

Invasive plants and animals



## Navua sedge

*Cyperus aromaticus*



Navua sedge is an introduced weed that can invade and replace pastures, particularly in very wet areas.

It is unpalatable to cattle and, as a result, reduces production. It produces large numbers of seeds and can also spread vegetatively.

## Description

Navua sedge is a vigorous grass-like, perennial sedge. It normally grows 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.

## The problem

Navua sedge is extremely aggressive and competes strongly for nutrients, light and moisture. It 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.

## Life cycle

Because navua sedge grows from seed as well as through vegetative reproduction it is a very effective coloniser.

Seedlings develop quickly and flower 10 weeks after emergence. 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 10 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 with estimates well in excess of 200 million seeds.

Longevity of these seeds has not been determined.

## Habitat and distribution

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 Solomons.

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

It 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.

## Declaration details

Navua sedge is not declared under the *Land Protection (Pest and Stock Route Management) Act 2002*, however, plants that are not declared under state legislation may have control requirements imposed by local governments.

## Prevention and 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 the spread of the plant.

### Hygiene

Machinery such as slashers can readily spread seed to other areas so it is important to ensure all such vehicles are thoroughly washed down before moving from an infested to a clean one.

### Mechanical control

Physical removal is possible for small clumps. Each has to be dug out with a spade and the entire plant turned over, exposing the root system while making sure all aerial parts of the plant are completely covered.

For large infestations, it may be possible to bring the underground roots to the surface by discing and allowing them to dry out. The effectiveness of this technique can depend on the weather, since considerable regrowth would be expected in damp conditions.

Mechanical control of large infestations has been achieved in Fiji using heavy rollers at intervals of 8 to 12 weeks to repeatedly break the stems at ground level and allow the grass to out-compete the sedge. This is impractical in hilly country.

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

## Biological control

There is no known biological control method available for navua sedge and one is unlikely to be developed.

## Herbicide control

Chemical control is limited to the use of herbicides registered for control of sedges (*Cyperus* spp.) in general. These herbicides are registered for control of sedges in certain situations specified on the herbicide label. **It is most important to read and heed the label.** Most of these herbicides are non-selective in pastures and have withholding periods.

## Further information

Further information is available from the vegetation management/weed control/environmental staff at your local government office.

**TABLE 1 – HERBICIDES REGISTERED FOR CONTROL OF SEDGES**

Situation	Active ingredient
Aquatic areas	Glyphosate-ipa
Land—commercial/industrial, rights of way	Glyphosate-ipa, glyphosate-mas, imazapyr

**For control in other situations, application rates and critical use comments please refer to the product label.**