

# An Introduction to Pastures of the Katherine Region

## Part 1. Native and Introduced Species

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### INTRODUCTION

This Agnote briefly describes the major pasture species and Part 2 (Agnote 800) outlines the common uses of the introduced pastures in the Katherine Region.

Native pastures are the primary source of feed for cattle production in the Katherine Region. Introduced species have an important role as special purpose pastures.

### THE KATHERINE REGION

The Katherine Region covers approximately one quarter of the Northern Territory. It includes the cattle producing districts of the Victoria River and Roper-McArthur basins, the southern part of Katherine-Daly basin and the Sturt Plateau (Mataranka-Daly Waters area) (see Map 1 below).

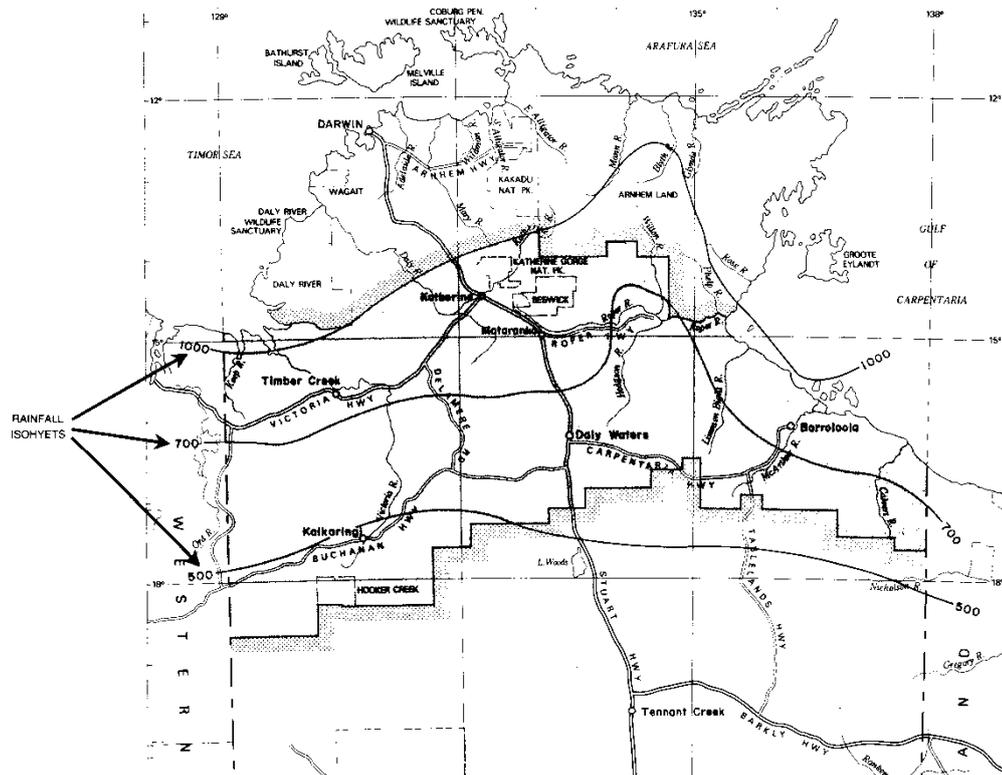
#### Climate

The northern boundary of the region is close to the 1000 mm annual rainfall isohyet (a line on a map connecting points having the same amount of rainfall in a given period), while rainfall on the southern boundary varies between 450 mm and 600 mm annually. Throughout the region, almost all of the annual rainfall is received between October and March. Humidity is generally low through the Dry season, but is high during the build-up (September-November) and the Wet (December-March). More detailed information on climate can be obtained from a number of sources including ([www.bom.gov.au](http://www.bom.gov.au)) and climate software packages. Please consult Plant Industries in DITT for recommendations on software.

soils are variable, but are generally massive or weakly structured. They are infertile due to the parent material from which they were derived and because of leaching of nutrients during the wet season.

Red earth soils are generally better drained and include the desert soils in the south. Gentle low slopes, flood plains and poorly drained sites usually have cracking clay soils. The red earths are the most suitable soils for growing introduced pasture species currently available.

Information on the soils and their distribution can be found in the Soils of the Northern Territory factsheet ([Soils of the Northern Territory factsheet](#)).



Map 1 The Katherine Region

## NATIVE PASTURES

The majority of cattle in the region graze native pastures. These pastures consist of a variety of perennial and annual species depending on soil type, topography and rainfall. Pastures usually contain grass and broadleaf species.



Native pasture on a Red Earth soil near Katherine

For all native pasture communities, grazing value improves along a gradient from the northern to the southern parts of the region.

Widespread perennials include Black spear grass (*Heteropogon contortus*), Kangaroo grass (*Themeda triandra*) and Bluegrasses (*Dichanthium* spp.) in the North. This changes to Mitchell grasses (*Astrebla* spp.) and Limestone grasses (*Enneapogon* spp.) in the South. Spinifex (*Triodia* spp. and *Plectrachne* spp.), White grass (*Sehima nervosum*), Ribbon grass (*Chrysopogon fallax*) and Feathertop (*Aristida latifolia*) can be found throughout the region.

Perennial native pastures are desirable for soil stability. They provide feed later in the dry season when palatable annual species are gone. Their productivity is more reliable in low rainfall seasons.

Annual grasses include the Sorghums (*Sorghum* spp.) in the North changing to Native couch (*Brachyachne convergens*) and Flinders grasses (*Iseilema* spp.) in the South.

There are many native legumes present, but generally they are only a minor component of the native pastures.

Cattle preferentially graze many annual grasses and legumes. Their major limitation is low annual production. Annual grasses and legumes are often completely grazed out early in the Dry season. Most native pasture communities consist of a high proportion of perennial grasses. These are generally of low to moderate grazing value.

## INTRODUCED PASTURES

A range of introduced tropical grasses and legumes have been evaluated over a number of years. Research has focussed on improving the nutritional value of feed available during the dry season.

### Introduced Legumes

Legumes provide improved nutrition (particularly protein) to stock allowing them to make better use of the dry standing native grass pastures. The improved nutrition provided by legumes can allow stock to maintain weight further into the dry season and contribute to improved reproductive rates, higher weight gains and lower mortalities. On native pastures, large liveweight losses can occur during the latter half of the dry season.

#### i. Legumes for Extensive Use

The main legumes available for extensive pastoral use are Verano and Amiga stylo (*Stylosanthes hamata*), Seca and Siran shrubby stylo (*S. scabra*) and Wynn cassia (*Chamaecrista rotundifolia*). These are often used together in a mixture.

#### *Verano and Amiga Stylo*

Verano has been grown in the region for many years and is well adapted to this environment. It is a many branched semi-erect herb to 75 cm tall and behaves as an annual or biennial. Amiga is a more recently released variety, very similar in appearance to, produces more seed and has more perennial plants than Verano.

Verano has been shown to markedly increase carrying capacity. At Kidman Springs (Victoria River Research Station) stocking rates were increased from 1 beast/12 ha to 1 beast/1.2 ha. At this stocking rate liveweight gains were higher than for stock on native pasture, enabling turnoff one year earlier.

#### *Seca and Siran Stylo*

Seca is also well adapted to this environment. It is an erect perennial shrub up to 2 m tall. Siran is similar in appearance but has a different Anthracnose (a fungal disease) resistance.

#### *Wynn Cassia*

Wynn Cassia is a semi-erect biennial legume which can grow to 60 cm tall. It is a prolific seeder and can flower as early as seven weeks after germination. It is unpalatable when green and growing. It is generally not well grazed

until the Dry season when it hays off. Wynn can become dominant in pastures which are grazed too heavily during the wet season.

## ii. Legumes for Intensive Use

For intensive use the main legumes are Cavalcade (*Centrosema pascuorum*) and Milgarra Blue Pea (*Clitoria ternatea*). These have been used for hay production in the region.

### *Cavalcade*

Cavalcade is a vigorous annual legume with trailing stems up to 2 m long. It has a crimson flower and will start flowering in mid-March and can produce large quantities of seed.

Cavalcade is the main cultivar currently used for hay production in the region.

### *Milgarra Blue Pea*

Milgarra is a perennial herb which grows to 1.0-1.2 m high with an erect base and fine twining stems. It is well adapted to the Katherine Region and will grow well on a range of soils, including waterlogged soils. It has distinctive large blue or occasionally white flowers. It will continue growing well into the Dry season while moisture is available.

Milgarra is probably more suited to an intensive grazing situation than hay production. It does not tolerate heavy grazing during the wet season.

## **Introduced Grasses**

Introduced grasses will generally not establish successfully without some form of cultivation. The most successful introduced grasses are palatable and digestible, drought tolerant and can withstand heavy grazing. Most are intolerant of waterlogging and are more suitable for the better drained red earths.

The most common species are buffel grass (*Cenchrus ciliaris*), sabi grass (*Urochloa mosambicensis*) and Indian bluegrass (*Bothriochloa pertusa*). More recently Jarra and Strickland finger grasses (*Digitaria milanjana*) and Silk Sorghum (*Sorghum* sp) are showing promise.

### *Buffel grass*

Buffel grasses are deep-rooted perennials. The recommended varieties American and Gayndah both of which are tussocky and grow to 90 cm tall. Once established they can withstand heavy grazing. Buffel grasses do not spread beyond their original planting areas in the Katherine Region

### *Sabi grass*

Nixon is the local cultivar of this hardy low growing drought tolerant perennial grass. It responds quickly to early rains, will commence flowering in three to four weeks and will continue to produce seed heads (while moisture lasts) into the Dry season. It is well adapted to the Katherine region, is relatively easy to establish, will spread and fill in thin stands and can withstand heavy grazing. Its feed value declines quickly as the plants hay off early in the Dry season.

### *Indian bluegrass*

Indian bluegrass is a low-growing perennial grass that produces numerous runners which root readily at the nodes. It is drought tolerant and has the ability to colonise areas where native grass has been weakened by heavy grazing. The two cultivars suitable for sowing in the Katherine District are Bowen and Yeppoon.

### *Jarra and Strickland grasses*

Jarra grass is a vigorous dark green hairy perennial grass. It produces numerous long runners that root readily at the nodes. Strickland looks similar but is more blue-green, is less hairy and is considered more drought tolerant

than Jarra. Experience indicates that they are palatable and once established are able to tolerate heavy grazing. Jarra is the main grass cultivar grown for hay in the Katherine District.

*Silk sorghum*

Silk sorghum is a short lived tussocky perennial grass. It is a good pioneer pasture grass which can also be used to make hay.

## KEY POINTS

- Introduced pasture species are useful alongside native pastures within a grazing system.
- The selection of species will be determined by the intended use.
- The introduced pastures may be grown in pure stands or mixed species swards.
- Detailed descriptions of all introduced grasses and legumes mentioned are available in Departmental Agnotes.

## WARNING

Pasture plants have the potential to become weeds in certain situations. To prevent that, ensure that seeds and/or vegetative materials are not inadvertently transferred to adjacent properties or road sides.

Please visit us at our website:

[Pastures and fodder crops - NT.GOV.AU](http://NT.GOV.AU)

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