Arnhem Finger Grass

(Digitaria swynnertonii)

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Description

Arnhem grass (*Digitaria swynnertonii*) is an erect, tufted (tussocky) perennial in the *D. milanjiana* group of grasses. Leaf blades are 15 to 30 cm long and 5 to 9 mm wide and are glabrous (not hairy). Foliage grows to 70 cm high and flowering stems to 1.45 m. The flower head has five to seven spikes, seven to 10 cm long. Seeds are small, about 2 million per kg.

Arnhem grass differs from the two other released finger grass cultivars by having a distinct tussocky habit and no stolons (runners), by being green in appearance compared with Jarra (dark green and purple) and Strickland (blue-green), by having a higher density of seed heads and by being glabrous.

Other differences are that Arnhem has smaller seed heads with fewer spikes than Jarra and Strickland and thinner stems and narrower leaves than Jarra.

Climate and Soils

Digitaria swynnertonii (milanjiana) is a native of tropical East and Southern Africa, from Ethiopia towards South Africa. It is found in semi-arid (450 mm rainfall) to wet equatorial (1700 mm rainfall) areas. It grows in grassland on sandy loam soils and in open woodlands on heavy black soils and on sandy soils.

Arnhem grass is suitable for areas receiving annual rainfall of over 1100 mm. It will grow well on a wide range of soil types, including lithosols, red earths, sandy red earths, yellow earths and seasonally flooded solodic soils. Arnhem grass has tolerated waterlogging, up to three months flooding, occasional burning and drought.

Sowing

Seeds should be sown at 1 to 4 kg/hectare (ha), depending on seed bed preparation and proposed end use. For best results, seeds should be sown into a well prepared, moist, weed-free seedbed.

Freshly-harvested seeds have a reduced germination rate because of post-harvest dormancy. Germination improves after five to six months of storage.

Fertiliser Requirements

Although fertiliser needs have not been closely studied in the Top End, Arnhem grass responds to fertilisers. Types and amounts of fertiliser required will depend on soil type, rainfall, pasture mix and intended use of the pasture.

Generally, seeds should be sown with 100 to 200 kg/ha of superphosphate or its equivalent and maintenance applications should be 50 to 100 kg/ha yearly. Potassium may be required on some soils and with more intensive use.

Arnhem grass will respond to split applications of nitrogen during the wet season, producing yields similar to pangola grass.

Yield

Annual dry matter yields of up to 17 tonnes (t)/ha have been achieved from well fertilised, ungrazed pastures in the Top End.

Continuously-grazed pastures at a stocking rate of one beast/ha have had dry matter yields of 4.5 to 5 t/ha in April-May.

Established pastures of Arnhem grass produce seed heads throughout the wet season. Three seed crops can be harvested, in late November-December, late January-February and in April. This depends on rainfall, cutting back the pasture and fertiliser applications, particularly nitrogen.

The seed crop can be harvested with a beater harvester, a brush harvester or a conventional header. The seed crop should be harvested when approximately 10% of mature seeds have been shed from the seed heads. The seed crop should be harvested in seven to10 days, before the majority of seeds are shed. Each crop can yield up to 100 kg/ha of seeds.

Grazing

While Arnhem is less palatable than pangola, Jarra or Strickland, it appears to be a tough grass, more tolerant of heavier stocking than these grasses. It is seen as an alternative to Tully as a cultivar, which can carry higher wet season stocking rates than most other commercial grasses. It should not be grazed in the wet season of establishment and only lightly grazed in the first dry season. The grazing value to cattle in terms of live-weight gain appears to be midway between the high production from pangola grass and a lower production from Tully.

Mixtures

Legumes which can be sown in mixtures with Arnhem grass include Glenn, Lee, Wynn, Cavalcade, Bundey, Milgarra, Amiga, Oolloo, Verano, Seca and Siran.

Hay

To date little hay has been made from Arnhem grass. It is seen more as a grazed pasture rather than a hay cultivar. It can produce reasonable grass/legume hay when the sward contains a high percentage of a twining legume, such as Milgarra or Oolloo.

Pests and diseases

To date, no pests or diseases have been identified that affect production.

Warning

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

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