

Ulva rigida

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Ulva rigida is a native green alga that is often misidentified as *U. fasciata*. Tufts of short blades with dark rhizoids are clues to identifying *U. rigida*.

Division	Chlorophyta
Class	Chlorophyceae
Order	Ulvales
Family	Ulvaceae
Genus	<i>Ulva</i>



IDENTIFYING FEATURES

DESCRIPTION

Thalli thin, sheet-like, as turfs, tufts or solitary blades, variable in shape, to 10 cm in height. Blades ruffled or flat, with small microscopic teeth on margins. Blades unperforated or perforated with few to many small holes. The blades are two cells thick; the two layers easily separate into single cell layers. Holdfasts comprised of small, tough rhizoids.

U. fasciata is similar but has few or no rhizoids, has larger, square cells, and does not separate easily into two sheets.

COLOR

Bright grass green to dark green, gold at margins when reproductive. May be colorless when stressed.

HABITAT

Ulva rigida is commonly found on intertidal rocks, in tidepools, and on reef flats. Often abundant in areas of fresh water runoff high in nutrients such as near the mouths of streams and run-off pipes.

STRUCTURAL

Cells rounded, rectangular, 11-17 μm wide, 15-22 μm long, somewhat elongated, in ordered rows or randomly arranged. Blades two cells thick with clear space between cell layers.

DISTRIBUTION

HAWAI'I

All Hawaiian Islands.

WORLDWIDE

Eastern Atlantic, Caribbean, Indian and Pacific Oceans.

MECHANISM OF INTRODUCTION

Indigenous to Hawai'i.

ECOLOGY/IMPACT

Ulva rigida is commonly found in areas where nutrients are high, wave forces low and herbivory reduced. It is tolerant of stressful conditions, and its presence often indicates freshwater input or pollution.

Ulva species are early-successional algae, quickly taking over new substrate on boulders that are cleared by storm disturbance. *Ulva* and *Enteromorpha* species are generally the first macroalgae to colonize newly opened substrate in intertidal areas with high nutrients. Their opportunistic success can be attributed to their simple morphologies and fecundity. In *Ulva* species, between 20 and 60 percent of their overall biomass can be allocated monthly to reproduction. The alga's reproductive success is partly due to the reproductive cells' photosynthetic ability. The zoospores' and gametes' ability to photosynthesize subsidizes their motility and rapid growth once attached to the substrate.

In Hawai'i, *U. fasciata*, or *Limu palahalala* is a popular seaweed for consumption. Preparation methods include chopped in salads with other limu varieties, boiled in soups, or as a relish.

REFERENCES

- Abbott, I.A., 1996. Limu: An ethnobotanical study of some Hawaiian seaweeds. National Tropical Botanical Garden, Lawai, Kaua'i, Hawai'i. 4th edition.
- Littler, D.S. and Mark M., 2000. Caribbean Reef Plants. OffShore Graphics, Washington, D.C.
- Russell, D. J. and G. H. Balazs, 2000. Identification manual for dietary vegetation of the Hawaiian green turtle, *Chelonia mydas*. NOAA TM-NMFS-SWFSC-294. 49 pp.

WEB LINKS

- Introduction to Marine Botany, Stanford University. <http://www.mbari.org/~conn/botany/default.htm>
- Hawaiian Reef Algae. <http://www.botany.hawaii.edu/ReefAlgae/>