agriculture
& rural development
Department:
agriculture
& rural development
PROVINCE OF KWAZULU-NATAL

PASTURES IN KWAZULU-NATAL

Pastures Utilisation

IRRIGATION

Irrigation *per se* will be extensively covered in the Production Guideline series "Irrigation in Natal". There are, however, certain points which are more specific to pastures and therefore worth repeating.

Soil type and pasture species determine the infiltration rate, volume of water required and hence nozzle size required. Nothing is achieved by exceeding either the infiltration capacity of the soil or the pasture species requirements. The object of the irrigation system is to supplement the natural rainfall to ensure that the zone between the soil surface and 25 mm below 80 % of the roots is kept permanently moist. This may require irrigation as frequently as every three days during February/March or as seldom as every three weeks during July.

SOME GUIDELINES

In practice, on soils with a 30 % clay content and higher, the deeper rooted temperate pasture species such as tall fescue and Italian ryegrass require 25 mm of water at least every 10 days, preferably every 7 days. Shallow rooted pastures species (white clover, perennial ryegrass) require 25 mm of water at least every 7 days, ideally 12 mm every 5 days. Mixed swards (ryegrass/clover) are treated for the most sensitive component. Rainfall of 3 mm and less is ignored when calculating the extent to which the rainfall must be supplemented.

It should also be pointed out that the temperate perennial swards, especially perennial ryegrass and to a lesser degree tall fescue, require irrigation during the summer heat to keep the swards cool and moist and thus to promote the longevity and productivity of the pastures.

Over-irrigation

Over-irrigation will not only waste costly irrigation water through run-off, but may also leach out

nutrients from the soil profile. As a result, irrespective of designed stand-time, once the soil profile is saturated the sprinklers should either be moved or the irrigation system shut down, until the profile has dried out sufficiently to require irrigation once again.

Area under irrigation

It is suggested, in the interests of efficient management, that an area no greater than 30 ha in extent be placed under irrigation, unless mechanical methods of irrigation are envisaged. Furthermore, should water, labour or any other factor be limiting, it is more profitable to manage a smaller area efficiently in all respects than to manage a larger area poorly.

Strategic or supplementary irrigation

Irrigation of summer pastures is not recommended unless a **thorough feasability study** has indicated the viability of such an enterprise. However, strategic, or early season irrigation (provided temperature is not a limiting factor), may be beneficial if an irrigation system can be "borrowed" from an existing enterprise on the farm.

In normally humid areas supplementary irrigation can be accompanied by an increase in plant diseases and insect pests. These diseases and/or pests would normally occur at a lower level if the area was not being irrigated. Control must therefore be swift and effective once they are observed.

Compaction

Beware of compaction of the soil surface by the livestock grazing the pasture. Compaction results in loss of irrigation water and nutrients through run-off. Commercially manufactured machines are available to aerate the pasture, thereby improving infiltration and maintaining the levels of dry matter production that are expected under intensive conditions.