Agnote

No: E39

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Pasture Grasses of the Barkly Tableland

Part 1. Flinders Grasses

(Iseilema spp*.)*

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DISTRIBUTION

The widely distributed Flinders grasses (*Iseilema* spp.) are usually highly regarded for their nutritional value to grazing stock. They predominantly grow on heavy clay soil country, from northern New South Wales, through western Queensland, the Northern Territory and into northern Western Australia.

On the Barkly Tableland in the Northern Territory, Flinders grasses are most commonly associated with Mitchell grasses (*Astrebla* spp.) on the heavy cracking clays of the 'black soil plains'.

Eleven species of Flinders grasses are known to occur on the Barkly Tableland. All are similar in appearance and nutritive quality, which makes it difficult to tell them apart.

DESCRIPTION

Flinders grasses usually grow to between 20 and 40 cm in height, although red Flinders grass has been known to reach up to 100 cm. The smaller plants are usually erect, whereas the larger ones are bushy in appearance, often falling over. The stems are normally quite leafy, with varying degrees of red-purple in colour. Colouration increases as the plants dry off, and eventually fades to red-pink or yellow.

The seed heads of Flinders grasses are generally leafy and may appear indistinct from the rest of the plant. Each seed head is wholly or partly enclosed by the main floral leaf. Smaller, secondary floral leaves enclose the spikelets (flowers) within each seed head.

PASTURE COMPONENT

The abundance of Flinders grasses relative to the perennial grasses will vary greatly depending on seasonal conditions. A run of wet years will produce a major increase in the proportion of Flinders grasses in the composition of pastures. However, at the same time, the recruitment and establishment of Mitchell grasses will also increase. These hardy perennials will eventually overwhelm annual Flinders grasses.

Mitchell grasses will predominate in a run of drier than average years, especially if the pasture is not being grazed excessively. Thus the sequence of below average rainfall years in the late 1970s and into the 1980s produced a marked reduction in the proportion of Flinders grass in pasture sites studied on the Barkly Tableland.

Flinders grasses become increasingly important in the pastures to the north which experience a distinct wet season. Thus on the Barkly Tableland and in the Kimberley region of Western Australia, Flinders grasses make a significant contribution to the cracking clay pastures.

Seed head of Slender Flinders Grass (*Iseilema fragile*)

NUTRITIONAL VALUE

Opinion varies as to the nutritional value of Flinders grasses over an entire year. Many regard them to be equally valuable over both wet and dry seasons, being palatable whether green or dry. However, due to the relatively short growing season, followed by fairly rapid drying off, there is only a brief period when they make a significant contribution to the pasture. Crude protein of Flinders grass can be as high as 9% in young growth, but will decline to as low as 2% when dried off (Holm and Eliot 1980). Observations of grazing behaviour and diet content have shown that Flinders grasses are grazed on the Barkly Tableland in moderate amounts during the wet to mid-dry season, but are largely ignored late in the dry season.

Flinders grasses respond more slowly to the first summer rains than do Mitchell grasses, with the first new growth of red Flinders grass not appearing for about a month after rain. Flinders grasses contain much more protein and phosphorus, and are more digestible than perennial grasses early in the growing season. However, they dry off rapidly when rains cease, thus reducing their nutritive value compared with the lush and growing Mitchell grasses.

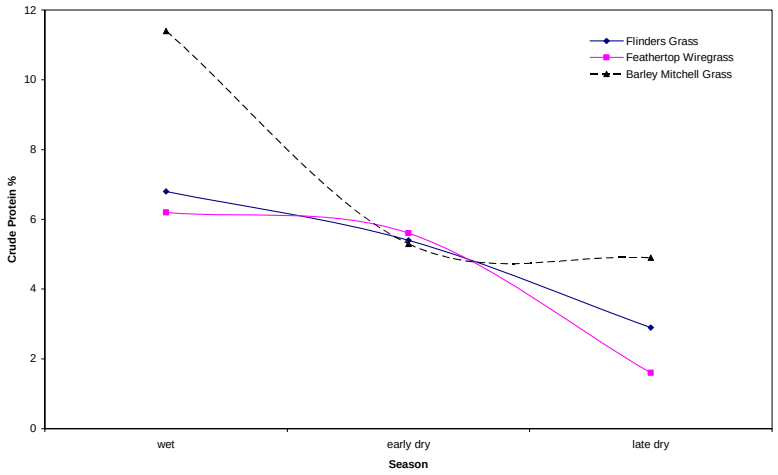

Figure 1. Seasonal trend in crude protein content of three Barkly Tableland pasture grasses

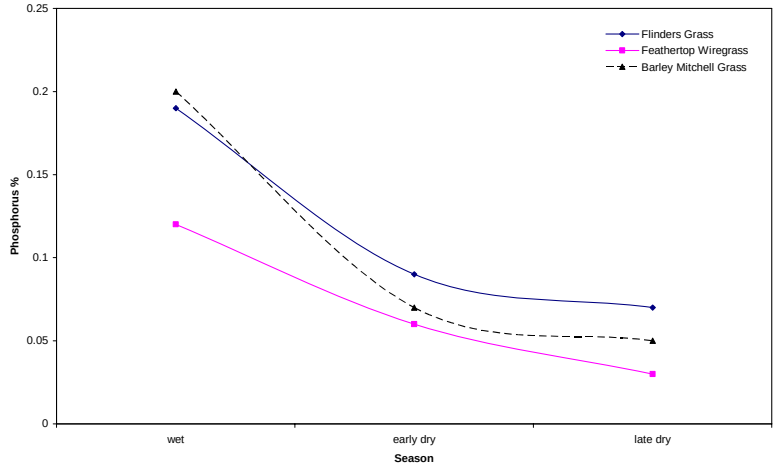

Figure 2. Seasonal trend in phosphorus content of three Barkly Tableland pasture grasses

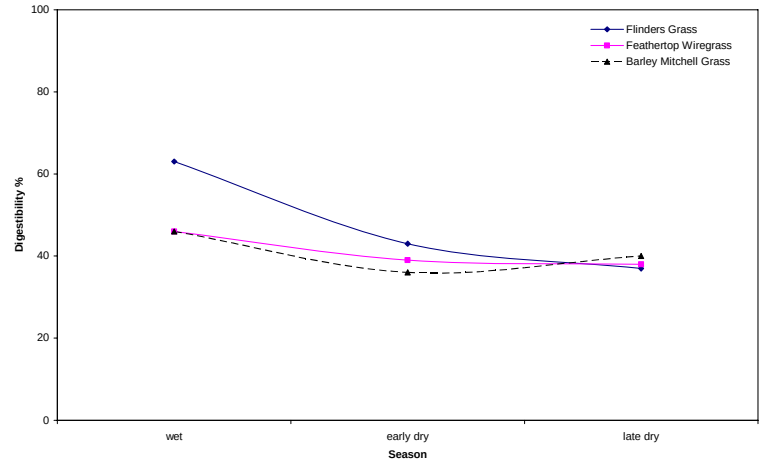

Figure 3. Seasonal trend in dry matter digestibility of three Barkly Tableland pasture grasses

MANAGEMENT

Heavy grazing that reduces competition from perennial species will favour Flinders grasses, as will high rainfall. However, such an increase in Flinders grass is not necessarily of benefit to the pasture. A higher proportion of Flinders grass does give a boost to the nutritional value of the pasture over the wet to early dry season; however, this is not so for the remainder of the year. A higher proportion of Flinders grass may indicate a lower proportion of perennials, such as Mitchell grasses. Such ratios are needed to maintain grazing over the late dry and early wet season, when Flinders grasses have lost their value. It is desirable to maintain a good mix of Flinders grasses and palatable perennials, such as Mitchell grasses, for year round productivity of the pasture.

FURTHER READING

Foran, B. D. and Bastin, G. R. (1980). The dynamics of a Mitchell Grass (*Astrebla species*) rangeland on the Barkly Tableland, the Northern Territory. *Australian Rangeland Journal* 6(2); 92-97.

Holm, A. McR. and Eliot, G. J. (1980). Seasonal changes in the nutritive value of some native pasture species in north-western Australia. *Australian Rangeland Journal* 2(2); 175 -182.

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