

Hymenachne

A.G. Cameron, Principal Agronomist Pasture Development, Darwin

DESCRIPTION

Two hymenachne varieties are present in the Northern Territory.

Native hymenachne (*Hymenachne acutigluma*) is a native perennial aquatic or semi-aquatic grass. It is a trailing grass and roots at the lower nodes. The stems are thick, and can be over 4 m long, containing 10 or more nodes.

Leaves are 15-30 cm long and 2-3 cm wide. The plant generally has a dark green appearance.

The seed head is a spike 8-10 cm long. Seeds are small (1-2 mm).

Olive hymenachne (*Hymenachne amplexicaulis* cv Olive) is a grass introduced from South America and tested as a species for ponded pastures. Olive hymenachne appears almost identical to native hymenachne, except for shorter and broader leaves.

Olive hymenachne has been declared a Weed of National Significance. It is not recommended for sowing as a pasture in the Northern Territory.



ADAPTION

Native hymenachne is found on the black cracking clay soils in permanent swamps, on the margins of permanent water-holes and on the coastal and sub-coastal riverine plains of the Top End of the NT where flooding occurs for 6-12 months of the year. It has been recorded on the subcoastal plains between the Goyder River in Arnhem Land in the east and the Moyle River in the west, and on Croker Island.

It does not grow in areas where seasonal flooding is shallow, i.e. less than 1 metre, but it has been found growing in thick stands where the height of the wet season flood has reached at least 4 metres above the surface of the plain. In permanent waters it is rooted to the banks above the low water line and the stems float out onto the water. Seasonal variation in water depth increases the density and spread of the plants.

Natural stands normally form a monoculture, completely covering the soil in the dry season.

ESTABLISHMENT

Cuttings

Hymenachne can be planted by dropping cuttings containing 2-3 nodes into water over 10 cm deep, during the wet season.

Because of its ability to spread by runners, hymenachne can be sown or planted in wide spaced (i.e. 5 m) rows and allowed time to fill in the spaces by itself.

Seed

Hymenachne has been successfully established by dropping seed onto shallow water by helicopter or air-boat.

Native hymenachne produces little viable seed. Each seed head contains 500 florets but only 1% of florets produce seed. Regeneration from seed is significant in natural stands where, after big floods, new seedlings can be found from the high water mark down. Seed is difficult to harvest as it produces seed heads and flowers in February/June when flooding prevents access in the NT. Seed has been harvested using a catcher on the front of an airboat and in shallow water by a brush harvester towed by a small tractor. Seed harvest rates are extremely low at approximately 1 g of pure seed per hour.

Sowing rates recommended for native hymenachne are 1 to 2 kg of seed per hectare.

MANAGEMENT

Fertiliser Requirements

Nitrogen and phosphorus fertilisers applied at the beginning of the wet season have not increased dry matter yield or plant content of nitrogen or phosphorus at the end of the wet season. This is because the grasses are only adapted to the more fertile clay floodplain soils.

Nitrogen fertiliser (25-50 kg/ha) can be applied to sparse or newly established stands to promote the number and growth of tillers to increase population density.

Grazing

Hymenachne is a valuable fodder resource for the dry season in coastal areas of the NT. It should be used solely as a dry season feed due to the harmful effects of grazing at other times of the year. Grazing in the late wet-early dry period particularly causes destruction of stands by trampling, puddling and plants being pulled out of the wet soil. The intensity of this type of damage increases towards the edge of the floodplains.



A stocking rate of one beast per 1.5 to 2 ha is recommended as a safe stocking level for hymenachne stands.

Yield

Hymenachne is a very lush plant, containing low levels of dry matter, generally 20 to 47%.

Yields of 2,000-3,500 kg/ha of dry matter can be expected at the end of the wet season for native hymenachne. There is also regrowth following grazing or cutting in the dry season, as hymenachne occupies the deep flooding areas of the floodplains where the water table is close to the soil surface in the dry season.

Quality

Nitrogen contents of whole plants have averaged 2.2 to 3.3% (13.8 to 20.6% crude protein (CP)) in December, 1.8% (11.3% CP) in May and 1.4% (8.8% CP) in September. Up to 4.2% (25% CP) nitrogen has been recorded in leaves of regrowth early in the wet season (September - November).

Phosphorus contents are generally 0.20% or over during the wet season and 0.16% or over during the dry season.

Haymaking

Good quality hay has been made from native hymenachne.

PESTS AND DISEASES

Tar spot (*Phyllachora* spp.) has been recorded on *Hymenachne acutigluma* in the NT. Symptoms are numerous small (1.5 mm) black, shiny raised spots, round to oval in shape. This disease causes little damage and is not important.

The caterpillars of *Marasmia* spp, a leaf roller of rice and other grasses attack both native and Olive hymenachnes. Symptoms are dead and dying leaf tips. A small caterpillar can generally be found in the rolled up leaf.

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.

Please visit us at our website:

www.nt.gov.au/dpifm

Department of Primary Industry, Fisheries and Mines

© Northern Territory Government

ISSN 0157-8243

Serial No. 549

Agdex No. 131/32

Disclaimer: While all care has been taken to ensure that information contained in this Agnote is true and correct at the time of publication, the Northern Territory of Australia gives no warranty or assurance, and makes no representation as to the accuracy of any information or advice contained in this publication, or that it is suitable for your intended use. No serious, business or investment decisions should be made in reliance on this information without obtaining independent/or professional advice in relation to your particular situation.