

Increasing seeding rate does not improve legume establishment in undisturbed buffel grass pastures

G. Peck^{A,C}, B. Johnson^A, J. O'Reagain^A, G. Kedzlie^A and S Buck^B

^A Department of Agriculture and Fisheries, PO Box 102, Toowoomba 4350

^B Department of Agriculture and Fisheries, PO Box 6014, Rockhampton 4701

Introduction

Although good establishment is recognised as critical to the long term persistence of legumes, many producers don't think they can afford to use more expensive seedbed preparation to allow establishment. Several producers and advisors in the pasture seed industry have suggested that increasing seeding rates, but still sowing with no seed bed preparation, will improve the reliability of establishing legumes into sown grass pastures. This paper reports the results of a legume seeding rate trial.

Methods

A seeding rate trial was established near Wandoan on a brigalow grey clay soil with a buffel grass pasture. ProGardes desmanthus (various *Desmanthus spp.*) was sown at five seeding rates – 1, 2, 4, 8 and 16 kg seed/ha with 4 replicates. Seed was broadcast into undisturbed grass in February 2013. Legume plant numbers and size were recorded 5 and 9 weeks then 9, 15, 23, 25 and 38 months after planting.

Results and Discussion

The trial had a very dry spring and early summer leading up to planting with little grass growth. The site received close to average rainfall in the nine weeks after planting. The following 2 summers have been below average rainfall. All seeding rates had seedlings 5 weeks after germinating rain but almost all seedlings had died by 9 weeks. Seed that was sown had good levels of hard seed with some seed managing to germinate and survive in subsequent years; however by 38 months after sowing no seeding rate had adequate plant numbers (>4 plants/m²). These results demonstrate that increasing seeding rate and planting directly into existing grass pastures is an unreliable approach to improving legume establishment into buffel grass pastures in inland areas of Queensland.

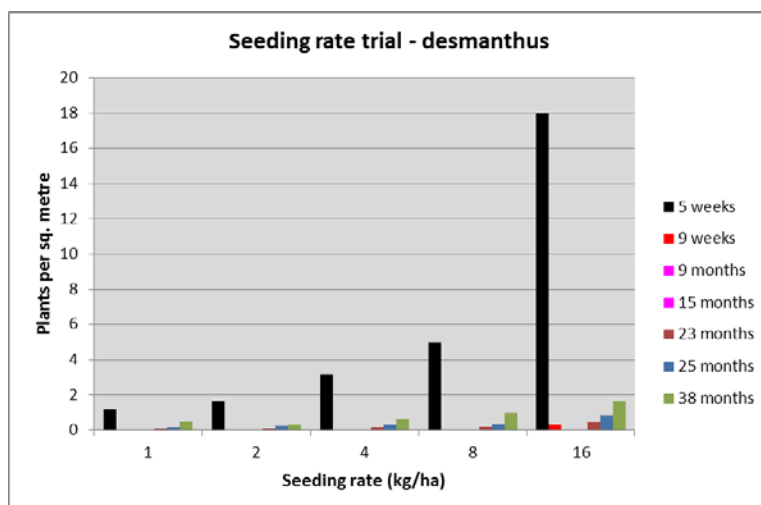


Figure 1: Desmanthus plant number over time for different seeding rates.

^CCorresponding author: Gavin.Peck@daf.qld.gov.au