of the growers (just over a quarter) have 85% (3 444 ha or 8 510 acres) of the total plantings.

IRRIGATION

Irrigation is essential in the Upper Hunter if regular cropping at an economic level is to be achieved.

Two systems of irrigation are used in the Hunter Valley: trickle irrigation on 1 146 hectares (2 832 acres) and spray irrigation on 238 hectares (588 acres).

A little more than 60% of trickle irrigators use the Yore 'Diamond Y' above ground system. The rest have installed a buried layout. A total of 238 hectares (588 acres) is irrigated by overhead spray, mostly using travelling irrigators.

WINEMAKING

All but one of the 27 wineries in the Hunter Valley are associated with a vineyard as part of the total enterprise.

THE TYPICAL VINEYARD

By consensus of opinion, the group decided on the following description of the typical vineyard in the Upper Hunter (Muswellbrook District). The Vineyard has its own winery:-

1. VINEYARD AREA

Area planted with vines: 162 ha (400 acres)

Area taken by roads, waterways
headlands and buildings: 24 ha (60 acres)

Total production area: 186 ha (460 acres)

An additional area of 178 ha (440 acres) is not used for wine grape production but some of it may be planted at a later date.

2. GRAPE VARIETIES

Our typical vineyard has planted the following varieties:-

Shiraz	73 ha	(180 ac)	45%
Semillon	41 ha	(100 ac)	25%
Cabernet Sauvignon	32 ha	(80 ac)	20%
Rhine Riesling	11 ha	(28 ac)	7%
Others *	5 ha	(12 ac)	3%
Total	<u>162 ha</u>	<u>(400 ac)</u>	<u>100%</u>

* Includes small areas of Traminer, Trebbiano, Chardonnay etc.

Planting started in 1969/70 and most of the vines would have been planted by 1972. Thus, the majority of vines are at their full production potential.

Vines are planted at 3.4m x 1.5m (11ft x 5ft) spacing to give a planting density of 1975 vines per hectare (800 vines per acre). Total number of vines planted is therefore around 320 000.

3. IRRIGATION SCHEME

The whole planted area of the vineyard is trickle irrigated. Two 75 kW (100 h.p.) diesel motors powering 100 mm (4 in) pumps are used to supply water for the system. (Irrigation on Upper Hunter vineyards is used to maintain average yields rather than to obtain maximum possible yields. This method is used to maintain optimum wine quality.)

The total cost of installing the trickle system was about \$200 000 i.e. \$1235 per hectare (\$500 per acre) at time of planting.

6.

4. TRELLISING

Our typical Upper Hunter vineyard uses a 'T' trellis with the fruiting wires 1.1m (3½ft) above ground level. The fruiting wires are attached to a 0.6m or 0.9m (2ft or 3ft) wide 'T' arm with a foliage wire 330mm (13in) above. Some plantings use a single wire trellis with the fruiting wire 1.1m (3½ft) above ground and with a foliage wire 330mm (13in) above the fruiting wire. On average, the 'T' trellis would have cost around \$180 000 or 162 ha @ \$1 112 per hectare (400 ac @ \$450 per acre).

5. BUILDINGS

Four houses are provided for employees (manager, winemaker, foreman and leading hand). The houses for the manager and winemaker are brick and cost around \$15 000 each. A weatherboard house was built for the foreman and an existing house renovated for the leading hand at an average cost of about \$12 500 each. The capital cost of the winemaker's house is not included in the vineyard cost; it is considered as a cost to the winery of \$15 000.

Cost of the winery itself, fully equipped, is estimated at \$800 000.

Machinery storage, a fully equipped workshop and staff amenities such as toilets, dining room and showers is provided in two large sheds costing around \$12 000 in total. Mobile toilets and sheds for use by employees out in the vineyard are also provided. These, together with two sheds to house the irrigation pumps and motors, would have cost around \$2 000.

Total cost of buildings is therefore around \$54 000 (excluding the winery and the winemaker's house).

6. LABOUR

Labour requirements of our typical vineyard are mostly met by permanent employees, but a significant quantity of casual labour is employed during pruning and harvesting operations.

Because of its size, the vineyard permanently employs a manager, winemaker, foreman, leading hand, mechanic and 6 tractor drivers. The mechanic spends approximately two thirds of his time working on vineyard machinery and one third in the winery. Two thirds of his salary has therefore been allocated to the vineyard costs. The labour costs stated on page 11 include paid annual holidays and 17½% leave loading. Obviously, labour costs will continue to increase and the reader should take this into account. Wages and salaries quoted on page 11 are current as of July, 1975.

An office girl is employed by both the vineyard and the winery. It is estimated that half her time is spent on vineyard matters so half her annual salary has been included on page 11.

7. PLANT AND MACHINERY

Here is a list of plant and machinery to be found on our typical Upper Hunter vineyard of 186 hectares. Prices used are approximate 1975 listings for new machinery.

Item	Description	New Cost (1975) \$
Tractors	2 of 45 kW (60 hp)	8 000 ea
Tractors	4 of 30-45 kW (40-60 hp)	6 000 "
Disc Harrows	2 of 16 plate	800 "
Scarifiers	2 of 2.1m (7ft)	650 "
Rotary Hoe	203 cm (80 in)	2 000
Slashers	2 of 1.8m (6ft)	1 200 ea
Cut-off Ploughs	4	1 050 "
Trailers	2 of Box trailers	300 "
Trailer	Flat top	300
Herbicide Sprayers	3 of 1364 litre (300 gal) trailing	2 250 ea
Misters	2 of 1364 litre (300 gal) trailing	4 250 "
Fertilizer Spreader	300 kg (6 cwt)	550
Vine Trimmers	2	1 100 ea
Ripper	Single tyne	150
Seed Drill	2.1m (7ft)	1 650
Scare Guns	4 of gas powered	300 ea
Grader Blade		300
Mechanical Harvester	Self propelled	45 000
Harvesting Trailers	4 of 2 tonne tipping	1 500 ea
Car (Manager)		5 500
Utilities	2	4 500 ea
Truck *	5 tonne ($\frac{1}{2}$ winery, $\frac{1}{2}$ vineyard) Second hand	2 500
Motor Cycle		450
Sundries	Shovels, Hoes, Pruning Equipment, Pumps, Hoses etc.	5 000

* The truck is valued at \$5 000 and is used by the winery and the vineyard so 50% of the cost is assigned to each.

8.

8. CAPITAL INVESTMENT

The total capital invested in this vineyard is \$6919 per hectare (\$2800 per acre). Obviously, the cost of establishing a similar vineyard today would be much higher. A figure of \$8000 to \$10 000 per hectare (\$3200 to \$4000 per acre) would be reasonable today.

186 ha @ \$6919 per hectare*	
(460 acres @ \$2800 per acre)	\$1 288 000
This includes land, machinery, buildings, irrigation scheme, vines, trellising and roads.	
178 ha @ \$494 per hectare unplanted*	
(440 acres @ \$200 per acre)	\$88 000
TOTAL VINEYARD INVESTMENT	<u>\$1 376 000</u>

* *These figures are not exact due to rounding in metric conversion.*

This report does not investigate the profitability of the winery side of the vineyard. It is only concerned with the economics of the vineyard to the stage where the grapes enter the winery. This approach has been taken for two reasons: firstly, vignerons agree that the vineyard must be able to make a profit on its own. Secondly, the economics of a winery are too involved to include in this report; a completely separate study is needed.

MANAGEMENT PRACTICES

Under a reasonable standard of management the following viticulture practices would be carried out on our typical Upper Hunter vineyard:-

1. PRUNING

Two pruning methods are used:-

(a) The Bordelaise Espalier (cane) system, traditionally the most widely used system in the Hunter Valley, is used for vines on 'T' trellises. It is more suitable than others for mechanical harvesting.

Cost of cane pruning averages 7.5¢ per vine; wrapping and tying cost an average of 4.0¢ per vine; total cost of this pruning method is 11.5¢ per vine.

(b) The Thormery Espalier (spur) system is used for vines on a single-wire trellis.

Cost of spur pruning is between 5¢ and 8.5¢ per vine and there are no additional costs for wrapping and tying.

2. PEST AND DISEASE CONTROL

Spraying for pest and disease control is done with two 1364 litre (300 gal) trailing misters. Aerial spraying is used when conditions are unsuitable for ground equipment (e.g. after heavy rain).

Downy Mildew

There is no other viticultural district in Australia where downy mildew is such a problem. To control it, usually six to eight spray applications are made each season. In wet seasons, however, as many as 15 sprays may be needed.

The usual practice on our typical vineyard is to use two applications of Captafol (Difolitan (R)) followed by five applications of Mancozeb (Dithane M45 (R)), or copper oxychloride.

Captafol is sprayed along every second row at the rate of 1.25 kg per hectare (1½ lb per acre).

Mancozeb is sprayed along each row at the rate of 2 kg per hectare (2 lb per acre).

Black Spot

Outbreaks of black spot are rare but control measures are applied annually using Ziram at the rate of 1.5 kg per hectare (1½ lb per acre). This spray is applied along every second row.

10.

Bunch Rots

Crop losses from bunch rots occur in susceptible varieties on average once every three years. For control, two sprays of Captan are applied each year at 1.25 kg per hectare (1½ lb per acre) at flowering.

Vine Mites

The most significant vine pests are the vine mites. To control them, one lime sulphur spray is applied at bud-burst at the rate of 14 litres per hectare (1½ gal per acre).

In addition, one wettable sulphur spray is applied at 3 kg per hectare (3 lb per acre). Wettable sulphur also controls powdery mildew. This spray is combined with one of the downy mildew sprays.

Vine Moth

Considerable damage can be caused by vine moth. One control spray of Carbaryl at the rate of 1.25 kg per hectare (1½ lb per acre) is applied during the season in conjunction with a downy mildew spray.

Birds

The use of four scare guns and shooting reduces damage by birds at vintage.

3. SOIL MANAGEMENT

Soil management and weed control in the vineyard are important for the conservation of soil moisture. For this purpose, inter-row cultivation is carried out by discing twice in both directions and scarifying twice each year during the spring and early summer. Volunteer weed growth is then slashed once during the late summer, before vintage.

Under-vine weed control is achieved by one cutting-off and one throwing-in in early spring followed by two knifings during late spring and early summer. These three operations are carried out with offset implements, mid-mounted on a tractor. A spray of paraquat and diquat combined is applied to a 1.2 metre (4ft) band under the vine at the rate of 1.4 litres of each per sprayed hectare (1 pint per sprayed acre).

A cover crop of oats and a medic is grown during winter, sown at the rate of 45 kg and 2.25 kg per hectare, respectively, (40 and 1 lb per acre). This cover crop is sown with 125 kg of superphosphate per hectare (1 bag per acre).

4. HARVESTING

Harvesting is done with a mechanical harvester operating for 16 hours a day. At this rate, the machine harvests an average of 4.8 hectares (12 acres) a day.

COSTS OF WINE GRAPE PRODUCTION

ANNUAL VINEYARD OVERHEAD COSTS

\$

Council Rates and Land Tax		5 000
Insurance Premiums		
- Workers Compensation and Accident Payment Insurance	\$10 668	
- Houses and Sheds	\$240	
- Machinery (fire only)	\$370	
- Motor Vehicles (includes 50% of truck)	\$870	
- Mechanical Harvester (comprehensive)	\$1 714	
- Public Risk	<u>\$250</u>	14 112
Payroll Tax		4 343
Motor Vehicles Registrations and Road Tax (includes 50% of truck cost)		545
Office and Stationery Expenses		300
Telephone		1 200
Bank Charges		400
Accountancy Charges		5 000
Miscellaneous Fees, Licences, Subscriptions, etc.		500
Labour		
- Manager	\$14 000	
- Foreman	\$7 000	
- Mechanic (two thirds to Vineyard)	\$4 667	
- Leading Hand	\$6 200	
- 6 Permanent Tractor Drivers	\$36 000	
- Office Girl (50% to Vineyard)	<u>\$3 000</u>	70 867

TOTAL (Carried forward)

\$102 267

ANNUAL VINEYARD OVERHEAD COSTS - Continued

TOTAL (from previous page)

\$102 267

Depreciation - Plant & Machinery

	1975 New Value \$	Expected Life (years)	Trade-in Value \$	Depreciation \$	
Tractors 45 kW (60hp)	16 000	5	6 000	2 000	
" 30-45 kW (40-60hp)	24 000	5	8 000	3 200	
Car	5 500	2	4 500	500	
Utilities	9 000	4	1 000	2 000	
Truck 50% for Vineyard	2 500	15	200	153	
Motor Cycle	450	4	100	88	
Mechanical Harvester	45 000	10	5 000	4 000	
Harvesting Trailers	6 000	10	600	540	
Disc Harrows	1 600	5	160	288	
Scarifiers	1 300	10	130	117	
Rotary Hoe	2 000	6	200	300	
Slashers	2 400	5	240	432	
Cut-off Plough	4 200	5	420	756	
Trailers	900	15	90	54	
Herbicide Sprayers	6 750	10	675	608	
Misters	8 500	10	850	765	
Fertilizer Spreader	550	7	55	71	
Vine Trimmers	2 200	10	220	198	
Ripper	150	15	15	9	
Seed Drill	1 650	7	165	212	
Scare Guns	1 200	10	-	120	
Grader Blade	300	15	30	18	
Sundries - Fire Pumps & Motors)					
- Tools)					
- Hoses)	5 000	15	500	300	
- Workshop Equipment)					
Irrigation - Pumps	1 100	10	-	110	
- Motors	5 000	8	-	625	
- Pipes, Drippers	150 000	15	-	<u>10 000</u>	
					\$27 464
TOTAL VINEYARD OVERHEAD COSTS					<u>\$129 731</u>

ANNUAL VINEYARD RUNNING COSTS

<u>Repairs & Maintenance to Plant and Machinery</u>		<u>\$</u>	
Tractors 45 kW (60hp)	1	600	
" 30-45 kW (40-60hp)	3	200	
Car		500	
Utilities	1	000	
Truck 50% for vineyard		500	
Motor Cycle		50	
Mechanical Harvester	3	000	
Harvesting Trailers		200	
Disc Harrows		300	
Scarifiers		50	
Rotary Hoe		300	
Slashers		200	
Cut-off Plough		400	
Trailers		90	
Herbicide Sprayers		180	
Misters		200	
Fertilizer Spreader		50	
Vine Trimmers		100	
Ripper		10	
Seed Drill		50	
Scare Guns		100	
Grader Blade		20	
Sundries - Fire Pumps and Motors)			
- Tools			
- Hoses			
- Workshop Equipment			
		<u>500</u>	\$12 600
<u>Repairs and Maintenance to Buildings</u>		<u>\$</u>	
House (brick)		100	
Houses (wood)		600	
Sheds		100	
Misc. Sheds, Toilets, etc.		<u>100</u>	\$900
<u>Repairs and Maintenance to Irrigation Plant</u>		<u>\$</u>	
Irrigation - Pumps		20	
- Motors		800	
- Pipes, Drippers, etc.		<u>2 800</u>	\$3 620
<u>Repairs and Maintenance to Vineyard</u>		<u>\$</u>	
Fences		100	
Trellising		1 500	
Vines		-	
Roads		<u>500</u>	\$2 100
TOTAL (Carried forward)			<u>\$19 220</u>

14.

ANNUAL VINEYARD RUNNING COSTS - Continued

TOTAL (from previous page)		\$19 220
<u>Fuel and Lubricants</u>	\$	
Diesel	6 000	
Petrol	1 500	
Oils and Greases	<u>1 350</u>	\$8 850
<u>Casual Labour (for pruning and vine training)</u>		\$36 800
<u>Chemicals</u>	\$	
Herbicides		
Paraquat (1.4 l/ha) 85 l @ \$6.77/l	575	
Diquat (1.4 l/ha) 85 l @ \$6.70/l	570	
Fungicides		
Ziram (1.5 kg/ha - 1 spray)		
243 kg @ \$0.79/kg	192	
Difolitan (R) (1.25 kg/ha - 2 sprays)		
405 kg @ \$4.94/kg	2 000	
Dithane M45 (R) (2 kg/ha - 5 sprays)		
1620 kg @ \$2.65/kg	4 293	
Wettable Sulphur (3 kg/ha - 1 spray)		
486 kg @ \$0.67/kg	326	
Captan (1.25 kg/ha - 2 sprays)		
405 kg @ \$3.33/kg	1 349	
Insecticides		
Carbaryl (1.25 kg/ha - 1 spray)		
203 kg @ \$3.68/kg	745	
Lime Sulphur (14 l/ha - 1 spray)		
2268 l @ \$0.21/l	476	
Wetting Agent		
180 l @ \$1.26/l	<u>227</u>	\$10 753
<u>Fertilizers</u>		
Superphosphate (approx. 125 kg/ha)		
20 tonnes @ \$74/tonne		\$1 480
<u>Cover Crop Seed</u>	\$	
Oats (45 kg/ha) 7 290 kg @ \$0.15/kg	1 093	
Medic (2.25 kg/ha) 365 kg @ \$1.75/kg	<u>639</u>	\$1 732
<u>TOTAL VINEYARD RUNNING COSTS</u>		<u>\$78 835</u>

SUMMARY OF PRODUCTION COSTS*

	Cost per Hectare \$	Cost per Acre \$	Total Cost 186 ha \$
<i>Overhead Costs</i>			
Labour	381	154	70 867
Depreciation	148	60	27 464
Other Overheads	169	68	31 400
Total Overhead Costs	698	282	129 731
<i>Running Costs</i>			
Repairs and Maintenance	103	42	19 220
Fuel and Lubricants	47	19	8 850
Casual Labour	198	80	36 800
Chemicals	58	23	10 753
Other Running Costs	17	7	3 212
Total Running Costs	423	171	78 835
TOTAL VINEYARD COST	1 121	453	208 566

* Rows and columns may not total due to rounding.

GROSS INCOME FROM WINE GRAPES

The range of yields from this typical Upper Hunter Vineyard would be:

Shiraz	7.5 - 15.0	tonne per hectare	(3 - 6	tons per acre)
Semillon	7.5 - 15.0	" " "	(3 - 6	" " ")
Cabernet Sauvignon	5.0 - 12.5	" " "	(2 - 5	" " ")
Rhine Riesling	5.0 - 10.0	" " "	(2 - 4	" " ")
Other	5.0 - 10.0	" " "	(2 - 4	" " ")

This range in yields would be the result of various factors, the most influential being climate and management. Drought, hail storms and excessive rainfall at flowering and vintage all have a pronounced effect upon the ultimate yields of all Hunter Valley vineyards. Managerial factors, such as the frequency and timing of irrigation, pruning level and pest and disease control, can also influence yields. However, these factors will not influence all varieties uniformly. For example, rainfall at the start of vintage can seriously affect the quality and yield of early varieties, particularly Semillon, through berry splitting and bunch rotting.

Premium quality fruit would be charged to the winery at these typical values:

Shiraz	\$240/tonne
Semillon	\$240/ "
Cabernet Sauvignon	\$300/ "
Rhine Riesling	\$300/ "
Other	\$300/ "

Gross income from the typical vineyard would therefore range between:

a) *Assuming yields from the bottom of the range -*

73 hectares Shiraz @ 7.5 tonnes per hectare @ \$240 per tonne	\$131 400
41 hectares Semillon @ 7.5 tonnes per hectare @ \$240 per tonne	\$73 800
32 hectares Cabernet Sauvignon @ 5 tonnes per hectare @ \$300 per tonne	\$48 000
11 hectares Rhine Riesling @ 5 tonnes per hectare @ \$300 per tonne	\$16 500
5 hectares other varieties @ 5 tonne per hectare @ \$300 per tonne	\$7 500
TOTAL GROSS INCOME	<u>\$277 200</u>

GROSS INCOME FROM WINE GRAPES - Continued

b) *Assuming yields from the top of the range -*

73 hectares Shiraz @ 15 tonnes per hectare @ \$240 per tonne	\$262 800
41 hectares Semillon @ 15 tonnes per hectare @ \$240 per tonne	\$147 600
32 hectares Cabernet Sauvignon @ 12.5 tonnes per hectare @ \$300 per tonne	\$120 000
11 hectares Rhine Riesling @ 10 tonnes per hectare @ \$300 per tonne	\$33 000
5 hectares other varieties @ 10 tonnes per hectare @ \$300 per tonne	\$15 000
TOTAL GROSS INCOME	<u>\$578 400</u>

PROFITABILITY OF WINE GRAPE PRODUCTION

Using the costs and returns arrived at by group consensus, the profitability of our typical Upper Hunter vineyard is estimated to be as follows:

a) *Assuming yields from the bottom of the range -*

	TOTAL GROSS INCOME (vignerons' estimates)	\$277 200
less	TOTAL OVERHEAD COSTS	\$102 267
less	TOTAL RUNNING COSTS	<u>\$78 835</u>
=	NET VINEYARD INCOME FROM WINE GRAPES	\$96 098
less	DEPRECIATION	<u>\$27 464</u>
=	NET RETURN TO CAPITAL AND MANAGEMENT before tax	<u>\$68 634</u>

Return on Capital Invested in the Vineyard

$$\frac{\$ 68\ 634}{\$ 1\ 376\ 000} = 5.0\%$$

b) *Assuming yields from the top of the range -*

	TOTAL GROSS INCOME (vignerons' estimates)	\$578 400
less	TOTAL OVERHEAD COSTS	\$102 267
less	TOTAL RUNNING COSTS	<u>\$78 835</u>
=	NET VINEYARD INCOME FROM WINE GRAPES	\$397 298
less	DEPRECIATION	<u>\$27 464</u>
=	NET RETURN TO CAPITAL AND MANAGEMENT before tax	<u>\$369 834</u>

Return on Capital Invested in the Vineyard

$$\frac{\$ 369\ 834}{\$ 1\ 376\ 000} = 26.9\%$$

Thus, the typical Upper Hunter vineyard has between \$70 000 and \$370 000 available to repay borrowed capital and interest, and to pay income tax and dividends to shareholders.

By way of comparison, if wine grape growing profitability is estimated using average Hunter Valley yields for the 1974 and 1975 Vintages, our typical vineyard would have made a loss.

The average yields are biased downwards by a number of factors. The significant number of young vines which have not yet reached maximum production and the fact that the average includes wine grapes from both irrigated and non-irrigated vineyards are the main causes of the bias.

Using these average yields, the gross income from our typical vineyard would be:

73 hectares Shiraz @ 4.8 tonnes per hectare @ \$240 per tonne	\$84 096
41 hectares Semillon @ 5.2 tonnes per hectare @ \$240 per tonne	\$51 168
32 hectares Cabernet Sauvignon @ 3.7 tonnes per hectare @ \$300 per tonne	\$35 520
11 hectares Rhine Riesling @ 4.3 tonnes per hectare @ \$300 per tonne	\$14 190
5 hectares other varieties @ 4.3 tonnes per hectare @ \$300 per tonne	\$6 450
TOTAL GROSS INCOME	<u>\$191 424</u>

The profitability would therefore be:

TOTAL GROSS INCOME (1974, 1975 H.V. average)	\$191 424
less TOTAL OVERHEAD COSTS	\$102 267
less TOTAL RUNNING COSTS	\$78 835
= NET VINEYARD INCOME FROM WINE GRAPES	<u>\$10 322</u>
less DEPRECIATION	\$27 464
= NET RETURN TO CAPITAL AND MANAGEMENT before tax	<u>-\$17 142</u>

Return on Capital Invested in the Vineyard

$$\frac{\$ -17 142}{1376 000} = -1.2\%$$

CONCLUSIONS

1. The profitability of wine grape growing on the typical vineyard is sensitive to changes in yields and prices. The effects of changes in yield are explored on pages 16 to 18. Price changes of the same magnitude would have similar effects.
2. As the typical vineyard in the Upper Hunter relies heavily on borrowed capital, it is essential that high yields be consistently achieved if viability is to be maintained. At the lower yields, profitability is insufficient to service large amounts of borrowed capital.
3. Labour accounts for a large proportion of the total production cost (approximately 52%). Thus any change in the cost of labour will have a substantial influence on profitability.
4. Any factors which prevent mechanical harvesting, such as unsuitable soil conditions, would increase the total production cost by up to 20% with a consequent effect on profits.