

PROFITABLE PASTURES FOR FINE WOOL PRODUCTION

Phillip Clements
 "Garfield"
 Bigga NSW

The word profit has been an evolution of modern day farming and grazing trends. More emphasis has been placed on this word than ever before no matter what enterprise is involved. Fine wool in recent times has enjoyed a healthy profit but like other enterprises there is still room for improvement. Constant pressure by the cost price squeeze has been placed on the farmer or grazier to derive more profit out of his or her enterprise and in the presentation of this paper I shall attempt to evaluate pastures for profitability in the production of fine wool. The two properties I have selected are both traditional fine wool pastures and both are in the Crookwell district, similar in annual rainfall, altitude and aspect. The major differences being soil type and stage of improvement.

Property 1 "Red Hill" (Owners - Mr & Mrs T McCormick)

This property is very well established and is located on the Southern Tablelands approx. 25kms north west from the township of Crookwell. Total area is 360 ha of which 90% is arable. "Red Hill" is 939m above sea level and the soil type is red basalt loam and enjoys approx. 875mm rainfall annually.

History of pasture improvement

The first pasture improvement took place just after the land was granted and being so heavily timbered with such species as Yellow Box, Red Gum and White Stringy reference is often made to the fact that bells were constantly used to find cattle. Boundary fences were vital to enclose small areas that were cleared for the purpose of sowing and harvesting cereal crops, ie. wheat and oats.

In the early 1920's the first major attempt towards pasture improvement was undertaken. Existing dry timber was packed and burnt and ringbarking of standing trees soon made way for the erection sub-division fences. By 1940 pasture improvement was really showing its potential.

Species and sowing method.

1940's - Initially Mt. Barker sub. clover was hand broadcast in conjunction with oats for winter feed. Reasonable germination occurred but it was found to be too labour intensive and also difficult to regulate the seeding rate accurately.

1958 - the purchase of a seed drill with a small seed box attached allowed the owners to cover more ground and use a wider range of improved pastures. Oats were sown at the rate of 80 kg/ha with a sub. clover mix of Mt. Barker and Woogenellup at

6 kg/ha.

1960's - 1986 - Other species were introduced such as phalaris, cocksfoot, Demeter fescue and the ryegrasses Wimmera and Victorian. These were sown at the recommended rates and always with an oat crop. The owner believe that he achieved a reasonable success rate by this method and added to the lull in the feed year by providing sheep with additional winter feed from the oats. Careful management ensured that the improved pasture established itself the following autumn.

The crop and pasture are now sown in March-April depending on soil moisture and sheep are placed on the crop approx. six weeks after sowing. Two to three times during winter it is heavily grazed for short periods. From late August or early September the area is kept free of stock until the oats are harvested in January. Sheep are then allowed to graze until autumn rain thus allowing the pastures to fully establish themselves.

The property is now 90% improved with the remaining 10% wooded areas. Longevity of the pastures are quite remarkable with one particular paddock being established for 28 years. Mr McCormick believes that management is the major contributing factor for the survival of the improved pastures; a close monitoring system has to be adopted otherwise ever-grazing or selective grazing will be detrimental to the pasture.

Paddocks

"Red Hill" is divided into 18 paddocks ranging from 2.5 ha to 40 ha and are well watered with permanent creek and/or dams. In later years a programme of shelter belts have been undertaken as like many properties in earlier years the axeman was over zealous.

Fertilizer

From 1950-1972 the property had been annually top-dressed with 100 kg/ha of super. Mo super. was not only applied at five year intervals but also when oat crops and pastures were sown. Aerial supering of one third of the pastures has taken place annually.

Stocking rate

The stock run on "Red Hill" now is 1,000 ewes and 600 weaners with represents a stocking rate of approx. 4.17 dse/ha. This figure has not allowed for ewes having a dse of say approx. 2.0, thus in real terms the property is understocked but it is run in conjunction with two other properties and the owner has a conservative approach as it is often used for stock in transit. Under normal circumstances the property should run in the proximity of 3,200 dse or 8.34 dse/ha.

Wool production

Records show the steady improvement of wool production in the period of time since the inception of pasture improvement and sheep selection. Between 1930 and the 1940's wool cuts only averaged 1.5kg per head. Present wool cuts average 6 kg per head for ewes and 4.5 kg for hoggets. Stocking rate has increased from 2.5 to present day levels. Because of the moderate stocking rate micron diameter of wool varies very little between 18 and 19 microns with a yield of 70% or better ever the last five years. Total vegetable matter is 0.8% consisting of 50% burr (clover), 25% hard heads and twigs and 25% shive.

Table 1 Production figures for "Red Hill"

Body weight	average for dry sheep	40 kg
Lambing	average date	August
	average weaning rate	70 %
Weaning weights at 5 months		20 kg
Rams %		2 %
Ewes age at first lamb (mths)		36
Average age when culled (yrs)		7.5
Mortality rate of adult stock		5 %
Wool cut per head all sheep shorn Dec.		
	ewes	6 kg
	ewes 2 yr.	5 kg
	ewe hoggets	4.5 kg
	rams	8 kg
	lambs	1.8 kg

Table 2 Weights and prices

<u>Number</u>	<u>Stock Type</u>	<u>Purchased/sold</u>	<u>Age (yrs)</u>	<u>Month</u>	<u>Weight (kg)</u>	<u>Price \$/head</u>
6	Rams	Purchased	1.5	Jan	53	200
171	CFA ewes	Sold	7.5	Jan	40	13.00
94	Ewe hgts	Sold	1.5	Jan	40	18.00
350	Wether wnrs.	Sold	0.5	Jan	28	15.00
4	Rams	Sold	CFA	Jan	45	10.00

Table 3 Sheep Management Calendar

Activ.	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Join			---									
Lamb								---				
Crutch							---					
Shear												---
Drench	---			---					---			---
Yng Stock	---			---			---					---
Dip/Jet			---									---
Vac							---		---			

Mules/Mark
 Wean
 Sale ---
 Buy ---

Table 4 Livestock Reconciliation Flow Chart

MERINO BREEDING (FINE WOOL) LIVESTOCK RECONCILIATION																
SOURCES (INWARD STOCK)							USES (OUTWARD STOCK)									
CLASS OF STOCK	START OF YEAR		PURCHASES		TRANSFERS IN BIRTHS		TOTAL SOURCES	DEATHS	TRANSFERS OUT		END OF YEAR		TOTAL USES			
	NO.	\$	NO.	\$	NO.	FROM			NO.	TO	NO.	\$		VALUE		
Ewes	222	\$30	\$6645		222	Hoggets	443	11			222	\$30	\$6645	233		
	210	\$26	\$5471				210	11			210	\$26	\$5471	221		
	200	\$22	\$4398				200	10			200	\$22	\$4398	210		
	190	\$19	\$3608				190	9			190	\$19	\$3608	199		
	180	\$15	\$2705				180	9	171	\$2228	180	\$15	\$2705	361		
2 y.o	234	\$15	\$3510		234	Hoggets	468	12	222	Ewes	234	\$15	\$3510	468		
Hoggets	351	\$25	\$8775		351	Lambs	702	18	234	2y.o ewes	99	\$1790	351	\$25	\$8768	702
Lambs							701		351	Hoggets	351	\$5261	0		701	
Rams	20	\$200	\$4000	6	1200		26	2		4	\$40	20	\$200	\$4000	26	
TOTAL	1607		\$39112	6	1200	806	701	3121	81	806	626	\$9319	1607	\$39105	3121	
Breeding livestock capital invested:							\$36186									

FLOW CHART: MERINO BREEDING FLOCK (FINE WOOL)

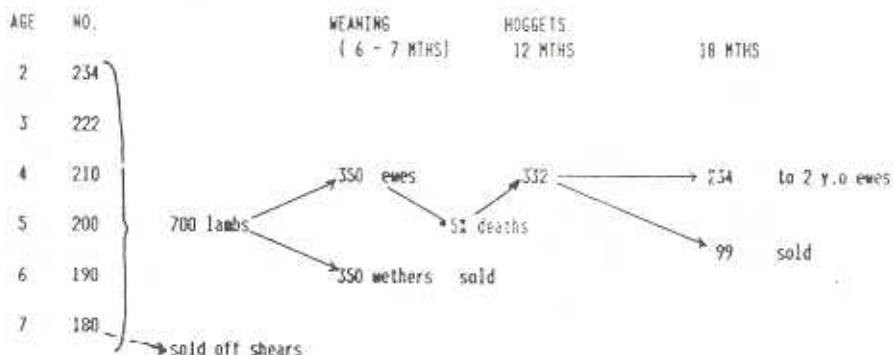


Table 5 BudgetIncome

<u>Wool</u>	<u>Kg</u>	<u>No</u>	<u>Class</u>	<u>Price (\$/kg)</u>	<u>Total</u>
	6.00	950	Ewes	\$5.20	\$29,640.00
	6.00	222	2 YO Ewes	\$5.20	6,926.40
	4.50	333	Ewe Hgts	\$6.00	8,991.00
	7.00	18	Rams	\$5.00	630.00
	2.00	350	Lambs	\$3.50	2,450.00
<hr/>					
<u>Sheep</u>		<u>No</u>	<u>Class</u>	<u>Price (\$/hd)</u>	<u>Total</u>
		171	CFA Ewes	\$13.00	\$ 2,223.00
		99	Ewe Hgts	\$18.00	1,782.00
		350	Wether Wnrs	\$15.00	5,250.00
		4	Rams	\$10.00	40.00
<hr/>					
TOTAL INCOME (A)					\$57,932.40
<hr/>					
<u>Variable costs</u>		<u>No</u>	<u>Cost</u>	<u>Repetitions</u>	<u>Total</u>
Shearing		1880	\$2.20	1	\$ 4,136.00
		18	3.30	1	59.40
Crutching		1545	0.50	1	772.50
		19	0.61	1	11.59
Drenching		1274	0.86	4	1,095.64
		350	0.68	4	238.00
		350	0.17	1	59.50
Dip/Jet					
Dip off shears		1898	0.10	1	189.80
Jet		1605	0.25	1	401.25
Vaccination		1564	0.13	1	203.32
		700	0.13	2	182.00
Mules/Mark		700	0.50	1	350.00
P.P. Rates		1607	0.07		144.10
<hr/>					
<u>Selling costs</u>					
Livestock					475.68
Wool					5,821.09
Cartage					405.60
Total variable costs (B)					\$14,515.47
<hr/>					

Sundry costs

<u>Purchases</u> (C)	<u>Numbers</u>	<u>Cost</u>	<u>Total Purchases</u> 1,200.00
Rams	6	\$200	

Gross Margin (A-(B+C))	\$42,216.93
Gross Margin (ewe)	\$42.00
Gross Margin (dse)	\$20.00
Gross Margin (per \$100 livestock capital invested)	\$110.00

Property 2 "Garfield" (Owners Clements family)

This property is located 50 kms north west of Crookwell in the Southern Tablelands and has the total area of 824 ha of which approx. 70% has been cleared. The property is similar in elevation to "Red Hill" with a soil type existing mainly of granite with granite outcrops.

"Garfield" has had no major pasture improvement but has been supered regularly up until the drought of 1982. Aerial sowing of Mt Barker sub. clover was introduced in 1965 but with the drought condition only small pockets exist to-day.

Stocking rate

The stock run on "Garfield" is 3,200 sheep comprising 1,000 ewes with the balance being lambs, hoggets and wethers. Total area taken up by the breeding flock and followers is 431 ha. The remaining area is not suitable for the breeding flock so wethers are run on 393 ha. In real terms the property is running approx. 5 dse/ha.

Table 6 Wool production

	<u>Ewes</u> (No)	<u>Yield</u> (kg/head)	<u>Price</u> (\$/kg)
1982	1009	3.2	\$5.30
1983	960	3.1	\$4.30
1984	969	3.8	\$6.20
1985	995	3.5	\$5.98

Average micron	18
Average kg/hd	3.4 kg (drought conditions 1982)
Average yield	75% (Schlumberger dry)
Vegetable matter	0.4%, 100% Seed Shive

Pastures

As previously mentioned some sub. clover exists today but basically the composition of the pasture is mainly native

species. These consist of four main species Red, Wallaby and Kangaroo grasses whilst in some areas Tussocky poa is found. Wallaby grasses provide the majority of the winter feed whilst Kangaroo and Red grasses being summer growers are extremely useful if grazed properly. These types tend to become somewhat unpalatable if allowed to mature but the Tussocky poa is useful stock feed if burnt during winter allowing it to produce a sweet pick in early spring.

Production figures for "Garfield"

Management is very similar in relation to the calendar of activities (Table 3), costs being relative to each property and ram %, weaning ages etc., being very comparable I have left them as a standard. The major differences being wool cut/head and price received for wool.

Table 7 Wool cut per head (All sheep shorn December)

Ewes	3.4 kg
Ewes (2 yrs)	4.5 kg
Hoggets (ewes)	4.0 kg
Rams	6.0 kg
Lambs	1.5 kg

Table 8 Budget

<u>Income</u>	<u>Wool</u>	<u>Weight</u> <u>kg</u>	<u>Class</u>	<u>Price</u> <u>(\$/kg)</u>	<u>Nos</u>	<u>Total</u> <u>(\$)</u>
		3.4	Ewes	\$5.50	950	\$17,765.00
		4.5	Ewe (2yr)	\$5.50	222	5,494.50
		4.0	Ewe (Hgts)	\$7.00	333	9,324.00
		6.0	Rams	\$5.00	18	540.00
		1.5	Lambs	\$3.00	350	1,575.00
<u>Sheep sales</u>	Standard					\$9,295.00

(A) Total Income \$43,993.50

Variable costs standard (B) \$14,515.47

Purchases standard (C) \$ 1,200.00

N.B. Livestock reconciliation flow chart is standard for both properties.

Gross margin (A-(B+C))	\$28,278.03
Gross margin (ewe)	28.00
Gross margin (dse)	13.00
Gross margin (per \$100) livestock capital invested	96.00

Future plan

"Garfield" with the majority of the country cleared will lend itself ideally to pasture improvement. There is potential to increase productivity per head as well as per hectare. In the first instance it would be advisable to see what effect pasture establishment has on kg/head before dramatically increasing the stocking rate.

Pasture establishment costs.

Some of the lower and poorly drained country would be suitable for establishment of phalaris but a reasonable seed bed would have to be obtained as:

- a) Ground has become somewhat sour over the years and needs aerating
- b) A better strike rate is needed to ensure a thicker stand in the first year.

Seed cost

Cocksfoot	\$1.65 kg
Ryegrass (Victorian)	\$2.20 kg
Phalaris (Aust)	\$3.50 kg
Sub. clover (Siroso)	\$2.00 kg
	\$5.50 kg
White clover (Haifa)	\$5.00
Inoculation	\$0.30 kg

Fertilizer

Bulk Mo super.	\$165.50 /t.
Bags single super.	\$151.90 /t.
Cartage	\$ 18.05 /t.

Ground preparation

First plough	\$9.50/ha
Second plough	\$8.00/ha
Final scarifying	\$4.50/ha
Sowing (based on contract rate)	\$18.00/ha

Seeding rates

	<u>Established per ha</u>	
Phalaris (Siroso)	2.5kg/ha	\$13.75
White clover (Haifa)	1.5kg/ha	7.50
Inoculation		1.20
Fertilizer Mo super.	100kg/ha	16.50
Cartage		1.94
Ground preparation		22.00
Sowing		18.00

Total approx. cost \$80.79

Direct drilling

Cocksfoot (Currie)	3 kg/ha \$ 4.95
Ryegrass (Victorian)	4 kg/ha \$ 8.80
Sub. Clover (Mt. Barker)	2 kg/ha \$ 4.00
Sub. clover (Woogenellup)	2 kg/ha \$ 4.00

Herbicides

Round Up 1 L/ha	\$17.50
2,4-D Ester 500 mls/ha	\$ 3.50
Application boom spray	\$11.00/ha
"Gorilla" additive (foam agent)	\$ 2.50/ha
Direct drilling	\$ 9.00/ha
<u>Total cost</u>	<u>\$62.25</u>

Broadcasting seed with fertiliser is also feasible in steeper country. Improvement of country by way of fertiliser and pasture certainly has a direct effect on productivity. "Garfield", after pasture improvement, would improve stocking rates dramatically, kgs per head would be similar to present levels but the production per hectare would increase.