

Centrosema pascuorum in Australia's Northern Territory: a tropical forage legume success story

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Introduction

Centurion (*Centrosema pascuorum*), an annual legume, was first sown for evaluation in the Northern Territory in the late 1970s (Clements *et al.* 1984; Cameron and McCosker 1986). The bred cultivar Cavalcade (Line 2/2, Cameron 2003b) was released in 1984, and Bunday (CPI 75 115, Cameron 2003a) in 1986. Seed availability limited the use of the legume for 10 years. In the Northern Territory, it is now used mainly as a hay crop, but is used also as a component of grazed mixed pastures. Most of the hay is made into feed cubes and pellets to feed cattle in the live export trade to south-east Asia. Up to 40% of the 50 000t of feed cubes and pellets used each year to feed 300 000 head of live export cattle, before, during and after shipping, is made from *Centrosema pascuorum*. Approximately 5000 ha of Cavalcade and Bunday are sown each year, mostly for hay. In 1998, annual production of hay and seed reached 20 000 and 177 t, respectively. Over the last 5 years, on average, 17 326 t of hay valued at AU\$2.61 M has been produced. In the same period, on average, 35.6 t of seed valued at AU\$0.234 M has been produced and sold in the Northern Territory, interstate and overseas. While 2 farmers produced most of the seed, and 25 farmers produced most of the hay, >100 farmers make some use of the legume.

Factors in achieving successful adoption

The use of *Centrosema pascuorum* met a need of farmers for a good quality hay crop. The hay was of better quality than most other species being used at the time [grasses, forage sorghums, pearl millets and Verano (*Stylosanthes hamata*)], and also less demanding in time of harvest than some (Verano, cowpeas). Positive feedback and demand from end users, initially from larger pastoral properties, and later from cubing plants, coupled with an increase in price for hay, encouraged the use of this legume. Local Departmental Extension Officers strongly supported the use of Centurion. Departmental Seeds Officers also encouraged and supported farmers in the production of Certified Seed. The uptake of the legume, which was slow initially, was accelerated by the distribution of a large quantity of good quality seed in 1990 by the Government Department for on-property testing.

Factors which constrained adoption

These factors were the availability of seed, and the farmers' lack of experience with the legume, that was a new species to agriculture in the Northern Territory, and to the world. This delayed large-scale use of the legume for up to 10 years. After release, a Seed Increase Committee was responsible for distribution of 'basic seed' for growing of seed-increase crops. This committee distributed the limited amount of 'basic seed' available to a range of interested farmers. Unfortunately, these farmers had limited experience in growing seed crops and mostly, the crops were complete failures. After receiving a quantity of 'prebasic seed' in 1986, the Department's Seed Section was able to produce over 600 kg of 'basic seed' in 1986 and 1987, and over 3 t in 1989. This seed combined with 10 tonnes of seed produced by 2 farmers in 1989 and 1990 allowed hay producers to sow larger areas of Centurion from the 1990–91 wet season. The distribution of 2.5 t of seed, grown by the Department and distributed free to farmers for the 1990–91 wet season, allowed them to become familiar with the species.

Conclusion

While there will be the normal fluctuations in production and demand caused by variations in the weather and changes in live cattle export numbers, the use of Centurion is a permanent innovation that is likely to continue into the foreseeable future. Farming systems will change. Pastures and hay areas will need to be renovated and rotated to a grass to remove the build up of nitrogen fixed by the legume and to control the invasion of broadleaf weeds. Large quantities of good quality seed of this annual species need to be produced each year.

References

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