



A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

## Tall finger grass

### Scientific name(s)

*Digitaria milanjana*

*Digitaria setivalva*

*Digitaria swynnertonii*

### Strengths

- Vigorous and productive.
- Highly palatable when young.
- High quality when young.
- Drought hardy.

### Limitations

- Mostly intolerant of poor drainage.
- Can become stemmy during the growing season.
- Sensitive to frost.
- Not tolerant of heavy continuous grazing.

### Plant description

**Plant:** A vigorous stoloniferous (a) or tufted (tussocky) (b) perennial grass.

**Stems:**

(a) Prostrate stolons generally up to 5 m long. These readily root at the nodes to produce new plants.

(b) Erect in a tussock.

**Leaves:** Leaf blades are 15 - 30 cm long, and 3 - 13 mm wide. Leaves can be hairy.

**Seedhead:** Inflorescences up to 2.5 m high. It consists of 2 - 18 spikes in a subdigitate panicle.

**Seeds:** Seeds are extremely small and hairy. Approximately 2 million/kg.

### Pasture type and use

It is mainly sown as a permanent pasture for grazing, or for hay. They can be used as pasture ley to control nematodes in banana plantations.

### Where it grows

**Rainfall**

550 - 1,700 mm/year. Once established, it is can survive droughts.

**Soils**

It grows on a range of soils from sandy soils to heavy cracking clay soils. It grows well on well drained clay loam soils. The stoloniferous forms will withstand waterlogging, but not flooding. The tufted form, 'Arnhem', is more tolerant of waterlogging and flooding.

**Temperature**

While the species is well adapted to the semi-arid tropics, the different cultivars are adapted to

different conditions. 'Strickland' is better adapted to the subtropics, and colder and drier conditions than the other cultivars.

It is tolerant of fire, and recovers after burning.

## **Establishment**

### **Companion species**

Grasses: It is best sown as a single grass in a mixture as the stoloniferous forms are more palatable than other tropical grasses, and the tufted form is less palatable.

Legumes: Those which can be used in mixtures include Glenn, Lee, Wynn, Cavalcade, Bunday, Milgarra, Amiga, Verano, Seca and Siran.

### **Sowing/planting rates as single species**

1 - 4 kg/ha. Have seed tested before sowing. Fresh seed can be dormant for up to 6 months after harvest.

### **Sowing/planting rates in mixtures**

1 - 2 kg/ha.

### **Sowing time**

Early in the growing season after good opening rains, when there is likelihood of follow up rains. In the semi-arid tropics, this will range from the first week of December in higher rainfall areas (1500 mm plus) to the third week of December in lower rainfall areas (1000 mm).

### **Inoculation**

Not applicable.

### **Fertiliser**

Responds strongly to nitrogen and phosphorus. Generally apply 100 - 250 kg/ha of superphosphate or its equivalent at establishment. In the semi-arid tropics, apply nitrogen at 25 - 50 kg/ha to grazed pastures and at 100 - 200 kg/ha to hay crops. Applications of potassium, molybdenum, zinc or other deficient elements may be necessary on some soils.

## **Management**

### **Maintenance fertiliser**

In the semi-arid tropics, generally apply 50 - 100 kg/ha of superphosphate or its equivalent. Apply nitrogen at 25 - 50 kg/ha to grazed pastures and at 100 - 200 kg/ha to hay crops.

### **Grazing/cutting**

It should not be grazed in the season of establishment before it has had the time to develop a strong root system. In the semi-arid tropics, it should be only lightly grazed in its first dry season.

### **Seed production**

In some environments, 3 harvests are possible in some years. The harvests will be in November/December, January/February and in April. In semi-arid tropical areas the February seed crop is generally the largest at 100 kg/ha. This harvest may be disrupted by monsoonal rain. In north Queensland and subtropical southern Queensland, the January/February harvest can yield 200 - 250 kg seed/ha. Seed is generally direct headed, but can be harvested with a brush harvester. The crop should be harvested when approximately 10 % of mature seed has been shed. Near maximum seed yields are present for about 1 week.

### **Ability to spread**

Good. It produces new plants from stolons and seed. It generally does not spread out of sown paddocks. Some disturbance, such as a rough cultivation is the minimum requirement to ensure establishment.

### **Weed potential**

Low. Evaluated with a low weed risk by the Northern Territory Weed Risk Assessment method.

### Major pests

None recorded.

### Major diseases

None recorded.

### Herbicide susceptibility

Yield is reduced by low rates of Diuron. Atrazine should be used for the control annual grasses.

Tolerant of selective herbicides used to control broadleaf weeds.

## Animal production

### Feeding value

The quality varies.

The stoloniferous forms are high quality grasses. Crude protein (CP) of tops during the wet season (January - March) is often 12 - 15%. This drops to 2 - 4 % CP late in the dry season in the semi-arid tropics. In vitro digestibility of tops can be as high as 76 %, but is more commonly 68 - 70 % during the growing season and drops to 45 - 55 % during the dry season.

The tufted form has moderate feeding value. Crude protein (CP) of tops during the wet season (January - March) is often 10 - 12%. This drops to 2 - 4 % CP late in the dry season in the semi-arid tropics. In vitro digestibility of tops can be as high as 66 %, but is more commonly 50 - 65 % during the growing season and drops to 40 - 55 % during the dry season.

### Palatability

The stoloniferous grasses are extremely palatable to all types of stock and horses as green feed, dry feed or hay. Wallabies also find them extremely palatable.

The tufted form is less palatable.

### Production potential

Without applications of nitrogen fertiliser dry matter yields are generally 4 - 6 tonnes/ha. With the application of 100 - 200 kg/ha of nitrogen, yields are 10 - 15 tonnes/ha.

While the stoloniferous forms are more productive at conservative stocking rates than the tufted form, the tufted form is more tolerant of heavier wet season stocking in the semi-arid tropics.

### Livestock disorders/toxicity

None recorded.

## Cultivars

Cultivar	Seed source/Information
Arnhem	Erect, tufted tussock, no stolons, green in appearance, leaves narrow, inflorescences to 1.45 m, lower quality, more tolerant of waterlogging and flooding, adapted to the tropics, 1,100 mm plus of rainfall. Less palatable than other cultivars. (see plant description B)  Australian Herbage Plant Cultivars
Jarra	Stoloniferous, dark green and purple in appearance, hairy, inflorescences to 2.5 m, runners to 5 m long, foliage to 80 cm high, adapted to the tropics, 900 mm plus of rainfall. (see plant description A)  Australian Herbage Plant Cultivars
Strickland Ⓟ	Stoloniferous, blue-green appearance, less hairy than Jarra, inflorescences to

1.3 m, runners to 2.5 m long, foliage to 70 cm high, adapted to the subtropics and tropics, 550 mm plus of rainfall in the subtropics and 900 mm plus of rainfall in the tropics.

Strickland is much more tolerant of colder and drier conditions than the other two cultivars. (see plant description A)

Ⓓ Denotes that this variety is protected by Plant Breeder's Rights Australia

### **Further information**

Tropical Forages database (SoFT) - Centurion

Northern Territory DPIFM - Agnote E63 (Arnhem)

Northern Territory DPIFM - Agnote E55 (Jarra)

Northern Territory DPIFM - Agnote E65 (Strickland)

### **Acknowledgements**

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### **Author and date**

Arthur Cameron

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