

**SHORT NOTE [NOTA CORTA]**

**USING BENCHMARKING TO IMPROVE THE FINANCIAL AND SOCIAL SUSTAINABILITY OF COMMERCIAL GOAT MEAT, CASHMERE AND MOHAIR FARMS IN AUSTRALIA**

**[USO DE LA EVALUACIÓN COMPARATIVA PARA MEJORAR LA SOSTENIBILIDAD FINANCIERA Y SOCIAL DE FINCAS COMERCIALES DE CARNE, CASHMERE Y MOHAIR EN AUSTRALIA]**

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**SUMMARY**

Production and financial benchmarking was undertaken with commercially motivated mohair, cashmere and goat meat farmers in Australia. There were large differences in animal and fleece production and financial returns between the best and worst performing farms. Farmers and industry groups reported that the process and results were helpful and resulted in them changing management practices. Benchmarking demonstrated that there is substantial scope to increase productivity and profitability through improved genetic selection and improved management of pastures, breeding flocks and in kid survival and growth.

**Key words:** Mohair; Cashmere; Goat meat; Financial returns; Management; Productivity; Profitability

Australia (Holst and McGregor, 1992). In recent years these industries have languished for a variety of reasons. Some perceive these industries as hobby industries and unattractive to commercial farmers (Chaffey and McGregor, 2004a, b). This is despite the fact that mohair, cashmere and goat meat have been exported at world parity prices throughout this period (McGregor and Butler, 2004), without subsidies, price support or other types of protection afforded to the dairy, pork, egg and wool industries. While goat meat from Australia is still largely based on feral derived goats in rangelands, in recent years Boer goats have been used to produce cross-bred goats for export from both rangelands and improved pastures in southern Australia. Benchmarking projects were established to assist each of these industries improve their production and financial performance.

**INTRODUCTION**

Benchmarking is a method of business improvement used by the largest corporations, such as large oil companies and investment banks, right down to small family businesses and family farms. Benchmarking provides evidence of how practices affect production and financial returns and can be used to identify "best practice". Benchmarking has been used by farmers in Australia for over 35 years, e.g. wool producers in western Victoria (Quinn et al., 2005). Farmers use financial benchmarking from different enterprises, such as lamb and beef production, to change farm management practices and enterprise mix. In recent years, financial and farm benchmarking in southern Australia has shown that wool production was on average not profitable (Quinn et al., 2005).

During the past 30 years the mohair, cashmere and goat meat industries have become established in

**METHODS AND MATERIALS**

Production benchmarking was conducted in southern Australia with 10 commercial goat meat farmers who farmed > 300 breeding does. Farmers completed a questionnaire during a 'one-to-one' interview covering: land use, marketing and trading, goat management, stocking rate, fertiliser use, health, husbandry, parasite control, reproduction practices and outcomes, inputs to the goat enterprise and casual labour (Ferrier and McGregor, 2002).

Production and processing benchmarking was conducted with 12 cashmere producers in Australia (McGregor, 2006). All farmers weighed a random selection of 1-year-old does each month from late spring until their second shearing in mid 2003. Most farmers also weighed other aged does or all their goats. Fleeces were sampled and tested and valued based on published prices for white cashmere. Fleeces from nine farms were prepared into 48

processing batches and processing performance determined (McGregor and Butler, 2008).

Production and financial benchmarking commenced with 15 mohair producers in Australia in 2005. Farmers weighed and sampled mohair fleeces, measured live weight of Angora goats and provided detailed financial information about enterprise and farm costs and revenue (McGregor, 2007). Mohair samples were tested for fibre quality attributes. In association with farm business economists the financial information was analysed and compared with similar data collected on wool producing farms (Quinn et al., 2005). Progress results are provided.

## RESULTS

### Goat meat

Most farms were managed by two people with an average age of 53 years of age. This age is similar to the average age of prime lamb producers. Victorian commercial goat meat producers are located generally in areas with < 500 mm average annual rainfall, usually in conjunction with other livestock and cropping enterprises. On average, 67% of farm area, equal to 701 ha (range 55–4,400 ha) were allocated to the goat enterprise. Sixty percent of farmers used dryland perennial pasture. Twenty percent of operators produced goats on annual or 'unimproved' pastures. Farm topography was predominantly flat (40%), undulating (20%) or hilly (20%). Farmers used Boer bucks, on average at 2.2%, over Boer crossbred or feral crossbred does. Weaning rates averaged 99% (range 51-165%). Supplementary feed, predominantly in the form of hay was provided on 70% of farms. There was a large range in husbandry (\$0-\$3.07) and supplementary feeding (\$6.75-\$ 9.60) expenditure. Fifty percent of farmers indicated that they carried out regular faecal egg counts to assess internal parasite burdens. Seasonal supply patterns showed that farmers were supplying Christmas and Easter markets with a live weight range of 12-40 kg and an overall average live weight of 26 kg. The supply pattern also indicates that the vast majority of meat goats are mated during autumn. The issues of concern identified by growers were: internal parasitism, doe fertility, kid predation, kid growth rate, Johne's disease, and fencing security. This study indicated that there was considerable scope to improve the productivity of the Victorian commercial goat meat industry. Most farmers supply smaller carcasses on a strong seasonal basis. This supply pattern inhibits industry development.

### Cashmere

There was a wide range in live weights and live weight change patterns. Some farms were affected by severe drought and so goats only maintained weight or lost weight. At the second shearing average

cashmere production was 141 g/head (range 69-225 g/head, Fig. 1a, 1c) and fleece value ranged from \$Aust 6.24-21.59 per fleece (Fig. 1d). The top 30% of producers averaged \$20.79 per fleece compared with \$15.11 per fleece for all producers. For all goats aged 1 to 13 years clean cashmere production averaged 134 g, range 21-389 g/head. There was a linear increase of \$1.50 in total value of fleece and carcass for each 1 kg increase in average live weight of 2-year-old does (Fig. 1b). There were large commercially significant differences between farms for clean cashmere weight, mean fibre diameter and other attributes of cashmere. These were much larger than the effects of age and sex. While age and sex were important determinants of cashmere production and attributes when associated only with farm of origin (McGregor and Butler, 2008b), when other attributes of cashmere were included, age and sex of goat was not significant in predicting cashmere production (McGregor and Butler, 2008c). The processing results show that farm of origin did not affect the processing results once other significant factors associated with processing efficiency or product length were taken into account (McGregor and Butler, 2008a).

### Mohair

Farm average live weight at weaning ranged from 12.5–18.0 kg. Farm mean live weight of does at 2½ years of age ranged from 23–39 kg. Farm mean greasy fleece weight and mean fibre diameter at the 3<sup>rd</sup> shearing ranged from 1.7-2.8 kg and 26.0-30.2 µm. The average (and range) in parameters for different farms were: rainfall 570 mm (416-672); stocking rate 5.9 dry sheep equivalents (DSE)/ha (1.4-9.8); kids born per 100 does joined 94 (49-126); greasy mohair production 4.25 kg/goat (2.9-5.5), and 2.7 kg/ha/100 mm of rainfall received (1.1-5.2) (Table 1). The net average mohair price was \$Aust 8.37 (6.33-11.78). The gross margin of enterprise income above enterprise costs per DSE for mohair was \$23.13 (9.64-34.13), compared with similar sized wool enterprises of with a gross margin of \$13.08/DSE. The wool enterprises had about twice the stocking rate of mohair enterprises and they used about 50% more superphosphate fertilizer 6.1 kg P/ha compared with mohair enterprises 3.8 kg P/ha. All the mohair enterprises had net greasy mohair prices higher than the average greasy wool prices with the average mohair price more than 60% higher than the average greasy wool price. As a consequence, the average Gross Margin/DSE for mohair was 75% or \$10/DSE higher than the average wool Gross Margin (Table 1).

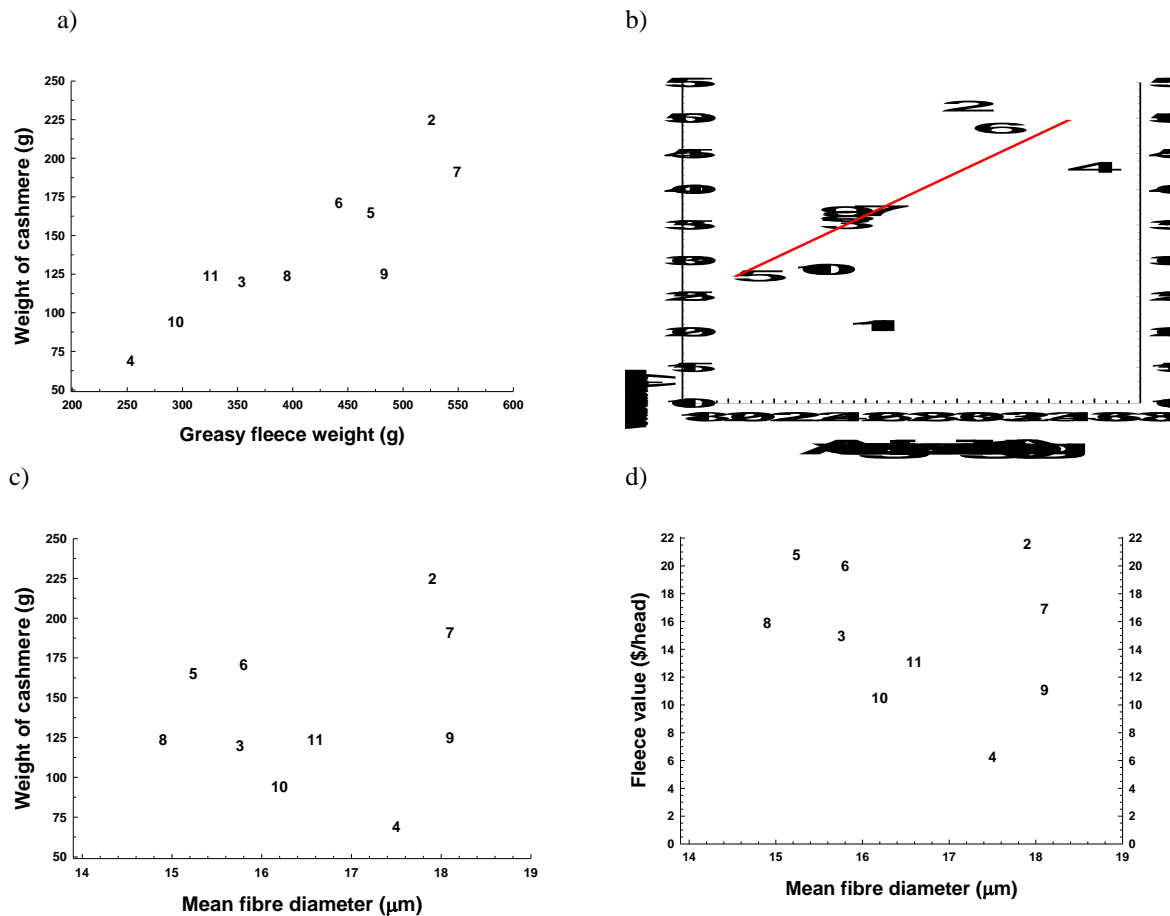


Figure 1. Relationships between mean production attributes for groups of 2-year-old cashmere does from different farms (2-11).

Table 1. Statistics from mohair enterprise benchmarking for the financial year 2004/2005, with key performance indicators. Key performance indicators are given for Victorian wool enterprises obtained from the 30 properties with the lowest number of sheep dry sheep equivalents (DSE) or the lowest total farm DSEs from grazing animals.

Measurement	Mohair Enterprises		Smallest Wool Enterprises	
	Average	Range	Sheep DSEs	Total DSEs
Farm size, grazed area ha	335	<sup>A</sup>	474	430
Rainfall, mm	550	416-672	578	551
Stocking rate, DSE/ha	6.6	2.0-9.8	10.3	9.6
Superphosphate, kg P/ha	4.9	0-16.6	6.1	5.1
Kids or lambs born / 100 does or ewes joined	94	49-126	80	77
<b>Key Performance Indicators</b>				
<b>Greasy fibre production</b>				
kg/head	4.25	2.9-5.5	5.4	5.2
kg/DSE	3.03	2.6-3.9	3.3	3.2
kg/ha	20.2	6.4-36	33.9	29.4
kg/ha/100 mm rainfall	3.4	1.0-6.3	6.0	5.4
Net mohair or wool price, \$/kg greasy	9.83	7.45-14.75	5.06	5.19
Average fibre diameter, µm	Not available		19.4	19.1
Average yield, %	Not available		70	69
Gross Margin \$/DSE	24.76	9.64-34.13	13.08	14.30
Gross margin \$/ha	159	27-227	129	135

<sup>A</sup> The range has been withheld as it might enable the identification of mohair properties

## DISCUSSION

For goat meat and mohair farmers, the reported stocking rates were lower than expected, and based on average rainfall and experience in the wool industry, suggests that farmers are not grazing at economic levels. This may be related to the very low application rate of superphosphate fertilizer on mohair farms, which was much lower than recommended for wool production. It is highly likely that improved pasture management skills and increased fertilizer use would result in substantial improvements in productivity of these farms. The average weaning rate and large range in weaning weight indicate that there are significant losses prior to weaning, possibly from sub-optimal mating management, sub-optimal nutrition of breeding and lactating does or high levels of kid mortality.

The large range in cashmere production indicates that there is substantial scope to lift industry productivity. If all cashmere producers were to achieve the average fleece value of the top 30% of producers, then the lower 70% of cashmere producers would need to increase production/goat by 64%. The cashmere industry and participating producers have changed their production systems, following participation in and outcomes of this study (McGregor, 2006). Following the distribution of the progress results of this work, the cashmere industry swiftly established an industry sire evaluation project and a web-based data recording program 'Merrit' found at (<http://www.acga.org.au/>). The processing benchmarking showed that the efficiency of cashmere dehairing and the length of dehaired cashmere can be predicted from the attributes of raw cashmere. The relationships were not affected by farm of origin despite these farms varying in climatic and environmental zones, and drought status. This has implications for how cashmere farmers evaluate goats for purchase at other farms.

The superior profitability of mohair over wool production found in this study reflects similar findings in South Africa, where mohair production was 30 to 100% more profitable than Merino wool or Dorper meat enterprises (van Zyl, 2002; Geyer, 2004).

## CONCLUSIONS

Production and financial benchmarking was useful to commercially focussed goat meat, mohair and cashmere farmers. Farmers and industry organisations changed their management practices in response to the findings of these studies. Benchmarking demonstrated that there is substantial scope to increase productivity and profitability through improved genetic selection and improved

management of pastures, breeding flocks and kid survival and growth.

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