Agnote

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Bulrush Millet

(Pennisetum glaucum)

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DESCRIPTION

Bulrush or pearl millets (*Pennisetum glaucum*) are deep rooted, tall, robust, free tillering annual forage grasses. They have been selected or bred mainly for forage production.

Pearl millets can grow to a height of 4 m. Stems are solid and can be up to 2 cm in diameter. Leaves are up to 100 cm long, flat, up to 8 cm wide and can be hairy.

The seed head is a spike up to 46 cm long. Seeds are plump, rounded about 3 mm in diameter and are pearly white, grey, yellowish grey or greenish grey. They are tightly packed in the seed head, with bristles around and between them. Pearl millet is an obligate short day plant which initiates flowers when day length drops to the critical length for each variety.

The cultivars of bulrush millet currently recommended for sowing in the Top End of the Northern Territory are Katherine Pearl, and Ingrid Pearl. Siromill is a similar late maturing cultivar and should also be suitable for the Northern Territory.

Katherine Pearl grows to 3 m tall, the leaves are dark green, generally hairy, the seed head is up to 30 cm long, the bristles on the seed head are not prominent and the seed is pearly white to grey in colour. It is late flowering, and flowers in mid-late March in the Top End of the NT. It is a cross-pollinating cultivar.

Ingrid Pearl grows to 4 m tall, the leaves are less hairy, are wider and lighter green than Katherine Pearl, the seed head is up to 46 cm long, the bristles on the seed head are prominent, seeds are generally smaller than those of Katherine Pearl and yellowish grey to greenish grey. It flowers one to two weeks earlier than Katherine Pearl.

There are some other hybrid millet varieties available commercially. These have been found either unsuitable for use in the Top End, or have not been extensively tested and shown to be suitable for local use.

CLIMATE AND SOILS

Bulrush millet will grow in areas with annual rainfall from 275-1500 mm. Although it is drought tolerant it requires even distribution of rainfall during the growing season.

It will grow on a range of soil types but prefers light loams. It does not tolerate waterlogging.

In the NT it is best suited on Tippera or Blain cropping soils where annual rainfall averages 900-1300 mm.

SOWING

Bulrush millet should be sown in 35 cm spaced rows at a rate of 6-15 kg/ha into a well-prepared seedbed. Seed should be sown 1-1.5 cm deep into moist soil. It can be sown using minimum tillage techniques and equipment.

MANAGEMENT

Uses: Bulrush millets have an advantage over forage sorghums in that they do not contain prussic acid which, in high doses, can cause poisoning. They also make better quality hay and silage.

Bulrush millet crops can be used in a number of ways, such as:

1. Grazing

    a) Intensive - rotational strip grazing.
    b) Extensive - prolonged grazing.
    c) Saved fodder - late grazing of a standover crop. The standover value is usually poor because of low nutrient levels and low digestibility.

2. Hay - palatable hay can be made from bulrush millet. A mower-conditioner is necessary to allow curing of the thick stems.

3. Silage - a good quality palatable silage can be made.

4. Seed/grain - commercial seed for sale or as bird seed.

5. Horticulture cover crop.

The quality of the forage can be improved by sowing a forage legume such as cowpea or lablab. When a legume is sown, the sowing rate of the pearl millet can be halved.

Fertiliser Requirements: These have not been closely studied in the NT but bulrush millets respond to good fertility, and generally high rates of fertiliser are necessary for good yields.

Bulrush millets are well known and commonly used for their deep rooting and ability to recover nutrients, particularly nitrogen from deep down the soil profile, provided there is no waterlogging.

Fertiliser rates should be equivalent to 150-200 kg/ha of superphosphate and 100-200 kg/ha of urea. An application of nitrogen later in the season or after grazing may be beneficial. If the crop is being grown for hay, muriate of potash may need to be applied at 100-200 kg/ha. Applications of zinc or molybdenum may be necessary on some soils.

Weed Control: The rapid growth rate of pearl millet usually overcomes any weed problem.

Yields: Over 20 tonnes/ha of dry matter, can be harvested from good stands of bulrush millet, depending on moisture and nutrient availability. Katherine Pearl millet has yielded 27 t/ha of dry matter in a trial at Douglas Daly Research Farm.

Seed yields of Katherine Pearl average 650 kg/ha, while Ingrid Pearl is higher at 800 kg/ha

PESTS AND DISEASES

Army worms (*Mythimna separata* and *Spodoptera exemmpta*) can attack young growing plants, but generally do not require spraying. *Helicoverpa* spp. can damage developing heads and should be sprayed if the crop is being grown for grain or seed production.

A number of parrots including corellas and galahs are attracted to the ripening seedheads, and can, in sufficient numbers, totally destroy a seed or grain crop.

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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