

Wakame (Japanese)

Undaria pinnatifida

(Harvey) Suringer, 1873

Division: Heterokontophyta
Class: Phaeophyceae
Order: Laminariales
Family: Alariaceae



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Description

Undaria pinnatifida is a brown seaweed that can reach an overall length of 1-3 metres. It is an annual species with two separate life stages. The macroscopic stage (the sporophyte), usually present through the late winter to early summer months and a microscopic stage (the gametophyte), present during the colder months. The sporophyte is golden-brown in colour, with a lighter coloured stipe. The stipe has small pinnae at the top (at the beginning of the blade) and during the reproductive season, a distinctive convoluted sporophyll at the base.

Reproduction & Growth

U. pinnatifida has a complicated life cycle. The macroscopic plant (the sporophyte) produces microscopic zoospores that eventually settle, germinate and grow into microscopic gametophytes. Once all the spores are released, the sporophyte dies. Individual plants can release up to 100 million spores over the spring/summer period. When conditions are favourable, the gametophyte releases sperm and eggs which then fertilise and grow into a macroscopic plant. Temperature, light and depth are all important developmental cues. Plants can grow up to 3m in length, but typically grow to 1.5-2m in less than a year.

Habitat

U. pinnatifida is an opportunistic alga that has the ability to rapidly colonise disturbed or new surfaces. It is found mostly on sheltered reef areas which are subject to oceanic influence, rarely in highly exposed areas. The seaweed will grow in the intertidal zone down to the subtidal zone, to a depth of 15-20 metres. It does not tend to become established successfully in areas with high wave action and an abundance of local vegetation.

Feeding Primary Producer

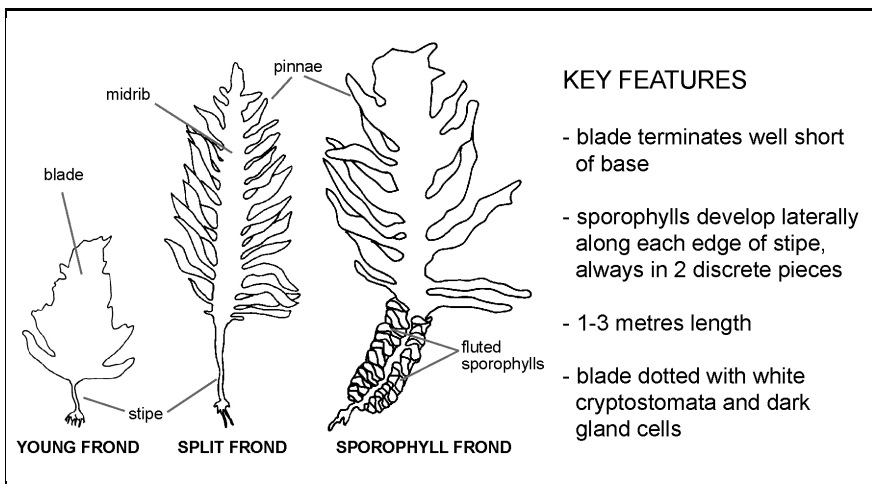
U. pinnatifida produces its own food through photosynthesis.

Predators

In Australia, *U. pinnatifida* has few predators. Observations of fish and sea urchins grazing on algae that has begun to die off have been made in areas of dense *U. pinnatifida* populations.

Impacts

U. pinnatifida is highly invasive, grows rapidly and has the potential to overgrow and exclude native algal species. The effects on the marine communities it invades are not yet well understood, but it is possible that the presence of *U. pinnatifida* may alter the food resources of herbivores that would normally consume native species. In areas of Tasmania it has become a very common species, growing in large numbers around areas in which sea urchins have depleted stocks of native algae. *U. pinnatifida* also has the potential to become a problem for marine farms by increasing labour costs due to fouling problems.

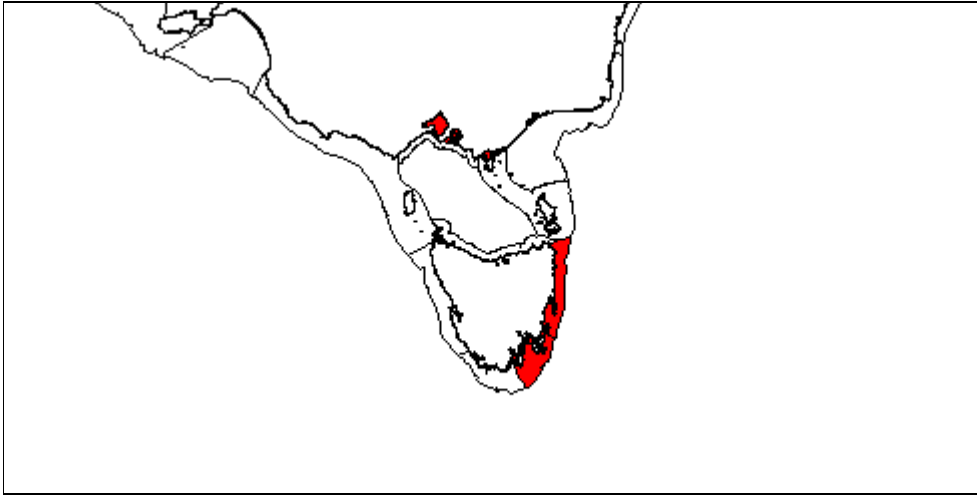


Copyright: Diagram - Sanderson 1990

Similar species

- Alaria esculenta* (Linnaeus) Greville, 1830
- Saccorhiza polyschides* (Lightfoot) Batters, 1902
- Undaria undarioides* (Yendo) Okamura, 1915
- Undariella peterseniana* (Kjellman) Y. Lee, 1998

Australian IMCRA BioRegion Infection Status



Control Options

For control information see the web site: <http://crimp.marine.csiro.au/nimpis>

Likely Vectors - Class/Vector

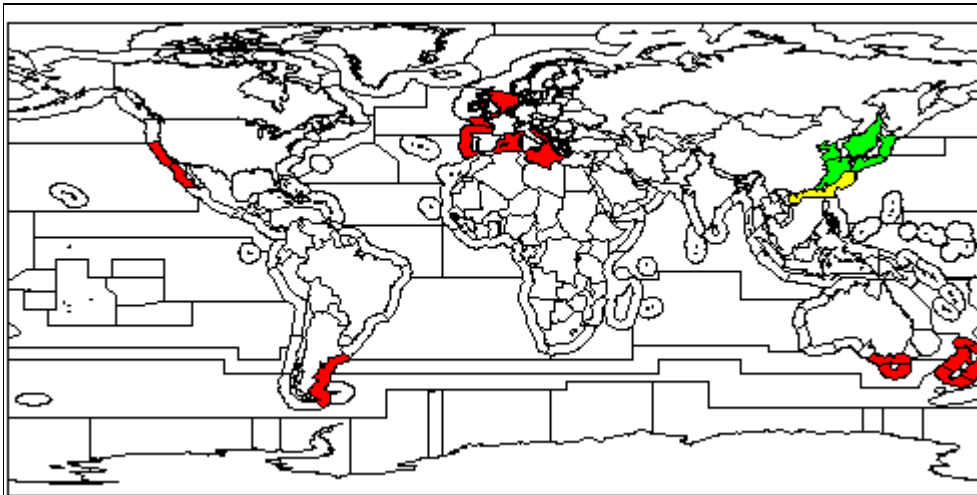
Fisheries

Fisheries: accidental with delibera

Shipping

Ships: accidental as attached or fr

Worldwide BioRegion Infection Status



Key References

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Please use the following citation for this material

NIMPIS (2002). *Undaria pinnatifida* species summary. National Introduced Marine Pest Information System (Eds: Hewitt C.L., Martin R.B., Sliwa C., McEnulty F.R., Murphy N.E., Jones T. & Cooper S.). Web publication <<http://crimp.marine.csiro.au/nimpis>>, Date of access: 11-Nov-2006