

INTEGRATING **DAIRYING** WITH DAIRY BEEF AS A DIVERSIFICATION **OPTION** IN THE SOUTHERN SOUTH ISLAND

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Abstract

The integration of dairy beef with dairying in the southern South Island is a successful means of increasing stocking rates to *maximise* pasture utilisation when an increase in dairy cow numbers is not practical or economic.

However the 1987-88 gross margins illustrate the vagaries of the beef market and the significant *effect* the schedule can have on the viability of integrating dairy beef *even* though there was considerable optimism at the start of the dairy season. In previous years the gross margin for bull beef, when the schedule has been about \$2.00/kg was closer to \$1000/ha.

During the past season the *nurse cow* option looks the most favourable in *economic* terms, allows for more management flexibility than bull beef and achieves the aim of *maximising* pasture utilisation.

Keywords: dairy beef, dairying, bull beef

INTRODUCTION

One of the fundamentals of high economic returns on dairy farms is the effective utilisation of grass grown. Stocking rate is a key to maximising utilisation.

A number of dairy farmers are unable to achieve desirable stocking rates with dairy cows because:

1. the size of the dairy shed limits an increase in cow numbers, or
2. an increase in cow numbers requires an extra labour unit and consequent accommodation which is either uneconomic or unsuitable, or
3. the farm layout, shed position or acquisition of additional land creates undesirably long walks for the milkers.

In each of these circumstances the integration of dairy beef with dairying can effectively achieve optimum stocking rates, resulting in maximum pasture utilisation and viable economic returns.

MID CANTERBURY

Take the example of a 90-ha irrigated dairy unit where for various reasons the owner operator is not prepared to milk more than 200 cows.

Fig. 1 shows that at 2.2 cows per ha plus replacements there is little hope of maintaining pasture quality over the entire 90 ha without the high cost of topping and conservation. Both Fig. 1 and Table 1 show that by adding 90 dairy beef animals or the equivalent of one per ha there is an adequate match between grass grown and grass required at the higher stocking rate.

The overall deficit in the feed budget, assuming a 20% loss in conservation, amounts to 31 kg/day DM for a 30-day period. By grazing all the milkers out during June (at a cost of \$4.00 per head per week), therefore allowing 12 kg/day growth and 20 kg/day that the cows no longer will consume on the farm, the deficit is bridged. A minimum quantity of ryegrass straw which can be purchased for the cost of baling and transport could also be purchased to help fully feed the beef animals during winter.

Table 1: Feed budget mixed dairy/dairy beef enterprise

	Stocking rate	Feed requirements (kg DM/ha/day)											
		Months											
		J	J	A	S	O	N	D	J	F	M	A	M
Calves	0.44	4	5	5	5	6	6	6	7	7	7	7	7
Yearlings cows	0.44	4	5	5	5	6	6	6	7	7	7	7	7
	2.20	8	8	10	14	15	15	15	15	15	14	13	10
Dairy intake		20	20	24	33	36	37	37	38	38	36	35	24
Beef calves	1.1						3	3	4	4	4	4	5
Beef yearlings	1.0		5	5	5	8	8	9	11	10	10		
Total intake		25	25	29	41	44	49	51	52	52	40	39	29
Growth rate		12	13	17	48	72	64	50	49	50	40	27	13
Surplus/Deficit		-13	-12	-12	+7	+28	+15	-1	-3	-2	0	-12	-16

Total -31

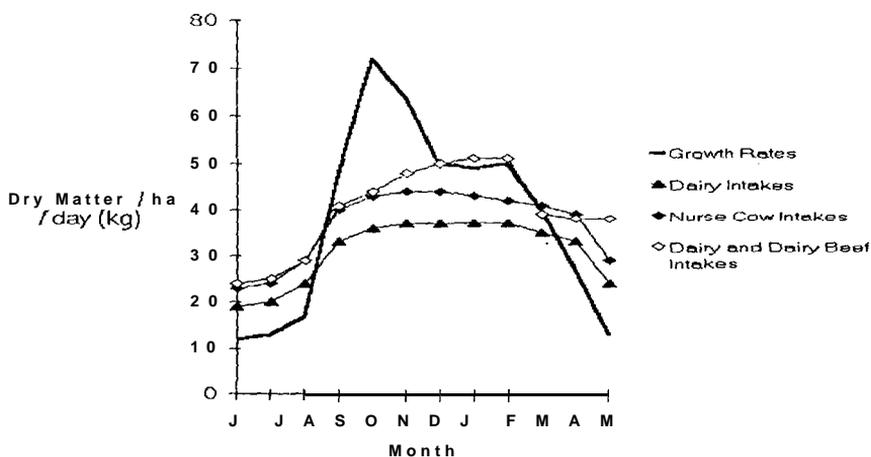


Figure 1: Mid Canterbury pasture growth rates and mixed dairy/dairy beef feed requirements

BULL BEEF

The advantages of bulls over steers is that they have higher growth rates (at least 10% after 6 months of age) and generally have higher schedule prices per kg.

The interesting aspect of both bulls and steers is the principle of liveweight gain efficiencies. From a given intake of DM younger animals gain weight much more efficiently than older, heavier animals To illustrate the point of liveweight efficiencies: from 10 kg of pasture DM 3.3, 100 kg, 2.0 200 kg, and 1.0 500 kg bulls will produce 1.65, 1.0, and 0.5 kg of liveweight per day respectively.

The bull calves should be weaned at about 70 kg around mid November as a group. The bottom 10% on weight should be sold at weaning to eliminate a tail in the mob.

On the Mid Canterbury farm some heifer calves would have to be swapped for bull calves at 4 days old to make up the 100 bull calves needed. Generally, identified

high breeding index heifer calves can be swapped easily for bull calves. Calves could be purchased if this could not be arranged.

Management of replacement and bull calves can be normal until autumn when the bulls would be split into two mobs of 45 based on weight. During winter the bulls can be held behind a wire, topping up with **ryegrass** straw for full feeding. Management problems appear to be lessened if the animals have plenty of feed. Fighting usually starts when the animals are hungry.

It is essential to use scales and a target liveweight graph. The aim is to try to achieve 196 kg carcass weight in January or 221 kg in March in order to break into higher schedule payments. If a number of bulls are below the target before winter they should be sold in the autumn sales.

The principle of full feeding still applies in spring and summer. If the mob of bulls is an even line, remains unchanged and is fully fed, management problems are usually minimal. The mobs can be rotationally grazed.

Another key to integrating dairy beef with dairy cows is grazing management. The boundaries of the milking platform should be moved in or out according to growth rates rather than the bull mobs cleaning up after the cows. The rotation length for milkers should be geared to grazing residuals. If the cows are leaving too much take out a paddock and allocate it to the bull area. In turn if the bulls are leaving too much take one of their paddocks out for silage. The reverse is the case if cows are being pinched for feed.

With this form of grazing management the yearling bulls have their own block, never get close to the milking herd, and do not have to clean up directly after milkers.

If the target liveweights have been achieved by the second summer the bulls should be killed as pasture growth patterns permit.

Although not as profitable, beef steers allow more management flexibility, less potential damage, and more security for dairy farmers unaccustomed to bull beef.

NURSE COWS

Nurse cows have been carried on Canterbury dairy units at 2.3-2.5 calves per cow. Calves are mothered on foster cows soon after birth by a variety of methods and the cows are run as a mob until weaning at about 100 kg liveweight by Christmas. Buyers this season (1987-88) were paying from **\$2.00-\$2.20/kg** for contracts on these calves. After weaning and limited culling the cows are milked once a day until drying off. One farm in North Otago carried out this programme with the cows producing 0.4 kg **milkfat** per day over the milking period.

For the example **90-ha** Mid Canterbury dairy farm, 45 nurse cows would need to be added to match the curve shown in Fig. 1. The feed deficit is less than that of the bull beef option. Grazing the milkers out over June would eliminate the deficit. Bull calves would need to be swapped on the same basis as for the bull beef option, or purchased.

Nurse cow mobs can be rotationally grazed in the same manner as the bull beef option but can be brought in behind the milkers for short spells to clean up excess residual.

The integration of nurse cows with **dairying** has the added advantage of being able to take out troublesome milkers to place with calves.

GROSS MARGINS

All the gross margins per ha have been calculated on stocking rates consuming the equivalent of 2.5 dairy cows per ha plus replacements.

Table 2 compares the various dairy beef options with dairying and grazing dairy heifer replacements in Canterbury. Opportunity costs are excluded from the gross margins.

Table 2: Gross margin comparison of dairy beef options with dairying and grazing dairy heifer replacements

DAIRY:	
Gross Revenue	\$
Milkfat 150 kg @ \$3.70. Calves .6 @ \$60, Culls .14 @ \$250	626
costs	
Breeding and recording \$20. health \$20, shed \$8, power \$20. feed \$60	126
Stocking Rate 2.5/ha GM=\$1245	496
HEIFER GRAZING: MAY. MAY	
Gross Revenue	
52 weeks \$ \$250	130
costs	
Winter feed, 250 kg silage @ 10¢/kg	25
Stocking Rate 5.4/ha GM=\$567	105
BULL BEEF:	
Gross Revenue	
210 kg carcass weight @ \$1.68/kg schedule	353
costs	
Calf @ \$60. milkfat 12 kg @ 53.70, health \$10, feed \$25, additional labour \$10	170
Stocking Rate 4.0/ha GM=5732	
STEERS:	
Gross Revenue	
195 kg carcass weight @ \$1.45/kg schedule	263
Costs	170
Stocking Rate 4.0/ha GM=5452	
NURSE COWS:	
Gross Revenue	
Calves 2.0' @ \$210, milkfat 120 days X 0.4 X 53.70 X 0.9 culls 0.14 @ \$250 (* 20% used as replacements)	615
costs	
Health 525, breeding \$5, shed \$4, power 510. additional labour \$10, calves 2 @ 560	
GM = 5976	391