

1.0 Organism description

Scientific name

Fimbristylis cinnamometorum (Vahl) Kunth, Cyperaceae.

Common names

None known.

Synonyms (APNI)

Fimbristylis biflora Boeck.

Fimbristylis cyperoides (R.Br.)

Cultivars, strains, or variants

None known.

Previously recorded in New Zealand

No (Ministry of Agriculture and Forestry, Landcare Research).

2.0 Summary

- The identification of this plant was not confirmed at the time this assessment was prepared. Therefore it is a provisional assessment only. It relies on a limited number of sources and some sections are not fully assessed.
- The genus contains c. 250 species, mostly from warm regions. Several species are serious weeds in tropical areas.
- *F. cinnamometorum* is a tufted, perennial, grass-like sedge (possibly annual in some situations), with a very short rhizome. The culms grow to 50cm tall and the leaves to 25cm tall.
- It appears to be confined to the humid tropics and sub-tropics of Asia, Malesia and Australia. In New Zealand, the warm and humid northern North Island is the most likely climate match, with a low probability of establishment in coastal and lowland areas as far south as the northern South Island.
- It generally grows at low elevations and appears to prefer wet habitats such as at the edge of pools, drainage lines, creek beds, damp woodland, and wet grassy places.
- Very little information was found regarding economic impacts overseas. It appears to be a minor weed with negligible economic effects. No environmental impacts are known.

- Economic and environmental impacts of *F. cinnamometorum* in New Zealand are likely to be negligible, although this may depend on where it establishes, and its growth rate and seeding habit. However, it has limited impacts overseas in more favourable environments.

3.0 Basic biology and ecology

3.1 Overseas distribution

- From a limited number of sources, it appears to be restricted to tropical and sub-tropical Asia, Malesia and Australia; including, but not necessarily restricted to India, Sri Lanka, Nicobar Islands, China [south east], Taiwan, Myanmar, Thailand, Vietnam, Philippines, Indonesia and New Guinea (RBG, Mathew 1995).
- Australia; New South Wales [coastal, north from Grafton], Queensland [Cape York to Brisbane], Northern Territory [Arnhem Land], and Western Australia [Kimberley] (AVH).

3.2 Ecology/habitat

- Limited information found - not fully assessed.
- The genus contains c. 250 species, mostly from warm regions (Mabberley 1997). Several species are serious weeds in tropical areas e.g. *F. miliacea*, *F. dichotoma*, and *F. diphylla* (Holm et al. 1977).
- *F. cinnamometorum* is a tufted, perennial, grass-like sedge (possibly annual in some situations), with a very short rhizome. The culms grow to 50cm tall and the leaves to 25cm tall (PlantNET, FloraBase).
- The nut is trigonous, 0.7-0.9mm long and 0.4-0.7mm in diameter (PlantNET). No information was found regarding seed ecology of *F. cinnamometorum*. Other *Fimbristylis* species are dispersed by cattle, birds and water (PIER, Holm et al. 1977).
- It grows in loamy soils, red sandstone, quartzite and sandy soils, generally at low elevations. It appears to prefer open, wet habitats such as the edge of pools, and in drainage lines, creek beds, clay pans, damp woodland, wet flats and grassy places (FloraBase, PlantNET, ANHSIR).

4.0 Likelihood of establishment and spread

4.1 Environmental tolerances overseas and comparison with New Zealand

4.1.1 Environmental tolerances overseas

- It appears to be confined to the humid tropics and sub-tropics of Asia, Malesia and Australia.

4.1.2 Comparison with New Zealand

- The warm and humid northern North Island is the most likely climate match, with a low probability of establishment in coastal and lowland areas as far south as the northern South Island.
- One species, *Fimbristylis squarrosa* is native to New Zealand. It is known from the Bay of Islands, Auckland, Port Waikato, and near hot springs in Rotorua (Moore & Edgar 1970). In Australia, it is found in the Northern Territory, Queensland, New South Wales, Victoria and South Australia (AVH).

4.2 History of spread in other countries

- No information found - not fully assessed.

4.3 Natural dispersal mechanisms and human assisted means of spread

4.3.1 Natural dispersal mechanisms

- No information found specific to *F. cinnamometorum* - not fully assessed.
- *F. miliacea* and *F. dichotoma* are dispersed by cattle as the seed survives passage through the gut (Holm et al. 1977). Seed dispersal in *F. umbellaris* is by water and birds, also from the rhizome (PIER).
- No information found regarding spread of *F. cinnamometorum* by the rhizomes.

4.3.2 Human dispersal

- Human mediated dispersal is possible as a result of transport of seeds in contaminated machinery, produce and soil.

4.4 Distribution of potential habitat in New Zealand

- Habitats in New Zealand would probably be moist or wet, open sites in crops, gardens, lawns, pastures, and roadsides. It may also establish in marshes, ditches, and swampy forest clearings in the Northern North Island, with a low probability of establishing as far south as the northern South Island.

4.5 Constraints to spread and predicted rate of spread in New Zealand

4.5.1 Predicted rate of spread

- Rate of spread by natural dispersal not assessed.
- It could form widespread populations quickly via human vectors as seed in contaminated soil, produce and machinery.

4.5.2 Constraints to spread

- Climate is likely to limit its establishment and spread to warmer areas of the northern North Island, or to the areas outlined above in section 4.1.2.
- No information found regarding other constraints to spread (pests and diseases).

5.0 Consequences

5.1 Overseas impacts

5.1.1 Economic impacts

- Very little information found. It appears to be a minor weed with negligible economic effects.
- Asia; listed as a weed of rice in South East Asia (Moody 1989). Not listed in standard sources such as Randall (2002) and Waterhouse (1993).
- Australia; no impacts known. Two other species, *F. albvirides* and *F. annua* are minor agricultural weeds (Groves et al. 2003).
- Several other species are serious weeds in tropical areas e.g. *F. miliacea*, *F. dichotoma*, and *F. diphylla* (Holm et al. 1977). *F. miliacea* is problematic in rice as it has a high reproductive capacity, and the seeds tend to germinate throughout the growing season. *F. dichotoma* is also a weed of rice, but is also found in drainage ditches, lawns, open wet pastures and cultivated areas.

5.1.2 Environmental impacts

- None known.

5.1.3 Other impacts

- None known.

5.2 Potential impacts in New Zealand

5.2.1 Economic

- Economic impacts are likely to be negligible, although this may depend on where it establishes, and its growth rate and seeding habit. However, it has limited impacts overseas in more favourable environments. Impacts, if any, may be in wet pasture and irrigated crops in warm areas only.

5.2.2 Environmental

- It is unlikely to pose any environment risk in New Zealand. It is not recorded as an environmental weed overseas, its growth habit is of no major concern, and there is no indication that it is particularly invasive elsewhere.

5.2.3 Other impacts

- May be a nuisance weed in home gardens and lawns in warm, wet areas.

6.0 Control techniques

- Not assessed.

7.0 Uncertainty summary

- This is a provisional assessment. The plant identification is not certain and it relies on a limited number of sources. Some sections are not fully assessed.
- The potential New Zealand distribution is uncertain. It is likely to be limited by climate to the northern North Island, with a low probability of establishing as far south as the northern South Island.

- Economic and environmental impacts are uncertain, as many of its ecological attributes were either not assessed, or relevant information was not found.

8.0 References

ANHSIR. Australia National Herbarium Specimen Information Register.
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APNI. Australian Plant Names Index.
http://www.anbg.gov.au/cgi-bin/apx?taxon_id=59275 (24 June 2008).

AVH. Australian Virtual Herbarium.
<http://www.anbg.gov.au/cgi-bin/avh.cgi> (24 June 2008).

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