

## Managing tropical perennial grasses for livestock production – a case study

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**Abstract:** On Tom Bowmans property “Tarplopy” near Barraba, 190 ha of tropical perennial grass pastures have been established over several years. Paddocks are divided into blocks of 10 to 15 ha using single wire electric fencing with watering points supplied to each paddock. When the tropical perennial grasses are actively growing (November–February) Tom tries to use a stocking density of about 250 animals/10 ha and moves stock to the next block every 3 to 5 days, allowing 15 days for the pasture to recover before the next grazing. Stock are generally moved when there is 1200 to 1500 kg DM/ha left in the paddock.

**Key words:** filling feed gaps, pasture quality, livestock growth rates

### Introduction

There has been a widespread interest in tropical perennial grasses over the past 10 years and a rapid increase in the area sown. Estimates from commercial seed sales in New South Wales (NSW) indicate that over 250,000 ha have been sown in the last three years. This has greatly improved the pasture feedbase in northern inland NSW, providing increased options for producers over the warmer months of the year.

Tropical perennial grasses are drought tolerant and can produce up to 20 t/ha of dry matter (DM) in a growing season (Harris *et al.* 2010). These grasses also have a role in providing persistent perennial species in the landscape and year round high levels of ground cover if well managed. Tropical perennial grasses have high water use efficiencies compared with native perennial grasses. In trials in the Tamworth region, Premier digit grass (*Digitaria eriantha*) produced almost 30 kg DM/ha for each millimetre of water used (Harris *et al.* 2010).

Good soil nutrition is essential for tropical perennial grasses to achieve optimum growth and quality for animal production. Given adequate moisture these grasses are responsive to increased nitrogen (N) and as a rule of thumb, can produce an additional 100 kg DM/ha in the growing season for every kg/ha of N applied (Harris *et al.* 2010).

Tropical perennial grasses grow quickly and one of the biggest challenges is to maintain high feed quality. This can be achieved with both good plant nutrition and appropriate grazing management strategies. Plant nutrition can be improved by applications of fertiliser to raise soil phosphorus, sulfur and N to a productive level for tropical perennial grasses, and replace these nutrients (particularly N) when required. Well managed legumes can supply much of the N required by these grasses.

Effective grazing management should be planned to maintain pasture in the vegetative growth stage prior to stem elongation as pasture quality declines rapidly when stem elongation is initiated. When there is good soil moisture and fertility, and warm summer conditions, tropical perennial grasses have high growth rates and require regular grazing at high stocking densities to maintain the high quality, leafy pastures required for maximum livestock production.

### Case Study – Tom Bowman, “Tarpoly”, Barraba

Producers are recognising the important role tropical perennial grasses have in filling gaps in the feedbase to increase production and sustainability. Tom Bowman is an excellent example of a producer who is using tropical perennial pastures to increase cattle production on the family property.

Tom said they have established 190 ha over several years with a mixture of Premier digit grass, Katambora Rhodes grass (*Chloris gayana*),

Bambatsi panic (*Panicum coloratum* var. *makarikariense*) and Gatton panic (*Megathyrsus maximus*). The pasture has been sown after at least 2 years of growing oats for winter fodder and controlling weeds throughout the crop and fallow periods. Tropical grasses are direct drilled in early to mid November, following the final oat crop, with adequate seed to establish 10 plants/m<sup>2</sup>.

Paddocks are divided into blocks of 10 to 15 ha using single wire electric fencing with watering points supplied to each paddock. Tom realised that for maximum livestock production he needed small paddocks and high stocking rates to maintain the tropical grasses at the leafy growth stage –Phase II (Prograze Manual 2006) in periods of peak growth. During the warmer months when the tropical perennial grasses are actively growing (November–February) Tom tries to use a stocking density of about 250 animals to 10 ha and moves stock to the next block every 3 to 5 days, allowing 15 days for the pasture to recover before the next grazing. Stock are generally moved when there is 1200 to 1500 kg DM/ha left in the paddock and ideally placed into the new paddock before stem elongation commences (late Phase II).

Soil nutrition is maintained at a moderate to high level on “Tarpoly” and additional N is applied to increase pasture growth, and maintain protein levels, when required. Dry lick supplements have been used to maintain livestock weight gains if pasture quality deteriorated due to seed head initiation when insufficient cattle were available to maintain grasses at the leafy growth stage.

Tropical grasses increase livestock production on “Tarpoly” by providing greatly increased quality fodder in the late spring/summer months. This increased fodder allows Tom to purchase trade steers in spring and fatten them during this period of rapid grass growth. He says it can be difficult to keep these grasses at the leafy growth stage as large stock numbers and strict rotational grazing are required. However, by maximising the energy and protein of his pasture, Tom has been able to achieve livestock growth rates of about 1.5 kg/hd/day. He gave an example of a mob of steers that increased from an average weight of 400 kg to 480 kg over 50 days of grazing perennial tropical grasses.

Another important addition these grasses provide to the feedbase on “Tarpoly” is filling the autumn feed gap for weaners. Tom stated that their native pastures only provide low quality fodder in autumn which is unsuitable for weaners. However, with well planned grazing, tropical grasses will provide suitable pastures through late summer/autumn, until oats are available for winter fodder.

### Acknowledgments

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### References

- Harris CA, McCormick LH, Boschma SP, Lodge GM (eds) (2010) *Tropical Perennial Grasses for Northern Inland NSW*. (Bookbound Publishing Pty Ltd: Gumma)