

Toorak Research Station

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Plate 1. Dry winter pasture at Toorak Research Station.

The Toorak Research Station was established by the State Government in 1951 to research sheep production problems in the region.

The station comprises 15 000 ha of open Mitchell grassland characteristic of the vast clay soil plains of the semi-arid north and central west.

It is situated approximately 50 km south of Julia Creek and has an average annual rainfall of 400 mm. Droughts are common. Sheep numbers in the north-west fluctuate greatly as a result of the extreme variation in seasonal conditions. Currently there are 1.5 million sheep in the north-west region — 10% of Queensland's sheep population.

During the last three decades, research has been conducted at Toorak to define factors which limit sheep and wool production in this harsh environment. Sound, practical husbandry recommendations that can overcome these limitations benefit sheep producers both locally and nationally.

Current research aims to improve nutrition and management of sheep flocks.

Examples of research projects

Improving sheep nutrition

- Improving the way sheep digest feed in the dry season and increasing the amount of nutrition they gain from supplements.

Increasing lamb survival

- Identifying those wet season herbs which, when grazed by the ewe, have a harmful effect on her foetus. Attempts are being made to isolate the responsible substances (foetotoxins) contained in the plants(s) and identify practical management strategies to minimise the effect of these toxic plants on lamb survival.

Improving pasture

- Native pasture quality and grazing animal production is improved by



Plate 2. Jetting ewes.

introducing exotic perennial legumes. Many plant species are being evaluated, including those of the genus *Desmanthus* which are important fodder plants in other parts of the world, for their ability to survive, grow and reproduce in harsh climates. Leguminous plants successfully incorporated in the native pasture will enhance its nutritive value for sheep as well as the fertility of the soil.

Increasing production

- Demonstration flocks are used to evaluate sheep management guidelines resulting from this work. For example, providing shade for pregnant ewes and access to drinking water for young lambs has been shown to improve lamb survival and hence profitability of a breeding enterprise. Early results from the ewe demonstration flock show that much higher levels of productivity can be achieved by adopting basic practical recommendations, found through research.

In addition to its main research role, the station is an important resource base for this remote area of the State. Staff presently number 12, half directly involved in research or extension activities and the remainder involved in the management and upkeep of the station. These people extend new technology and provide advice and assistance to local graziers through field days, scientific publications, rural press and radio.