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PROVINCE OF KWAZULU-NATAL

DAIRYING IN KWAZULU-NATAL

Pasture Systems for Dairying in KZN

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POSSIBLE PASTURE SYSTEMS FOR A 150 HOLSTEIN-FRIESLAND DAIRY COW MODULE

A high net profit per dairy cow per year should be the main aim of the dairy farmer. Profit per cow is linked to the cost of the forage system used for the herd over the 365 days in the year. It is therefore important to look at some recommended pasture systems suggested for Natal dairy farmers.

As an example, the following possible dairy module, for a Holstein-Friesland herd of 120 lactating cows plus followers, will be discussed:

Class of animal	Mature cow equivalent
120 cows in milk	120
30 dry cows	30
30 two-year old heifers	30
30 one-year old heifers	15
30 heifer calves (under 200 kg mass)	0
Total 240	195

The number of animals, weighing approximately 500 kg, would be derived from all the above age groups, excluding the calves which, in the main, are fed on concentrates. A yearling heifer, for grazing purposes, is considered as half of a mature cow. By calculation, 195 cows would have to be supplied sufficient pasture dry material, so that each animal could grow, or produce milk, or maintain its condition, depending on what was required of that animal.

System 1 (for 195 cows in Bioclimate 4, and parts of 3 and 6)

60 hectares irrigated annual ryegrass/clover
38 hectares dryland kikuyu
20 hectares dryland fescue
22 hectares dryland kikuyu foggage

This pasture system is suitable for the **very cold, frosty areas of Natal**

The annual ryegrass/clover pasture should be seeded at the rate of 30 kg seed of annual ryegrass plus 5 kg of Ladino clover per ha. Fertilization would be according to soil sample analysis, and irrigation water supplied so that the total precipitation is of the order of 10 mm every 5 days, but soil type, aspect and temperature are some of the factors that play a role in determining the amount of irrigation water that should be applied to the pasture.

During the four mid-winter months the irrigated ryegrass/clover area would be used entirely for the milk cows, which would also graze on the 20 hectares of fescue foggage. The heifers would graze the kikuyu foggage, plus a supplement, during the mid-winter months.

During the **summer** months, the dry stock would follow the milk cows, which would be grazing on:

the kikuyu,
the fescue,
the dominant clover component in the ryegrass/clover

System 2 (for 195 cows in Bioclimates 2 and 3)

50 hectares irrigated annual ryegrass/clover
38 hectares dryland kikuyu
20 hectares dryland fescue
22 hectares dryland kikuyu foggage

This system is similar to System 1, but includes only 50 hectares of irrigated ryegrass/clover. This system would apply to the **warmer** areas of Natal, where the winter is considered to be of the order of 120 to 130 day duration.

System 3 (for 195 cows in Bioclimate 4)

150 hectares of irrigated perennial ryegrass/clover
20 hectares kikuyu
20 hectares dryland fescue
20 hectares dryland fescue foggage
20 hectares kikuyu foggage

This system could be applied to dairy cows in the extremely cold, frosty areas of Natal.

System 4(for 195 cows in Bioclimates 10 and portions of 8)

75 hectares irrigated perennial ryegrass/clover
10 hectares irrigated Ladino clover
20 hectares irrigated kikuyu
20 hectares dryland coast cross 2 foggage.

This system could be applied in the very hot inland areas of Natal.

System 5 (for 195 cows in Bioclimates 2 and 3) 40 hectares irrigated annual ryegrass/clover

20 hectares dryland kikuyu
20 hectares irrigated fescue/clover
20 hectares dryland fescue foggage

This system could be applied in the warmer areas of Natal.

PASTURE MANAGEMENT AND UTILISATION

The pastures should be used as follows:

Milking cows should graze the pasture lightly, after which the pasture should be further grazed by a heifer herd. Should the pasture still not be sufficiently well utilized, a third herd should be brought on to graze most of the remaining grass. If possible, the grass must not be grazed lower than 75 mm. It is important to use a "back" fence (electric) to ensure that the grazed pasture re-grows immediately. Once there is sufficient dry material re-growth for the 150 cows, the pasture should be grazed again.

The above systems have not been proved on any research station, but have been undertaken by farmers in the various areas of Natal, and have proved to be very effective on their farms.

Where there has been a surplus of grass, more stock has been purchased so as to utilize the grass. However, where the farmer has had insufficient grass, the top yielding 25% of the milk cows can be put onto a complete feed ration for the "short feed" situation of 6 weeks. Note: Complete feed is not recommended, but could be used, temporarily, as a dairy cow ration.

The above systems are only suggested for guidance, as ultimately each individual farm, with all its influencing factors, will develop its own economic dairy/pasture systems, from experience gained once using these guidelines.

One of the above five systems, with possibly a few **minor** modifications, could be applied on any Natal dairy farm.

TEN GOLDEN RULES OF PASTURE MANAGEMENT

1. Do not subject the pastures to more than four days continuous grazing.
2. Graze a pasture only after it has had sufficient time to recover fully from the previous grazing. This could be as soon as two weeks in summer, or as long as eight weeks in winter.
3. Use the pastures before they deteriorate because of over-maturity.
4. Avoid damaging pastures during wet or frosty weather.
5. Graze pastures tightly enough to eliminate, as far as possible, the production of seed heads.
6. Do not graze too severely during hot periods.
7. Cherish clover, for it supplies nitrogen and improves quality.
8. Utilize the pasture as grazing, conserving only that which is surplus to stock needs.
9. Prevent the gross transference of fertility by stock, by avoiding night and day paddocks, by contour fencing when

necessary, and by selecting hay and silage paddocks carefully.

10. Top-dress paddocks with appropriate fertilizer at such times to ensure growth when it is most needed.

FURTHER READING

CO-ORDINATED EXTENSION COMMITTEE FOR NATAL, 1991. *Pastures in Natal*. (Agricultural Production Guidelines for Natal). Pietermaritzburg: Department of Agricultural Development.