



agriculture & rural development

Department:
agriculture
& rural development
PROVINCE OF KWAZULU-NATAL

PASTURES IN KWAZULU-NATAL

Pasture Production Systems

SHEEP SYSTEM INCORPORATING PASTURES

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INTRODUCTION

High net farm incomes can be realised by farming with sheep. However, careful planning, a fair amount of capital and above average farm management are pre requisites for high profits from sheep farming.

Each farmer needs to work out the best sheep system for his farm.

The sheep system to be discussed in this leaflet provides guidelines and is suitable for adaptation to the individual farm.

THE OVERALL SYSTEM

The ewe could be run on veld or kikuyu for the summer months and on maize stalks or kikuyu foggage for the winter months.

Lambing down in autumn would be on kikuyu or irrigated Italian ryegrass/clover. The ewe would return to kikuyu foggage or go to maize stalks once the slaughter lamb has been weaned at a mass of 18 kg.

The following depicts the activities and the timing of activities of a possible slaughter lamb system.

- Mate: 9 October - 30 November (ewes on veld or kikuyu)
- Lamb: 9 March - 30 April (on kikuyu or irrigated ryegrass/clover)
- Wean: June/early July at 18 kg (ewes to foggaged)
- Kikuyu: lambs remain on irrigated ryegrass/clover)
- Market lambs: September/October at 40 kg (off irrigated ryegrass/clover)
- Stocking rate: 25 to 30 ewes plus their lambs per hectare of irrigated ryegrass/clover

Once the lambs have been marketed, *i.e.* by 15 October, the irrigated ryegrass/clover pasture could be used for:

- steaming up the ewes in order to improve fecundity;

- sheep speculation purposes;
- growing ryegrass seed for home "consumption";
- steaming up beef cows, prior to calving, or for calving down purposes;
- grazing by beef long yearlings.

These five options are discussed in greater detail under the heading "post marketing strategy".

SUMMER GRAZING FOR THE EWE

Veld

The ewe could utilize veld during the summer. There are two important points to bear in mind when running sheep on veld.

- Firstly, sheep are selective grazers and can selectively graze, or rather overgraze, the desirable veld grasses, leading to possible degradation of the veld. The stocking rate of sheep on veld is of cardinal importance.
- Secondly, sheep should never constitute more than 50 % of the animal units that graze on the veld.

Thus, for example, a Highland Sourveld area may have a grazing capacity of 1 animal unit (AU) per ha (*i.e.* 6 sheep/ha for the grazing season). However, 50 % of the 1 AU/ha should be sheep and 50 % should be cattle. **Therefore, graze no more than 3 sheep/ha of veld.**

Since most farmers have paid for the land they do not see the allocation of veld costs to the ewe as an actual cost. However, the farmer who has to borrow the capital to buy the veld is subject to interest charges and thus the interest charge per sheep per year. Table 1 gives the cost of carrying a ewe through summer, based on the land value of veld.

TABLE 1. The effect of land value on the cost of carrying a through summer

Value/ha of veld (rands)	Sheep/ha	Interest rate *	Interest per sheep
100	3	14 %	R 2,30
200	3	14 %	R 4,65
300	3	14 %	R 7,00
400	3	14 %	R 9,30
500	3	14 %	R11,65

* Interest rates vary over the year and from year to year

Kikuyu

Should the ewes be run on kikuyu, say at a stocking rate of between 27 and 60 x 50 kg ewes/hectare, the cost of the kikuyu pasture per year should be costed against the ewes. Assuming a topdressing cost for kikuyu pasture of R500/hectare, at 60 ewes per hectare of kikuyu, the cost per ewe would be R8,33/year.

Variable costs

In addition to grazing costs, yearly variable costs should be allocated to the cost of "running" a ewe.

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	Possible variable costs/ewe
Variable	Variable
	Rands
Labour	3
Lick	6
Veterinarian	8
Miscellaneous	2
TOTAL	<u>19</u>

Depending on the price of wool, the income from 4 kg wool derived from 1 ewe could return the following:

	Rands
4 kg x R7,50/kg wool	30
4 kg X R10,00/kg wool	40

Thus the income from the wool could cover the variable costs of the ewe.

Obviously the costs and gross income varies from farm to farm and year to year. The object of the above exercise is to make the farmer conscious of costs pertaining to the ewe. By keeping accurate updated records the individual farmer can work out the costs and income on his farm.

WINTER FEEDING OF THE EWE

The winter feeding of the ewe plays an integral part in the overall profitability of the sheep enterprise.

A maize crop yielding 4 tons of grain/ha could carry 6 ewes/ha for 120 days of the winter on the maize stalks once the grain has been harvested. This is a relatively cheap winter feed since the stalks are a by product of maize grain production. The cost of production of the maize has been costed against the grain enterprise.

The rams should be allocated a defined area of irrigated ryegrass/clover or fed on kikuyu foggage plus a concentrate.

SLAUGHTER LAMB PRODUCTION

Lambs born between 15 March and 30 April are grazed with the ewe on kikuyu and then on irrigated ryegrass/clover. When the lambs reach 18 kg live mass the ewe is removed from the irrigated ryegrass/clover. The ewe is then fed on maize stalks or kikuyu foggage. The lambs remain on the irrigated ryegrass/clover until they reach marketable mass, that is, about 40 kg.

The stocking rate norm for sheep on irrigated Italian ryegrass/clover should be from 25 to 30 ewes, with at least 30 lambs per ha. The limiting factor is the feeding of 30 lambs during the mid-winter period (June and July), whilst on the ryegrass/clover.

Gross income

The gross income/ha from the lambs is depicted by the following formula:

$$G.I. = N \times P \times W$$

Where *G.I.* = gross income/ha

N = number of lambs/ha

= number of lambs/ha

P = price/kg live mass

= price/kg live mass

W = final live mass (mean for all lambs)

= final live mass (mean for all lambs)

For example: [30 lambs x (R3/kg x 40 kg)] + [30 lambs wool x (1 kg x R6)] would result in a gross income of R3 780/ha.

Variable costs

The variable costs involved in slaughter lamb production are represented by the following formula:

The variable costs involved in slaughter lamb production are represented by the following formula:

$$\text{Variable costs} = R + V + T + L + M + S$$

Where *R* = Irrigated ryegrass/clover cost/ha

V = veterinary costs/ha

T = Transport cost/ha

= Transport cost/ha

L = Labour cost/ha

= Labour cost/ha

M = Miscellaneous costs/ha

= Miscellaneous costs/ha

S = Shearing costs

= *Shearing costs*

= Veterinary costs/ha = Transport cost/ha = Labour cost/ha = Miscellaneous costs/ha =
Shearing costs

For example, assuming R1 950 for the ryegrass/clover pasture and R1 242 for the other variable costs for 30 ewes and 30 lambs) the total variable costs would be (R1 950 + R1 242) R3 192.

Gross margin per hectare

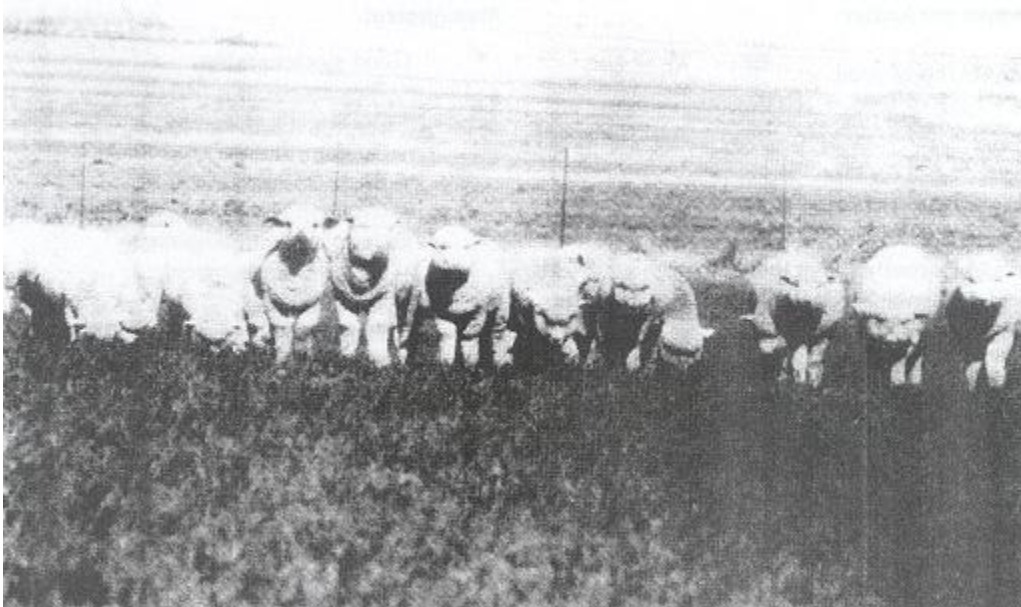
From this example the gross margin per hectare would be:

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gross income less variable costs would be

= (R3 780 - R3 192) = R588

Profit per hectare = R588



Sheep on pasture

POST-MARKETING STRATEGY

By the middle of October all the slaughter lambs should have reached 40 kg live mass and should have been marketed.

What could be done to utilise the irrigated ryegrass/clover after the 15th of October?

There are several possibilities, some of which are briefly discussed.

- **Speculation, per hectare of irrigated ryegrass/clover**

Lambs could be purchased: say 70 lambs of 26 kg. Naturally the purchase price is the key to the profitability of the speculation exercise. The average daily gain of the purchased lambs should be of

the order of 170 g. Thus about 85 days are required for the purchased lambs to reach a marketing mass of 40 kg.

Cost of the speculation (per ha)

	Costs/ha
70 lambs x 26 kg x R2,50/kg live mass	R4 550
Veterinary and dosing	R 310
N (topdressing of pasture)	R 100
Transport x 2 + marketing costs + labour	R1 410
Shearing costs	<u>R 98</u>
TOTAL	<u>R6 468</u>

However, if the purchase price was R3,00/kg live mass, the total costs would be R7 378.

*Income per hectare from speculation
Allowing for a mortality of 7 % :*

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	Income/ha
65 Lambs x 40 kg x R3/kg are sold for	R7 800
65 Lambs x 1 kg wool x R4/kg	<u>R 260</u>
TOTAL	<u>R8 060</u>

Gross margin per hectare = (R8 060 - R6 468) R1 592

= (R8 060 - R6 468) R1 592

Note:

Interest has not been charged against the exercise and should be taken into account if money is borrowed.

In the above example the margin/ha from selling the home grown lambs and speculation is:

R588 + R1 592 = R2 180/ha

- **"Flushing" of ewes**

Fifty to seventy ewes/ha could be brought back onto the ryegrass/clover to give them a rising plane of nutrition, prior to and possibly during the mating period.

- **Growing out ryegrass for seed**

Allowing the ryegrass to set seed, once the initial 30 lambs/ha have been marketed, could result in 400 kg of seed being harvested in December. This ryegrass seed could be used for undersowing the maize crop during January/February.

Gross margin per hectare

Assuming R1/kg of seed:

400 kg x R1/kg of seed = R400 gross income

Less R180/ha for combining, bagging and transport

Gross margin per hectare = (R400 - R180) = R220

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Gross margin from selling home-grown lambs and harvesting seed could be R588 + R220 = R808/ha

- **Beef cows**

The irrigated ryegrass/clover could be used for flushing beef cows and possibly for grazing whilst the cows calve down. The October flush of irrigated ryegrass/clover could compliment the feeding of maize stalks for the months of July, August and September.

- **Long yearlings**

Long yearlings, having possibly been fed maize silage or allowed to graze maize stalks during the winter, could be brought onto the irrigated ryegrass/clover at a stocking rate of 8 long yearlings/hectare. The long yearlings could gain 0,5 kg live mass/day. The long yearlings could be on the pasture from October into January, some 100 days.

50 kg gain/long yearling, at R3/kg live mass = R1 200/ha.

CONCLUSION

As shown above, slaughter lamb production of both home grown and bought lambs on irrigated ryegrass/clover could lead to a profit margin of between R588 and R2 180 per hectare.

However, the key to success lies in paying particular attention to management and being aware of practical problems.

Management

- Good stockmanship
 - Pay attention to detail
 - Be acutely observant
 - Acquire the necessary technical skills
 - Keep accurate records
 - Evaluate all sheep actions economically
- Good pasture management

- Grazing management
- Fertilisation
- Irrigation
- Stocking rates

Awareness of practical problems

The following is a list of practical problems that are often encountered. Awareness of these problems can lead to avoidance of the problem and thus improve profitability.

- Lambs have a low average daily gain
- Parasites in the sheep
- Coccidiosis in the sheep
- Foot-rot
- Dirty drinking water
- Insufficient consultation with Veterinarian
- Animals do not get enough roughage
- Too much high fibrous roughage
- Ewes are not performance tested
- Not flushing the ewes
- Not weighing the sheep
- Penning ewes at night
- Incorrect breed/type
- Untrained sheep dogs
- Theft
- Predators
- Establishing Italian ryegrass (pastures) too late
- A very cold pasture site
- Insufficient detail paid to pasture establishment (seedbed preparation, seeding, weed control, basal fertilisation)
- Insufficient irrigation on the pasture
- Insufficient nitrogen on the pastures
- Not including clover