

Navua sedge

Cyperus aromaticus



Navua sedge is extremely aggressive and competes strongly for nutrients, light and moisture. Navua sedge is capable of forming dense stands that can smother many tropical pasture species.

In pastures, navua sedge is unpalatable and provides little feed value for cattle. If pastures are overgrazed navua sedge can quickly take over.

Spread occurs through the normal extension of the rhizome system, by seed and by dispersal of viable rhizome fragments during cultivation. Seed can be dispersed by passing through the digestive system of animals and birds, and also by being transported in mud on hooves, pelts, footwear or machinery.

Navua sedge can be a problem in sugar cane where the crop is light with poor canopy cover.

Declaration details

Navua sedge is not declared under the Queensland legislation. A local government may declare Navua sedge under its own local law.

Description and general information

Navua sedge is a vigorous grass-like, perennial sedge growing normally to 30–70 cm in height but may occasionally reach 2 m. The plant has a continuously growing underground stem which produces shoots at regular intervals along its length. These interconnected plants then develop an extensive shallow fibrous root system.

Each plant has a cluster of drooping leaves at the base of the stem, with each leaf being approximately 5–5 cm long and 3 mm wide. The flower stalk is triangular with the flower at the apex of the stalk. Immediately under the white knob-like flower are six leaf-like bracts. Three of these are long and three are short.

The seed is egg shaped with a hook on one end, and brown to black in colour.



Distribution and habitat

Originally native to tropical Africa, navua sedge has been introduced to a number of countries including Australia, Sri Lanka, Malay Peninsula, Fiji, Vanuatu, Samoa, Tahiti and the Solomon Islands.

It was first noted in Australia growing on the footpaths of Cairns in 1979. It has spread north to the Daintree area and southward to about 20 km south of Ingham in the Hinchinbrook Shire. It has spread west to Kuranda.

Navua sedge prefers areas with an annual rainfall exceeding 2500 mm, without a distinct dry season. In areas where there is substantially less rain and a distinct dry season, it is generally restricted to damp, low-lying parts in pastures or disturbed areas.

Life cycle

Because navua sedge grows from seed as well as through vegetative reproduction it is a very effective colonizer capable of forming mono-specific stands.

Seedlings develop quickly and flower 7–8 weeks after emergence with seed requiring an additional 30 days to ripen on the flower head. At the time of flowering, a new shoot is also produced on the underground stem. This new shoot then grows as the seedling did, producing a flower seven weeks after emergence as well as the new shoot from the underground stem. This process is continually repeated and results in a gradually spreading colony of stems growing from an interconnected underground stem system.

The seeds can germinate at any time of the year but the highest germination occurs when temperatures alternate between 25 and 15 degrees Celsius. The seeds also require exposure to light for germination to occur. The seed heads on each shoot generally produce about 250 seeds each. Seed production per hectare is extremely high at 450–550 million seeds. Longevity of these seeds is greater than 10 years with a third of the seed bank viable after five years.

Control

Maintaining pastures in a vigorous and dense condition reduces the chance of invasion and ensures competition against navua sedge seedling establishment. Heavy grazing is likely to encourage proliferation and spread of the plant.

Mechanical control

Mechanical control of large infestations has been achieved using heavy rollers at monthly intervals to repeatedly break the stems at ground level and allow the grass to out-compete the sedge. Four consecutive monthly crushing applications control were able to control 42% of the

original population. The use of rollers is impractical in hilly country.

Mechanical control methods are generally not a long-term solution and require repeated applications.

Herbicide control

An effective management plan must include the application of regular herbicide treatments every 8–10 weeks during February to October to eliminate navua sedge seed being added to the soil seed bank.

Herbicide control is limited to the use of halosulfuron listed under the minor use permit PER80065 (<http://permits.apvma.gov.au/PER80065.PDF>).

See Table 1 for treatment options allowed by the permit.

Prior to using the herbicide listed under PER80065 you must read or have read to you and understand the conditions of the permit. To obtain a copy of this permit contact your local government or visit www.apvma.gov.au

It is a requirement of the permit that all persons using products covered by this off-label permit comply with the details and conditions listed in the permit. Permit number PER80065 expires on 31 March 2017. While the permit may be extended beyond this date, there is no guarantee that it will, so contact your local government for the latest information after the expiry date.

Further information

Further information is available from your local government office, or by contacting Biosecurity Queensland (call 13 25 23 or visit our website at www.biosecurity.qld.gov.au).

Table 1. Herbicides for the control of navua sedge

Commercial and industrial areas, rights of ways, including footpaths and roadside verges	Foliar spray	<i>Sempre Herbicide</i> 750 g/kg HAOSULFURON-METHYL	130 g/ha	<p>Apply during February – October when navua sedge is actively growing and prior to seed set, with minimum re-treatment interval of 10 weeks between consecutive applications.</p> <p>Apply a maximum of three foliar applications per year, using ground based calibrated boomsprayer or similar equipment, hand-gun or knapsack sprayer.</p> <p>For boomsprayer, apply using a spray volume of 400 L water / ha.</p> <p>For spot spraying using handgun or knapsack sprayer, apply 5.2 g product per 100 square metres (m²); for example, mix 5.2 g product in 100 L water and apply 100 L of the mix per 100 m².</p> <p>Adjust spray equipment to achieve an even spray pattern to ensure complete and uniform wetting of all foliage. For handgun application, a D5 spray tip nozzle or equivalent with an operating pressure of 200 to 400 kPa is recommended.</p> <p>Add <i>Bonza Spray Adjuvant</i> at 1 L/100 L. Refer <i>Sempre Herbicide</i> label.</p> <p>Use in accordance with all label Restraints and Directions for Use, unless otherwise stated in the permit.</p> <p>Observe grazing Withholding Period listed on the product label.</p>
			5.2 g/100 L water (applied to 100 square metres)	

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Fact sheets are available from Department of Agriculture and Fisheries (DAF) service centres and our Customer Service Centre (telephone 13 25 23). Check our website at www.biosecurity.qld.gov.au to ensure you have the latest version of this fact sheet. The control methods referred to in this fact sheet should be used in accordance with the restrictions (federal and state legislation, and local government laws) directly or indirectly related to each control method. These restrictions may prevent the use of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, DAF does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.

