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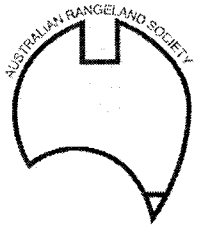

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WATERPONDING AND FORAGE PRODUCTION FOR COST-EFFECTIVE SCALD RECLAMATION (VICTORIA RIVER DISTRICT, NT)

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ABSTRACT

Construction costs of waterponding banks for scald reclamation in Victoria River District (VRD) can be prohibitive. Cost recovery of construction with a station-owned grader, through increased production, may take 6 years.

In the short term, construction costs may be recovered by establishing forage sorghum, permanent pasture grasses, or legumes for hay, seed production or grazing.

INTRODUCTION

In the VRD, over 300 square kilometres of scalded country have been identified (Condon 1986).

In 1989, a non-saline sodic scalded area was ponded using waterponding technology as developed in NSW. Re-establishment of vegetation was largely dependent on self-sown native pasture seed.

With a view to accelerating cover increase and organic matter production, numerous improved pasture species were tested.

In 1990, after consideration of ponding bank construction costs, improved pasture species testing was extended to gauge the potential for cost recovery.

METHODS

Construction

A 130G Cat. grader was used to construct 43 ponds over 17ha, according to construction methods described by Rhodes (1987).

Borrow areas were ripped to enable sufficient soil to be won for banks. Banks were constructed to design height and width in 5 or 6 passes. Of the pond areas, 33 were ripped. Ten were not ripped for comparative purposes.

Improved pasture species testing

Improved pasture species were selected for tolerance to waterlogging, known suitability to area, ability to withstand a long dry season or organic matter production.

In 1989, 18 improved pastures species were planted, such as *Sorghum* spp. hybrid cv Silk, buffel grasses (*Cenchrus ciliaris* cvs), Sabi grass (*Urochloa mosambicensus*), Koronivia grass (*Brachiaria humidicola*) and legumes, *Stylosanthes* spp and *Centrosema* spp.

In 1990, waterponding was extended to more scalded areas on Kidman Springs and Auvergne Station. Whole pond areas were planted to the best performing pasture species of 1989 trials.

RESULTS

Costs of construction

If only fuel costs are considered @ 70c/L, the cost of construction using a station grader would have been $24/ha for bank construction and $6/ha for pond ripping.

Cost of construction with a hired grader @ $80/hour would have been $158/ha for bank construction and $38/ha for ripping.

Pasture establishment

Native annual pasture establishment was substantial after the first wet season. The proportion of perennial species increased over subsequent years.

Ripping pond areas was beneficial to native pasture establishment and was required to assist cultivation for improved pasture planting.

The most vigorous, high yielding and persistent improved pasture species to establish in 1989/90 included buffel grass (all cultivars), Sabi grass and Silk sorghum. These species, along with several others were planted to larger waterponded areas in late 1990.

High yielding stands (not quantified) of several species were established, achieving good coverage of scalds. The most consistent and highest yielding species were forage *Sorghum* spp.

DISCUSSION

Construction costs of waterponding in the VRD, particularly in the context of an extensive grazing system, are very high.

In a simplistic economic analysis, the gross margin of running steers in the VRD is approximately $5.80/ha/year (Sullivan 1991). With the construction of ponding banks using a station-owned grader costing up to $30/ha, cost recovery through additional production (on native pastures) would take at least 6 years. The cost of construction at commercial grader hire rates is prohibitive, unless the value of production on the ponded area can be greatly enhanced.

Most stations in the VRD require good quality hay for stockfeed. Many stations import hay at considerable cost ($3/square bale plus freight). Several stations have hay-making equipment and cut native pastures or attempt to grow forage crops on unreliable and often inadequate rainfall.

Waterponding on scalds for forage production is attractive because: no land clearing is required, water conservation aspects of ponding guard against dry spells, and organic matter production will assist scald reclamation.

The gross margin of growing sorghum for hay in the Katherine Region NT is approximately $175/ha (Sullivan 1991). Stations with access to hay-making equipment could therefore recoup construction costs very quickly.

Other options include establishing self-replacing or perennial pasture grasses and/or legumes for hay, forage or seed production.

While more research into planting methods is required, improved pasture species on ponded scalds enable rapid reclamation and have the potential to make a valuable contribution to the good quality forage requirements of a pastoral enterprise.

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