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Integrated bull beef with sheep in eastern Southland

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Background

I have been farming full-time on my own account for eight years, after seven and a half years in Advisory Services Division with the Ministry of Agriculture in Gore.

While I was employed by the MAF, I was leasing 60 hectares and working it part-time.

My first five years of full-time farming were share-farming the property I am currently leasing. At the conclusion of the sharefarming agreement a company wasformedinwhichmy wife and I bought at 25% share. We lease the farm from the company.

The property

It is 213 hectares (200 effective) of mixed contour; approximately a third is flat, a third rolling and a third steep. The farm is low altitude with a small amount of gold dredge tailings sown with chicory but mainly a very heavy clay which has poor drainage. The soil type is mainly Waikoikoi, which is fertile.

Climate

Average rainfall over the last five years is approximately 1000 mm but is very variable. Winters are generally cold and wet - 120 days. While I have been on the property we have experienced three years out of eight where summer potential has not been realised due to moisture stress over the summer. The steep ridges and the dredge tailings burn off first.

Stock

Sheep - we are running	1900	ewes (Coopworth)
	500	hoggets
	200	recorded Coopworths
	120	Recorded Poll Dorset - Texels
	100	Recorded Ram Hoggets
	20	Rams
	10	Killers
	2744	**s.u.**
Cattle -	**30**	**rising 1 year bulls**
	30	**rising 2** year bulls
	300	**s.u.**

Total s.u. 3044 on 200 effective ha = 15.22 su/ha (not performance corrected).

Fertiliser

250 kg/ha sulphur super
2.5 t lime/ha every five years
100 kg urea/ha on cattle area in spring
250 kg/ha K super on silage and hay areas

Cattle policy

All cattle are wintered only once.

25 calves are bucket reared
25 calves are purchased in the autumn
50 killed at 18 months
30 18 month bulls purchased in the autumn or early winter
30 killed at under 30 months (pre Christmas)

Calf rearing

Calves are purchased at 40 kg plus four days old. They are fed twice a day for two weeks with ad lib. meal, after two weeks they are fed once a day with meal. Before weaning calves are dehorned by the MAF dehorning service using a hot iron. They are then weaned at 8-9 weeks at 75 kg. Once weaned they are fed high quality pasture approximately 2000 - 2500 kgDM/ha, shifted regularly once 20% has been utilised. They are drenched with Levamisole, weighed monthly, and a pour-on lice control is used as required.

Cattle management

Calves are rotated on grass from early May until the end of the month. At the end of the month they are treated with a pour-on Ivomectin and weighed before going onto silage.

We are aiming at calves being as heavy as possible with **a minimum of 250 kg. Most years they average between 260-270 kg.**

The cattle are on silage for approximately 110 days from 1 June through to 20 September.

We have a double-ended silage pit with a capacity of approximately 500 t. It is situated in an agro forestry block. We have two mobs self fed ad lib. The rising two year olds are at one end of the pit and the rising one year olds are at the other end. The pit is 10 m x 40 m x 2 m deep, which enables 20 weaner and 15 two year olds to feed at once. When the first sitting from each group go to the trough for water the second sitting takes up position. The electric wire is shifted twice daily to allow the last sitting to have access to the silage.

There is usually a small percentage that don't take to silage; they are separated and wintered on a brassica.

The advantages of our silage wintering system are as follows:

1. The cattle are warm and dry at all times therefore their intake is reduced and their liveweight gain is better than it would be out in the open. The average winter liveweight gain over the last three years has been around 300 g/day.
2. The cattle are off the pastures; therefore damage is at a minimum.
3. All the cattle can be visually assessed daily.

We are considering growing a crop to reduce the area needed to make pasture silage.

We have tried maize and oats in different years. The results have been pleasing.

Silage

This year we have oat and pasture silage about half and half, approximately 200 t 30% DM. We aim to feed about 5.5 kg DM (19 kg fresh weight) to the rising one year calves, and to the rising two year olds, 7.5 kg DM (25 kg fresh weight).

Early-growing, free-draining paddocks are selected around mid-August. When the soil temperature gets to 7°C and rising, urea is applied at the rate of 50 units/ha.

By mid-September these paddocks are producing close to 2000 kg DM/ha.

Spring management

The cattle come off the silage when it is eaten around 20 September; they are then divided into three mobs: two mobs of 25 yearlings and one mob of 30 two year olds. They are all weighed off the silage. The yearlings are usually close to 300 kg with the twoyearolds around440 kg. The cattle are weighed every month until they are killed. The three mobs of cattle are on about a 20-day rotation, being shifted about every three days. We aim for about a 40-50% utilisation. Once feed starts getting ahead of ewes and lambs in late November the cattle are moved off their rotations to control feed on the sheep area. Part of the cattle rotation area is then shut up for hay.

The rising $2^1/_2$ year olds are fed the highest quality feed available and are killed just pre-Christmas. At that time the schedule is usually high at about 285-295 c/kg: 20 December - 550 kg LW @ 56% = 308 kg.

Once the spring rotation starts, the growthrate. if all conditions are right, is over 1000 g/day.

We start killing 1 I-month-old bulls in early February with the last being killed at the end of April.

Summer/autumn management

In the summer/autumn the cattle move onto the pasture first to take the top off before the seed head appears, they are followed by lambs and then ewes **to clean up.**

The quantity and quality of feed are the most important factors to get the best results. The season determines the weight we kill the Id-month-old bulls. If we have a good season with plenty of feed we can take bulls through to about 530 kg LW, in other seasons we kill at 500 kg LW.

530 kg LW @ 55% = 291.5 kg
500 kg LW @ 54% = 270.0 kg

Advantages of cattle for summer/autumn management

1. Reduce tractor hours on the topper.
2. Internal parasite contamination is reduced.
3. Pasture quality is maintained.

Bulls do have some behavioural problems

They have a distinct hierarchy which causes fighting. digging holes and homosexual activities. I have a donkey which reduces many of these problems. They can become very territorial but regular shifting avoids this. Once the different mobs are established avoid adding strangers as this disrupts the hierarchy and fighting occurs.

I try to avoid having different mobs in sight of each other; if they are I have at least two paddocks between them.

To keep fence damage to a minimum your electric fence system must be extensive and reliable. Good feeding can help to keep behavioural problems to a minimum.

Summary

To achieve maximum results high quantity and quality feed must be available. This also minimises the behavioural problems.

Disadvantages

The main disadvantage is the unique behavioural problems which can cause some fence and pasture damage.

Advantages

1. **Bulls are very good for controlling and utilising surplus feed**
2. **Their feed requirements are lower than sheep/su in spring and winter but higher in summer and autumn when feed is available, which**
3. **Reduces tractor hours to maintain feed quality**
4. **Internal parasite contamination is reduced which is an advantage for lamb finishing**
5. **Their labour input is less than for sheep**
6. **In the 1992 autumn bulls were nearly twice as profitable as sheep on a per su basis**
7. **Bulls are very complementary to a sheep operation in Eastern Southland**

Gross Margins

18 month Bull beef	Cost/head
Purchase and rearing costs of calves	320
Animal Health	10
Freight In	5
Wintering on silage 2.2 t @ $10 t	22
Interests on Capital Cost of purchase @ 11%	35
Freight to Works	12
Works Deductions	10
Total Cost	414
Total Income 285 cwt X 265 c/kg	702
Total Profit/bull	288
1 18 month bull = 4.5 su	
288 4.5 su = $64/su	
288 3.7 su = $77.80/su	
Sheep	
cost	
Shearing	2.75
Breeding	1.00
Animal Health	2.00
Wintering @ 1 bale/ewe	3.00
Interest on capital cost $35 ewe @ 11%	3.85
	$12.60
Income	
5 kgs @ $3.50	17.50
105 (1.3 • 0.25)	31.50
Total Cost	49.00
Gross Margin/su	36.40

MJME Requirements

	Spring Oct/N/Dec	Summer Jan/F/Mar	Autumn Apr/May	Winter Jun/Jul/Aug/Sept
Bulls	290 kg	440 kg	530 kg	265 kg
Growth	1250g/day	1000g/day	750g/day	300g/day
MJ day	94	110	115	54
Davs	91	91	61	120

Annual Requirements

	Spring Oct/N/Dec	Summer Jan/F/Mar	Autumn Apr/May	Winter Jun/Jul/Aug/Sept	Total
Breeding ewe and lamb and replacements	3185	2138	1494	1830	8647
Bulls	8554	10010	7015	6588	32167
MJME/su	2311	2705	1895	1780	8693

Substitution rate 3.7:1.0