



Asparagopsis armata

Common name: Harpoon weed.

Irish name: Feamainn mhuingha.

Phylum: Rhodophyta
Class: Florideophyceae
Order: Bonnemaisoniales
Family: Bonnemaisoniaceae
Genus: *Asparagopsis*
Species: *A. armata*

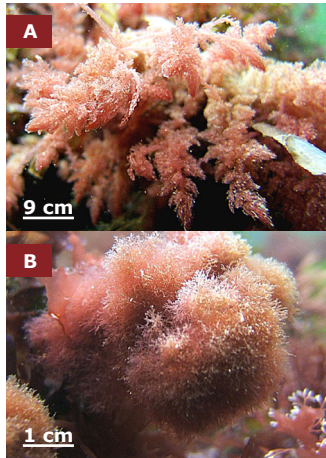


Fig 1. Gametophyte (A) and tetrasporophyte (B).

Morphology

- Red alga with two red to rosy pink macroscopic life phases. The gametophyte is easily identified by some branches developing into harpoon-like anchor structures. The tetrasporophyte looks like a cotton-wool ball and its thallus is highly reduced and profusely branched.
- The gametophyte can reach 25 cm in length but the tetrasporophyte is generally less than 3 cm in diameter.
- The tetrasporophyte is often confused with other red tufted seaweeds, particularly with *Bonnemaisonia hamifera* commonly known as Bonnemaison's Hook Weed. Identification requires the use of a microscope.
- No other species of this genus are known in Ireland.

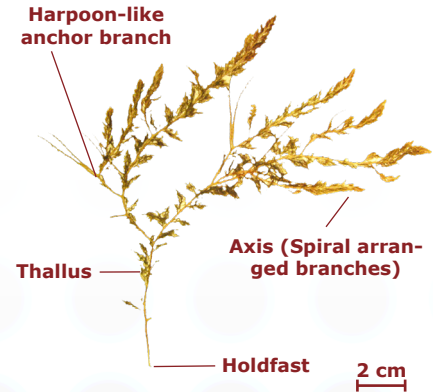


Fig 2. Morphology.

Reproduction

- *Asparagopsis armata* has two morphologically different macroscopic phases in the life-cycle (see LC1*). Male and female structures occur on different individuals.
 - ♀ Fertile female: The female structures are flask-shaped.
 - ♂ Fertile male: The male branches are club-shaped.
 Both, female and male structures are not visible to the unaided eye.
- ⊕ The tetrasporophyte (Fig 1B) is also known as the *Falkenbergia* phase.

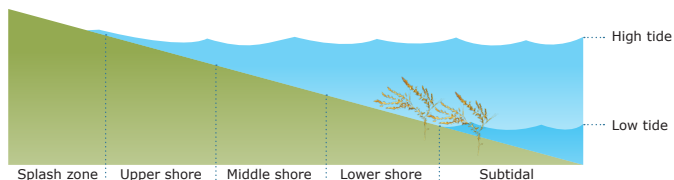
*Note: Life-cycle 1 (LC1) on page 3.



Asparagopsis armata

Distribution and habitat

- Found in New Zealand, Australia, W Mediterranean and NE Atlantic.
- **Gametophyte**- Attaching to other algae by its hooks, mainly in sandy pools.
- **Tetrasporophyte**- Free floating or associated with other seaweeds, in particular *Ulva* spp. and *Corallina officinalis*. Both are found in sheltered to slight wave-exposed locations.



Seasonality



Note: These seasonal characteristics may vary slightly from year to year.

Wild resource and cultivation



interesting facts

- This species is known to have several interesting bioactive molecules, mainly sulphated polysaccharides and bromophenols. These compounds have been found to have anti-cancer, anti-fungal and anti-microbial properties. Extracts are used as natural preservatives in cosmetics, in anti-dandruff and scalp cleansers and in anti-acne treatments.
- It is an introduced species from the southern hemisphere. It arrived in the Atlantic and Mediterranean in the 1920's. In Ireland it was first recorded in Galway harbour in 1939, as the "Falkenbergia" stage.



- This species has been cultivated on longlines and tank culture in Ireland since the early 1990's to extract natural preservatives for cosmetics. It is now being investigated as a feed addition for cattle to reduce their methane emissions.

© Pictures: Figs 1A & 1B by Alex Wan and Fig 2 by Svenja Heesch.
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