Laminaria digitata

Common names: Oarweed, Tangle, Strapweed.
Irish names: Coirleach, Ribíní.

Phylum: Ochrophyta
Class: Phaeophyceae
Order: Laminariales
Family: Laminariaceae
Genus: Laminaria
Species: L. digitata

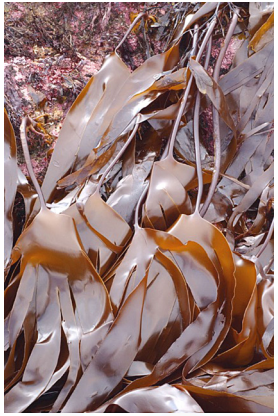


Fig 1. *Laminaria digitata* at low-tide.

Morphology

- Brown alga with a large holdfast, long stipe and a large, usually split (digitate or finger-like) blade.
- Very smooth, almost plastic-like to the touch.
- Exposed at low-tide; individuals collapse on top of one another.
- The stipe is long, flexible, smooth, oval in cross-section, without epiphytes.
- The blade is broad, commonly with 5-20 fingers.
- Generally 1-2 m, but may be larger.
- Frond is golden to deep brown in colour.
- Two *Laminaria* species commonly occur in Ireland: *L. digitata* and *L. hyperborea*. Mature individuals can be distinguished by the characteristics of the stipe. A third species, *Laminaria ochroleuca* has recently been reported in Ireland but is rare.

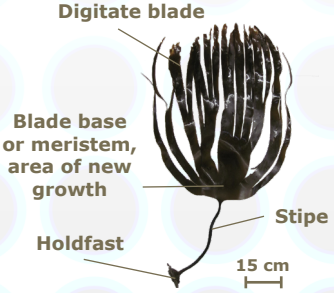


Fig 2. Morphology.

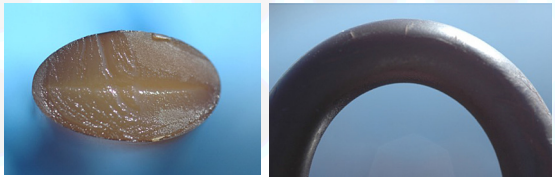


Fig 3. Close up of the stipe – oval in section (left), smooth, flexible (right).

Reproduction

- *Laminaria digitata* sporophytes are the macroscopic phase of a two-stage life-cycle (see LC4*).
- The reproductive tissue (sorus) appears as slightly raised and darkened areas on the fingers of the blades.

♀♂ Male and female gametes occur on separate microscopic individuals (gametophytes).

*Note: Life-cycle 4 (LC4) on page 4.

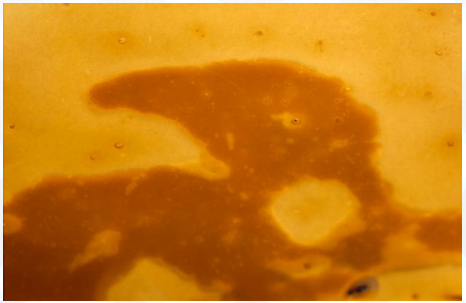
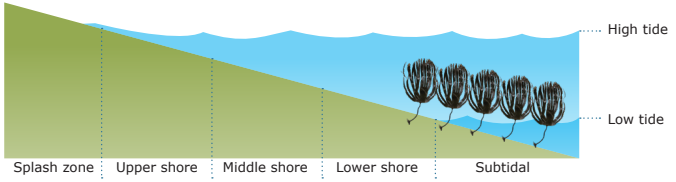


Fig 4. Detail of the sorus on the blade.

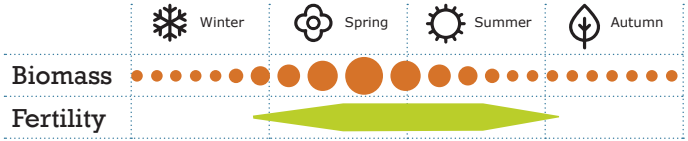
Laminaria digitata

Distribution and habitat

- Present throughout E and WN Atlantic shores.
- It inhabits moderately sheltered rock-pools in wave exposed areas, to fully exposed coasts, always at full salinity sites and preferring rocky substrata.



Seasonality



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

Wild resource and cultivation

interesting facts

• This alga is of agricultural interest for its growth-enhancing properties. It is also a source of bioactive compounds with hypotensive and antibacterial properties.

• All the kelps contain alginates which are used as for thickeners, stabilisers, and gelling agents for food: E400 – alginic acid, E401 – sodium alginate, E402 – Potassium alginate, E403 – Ammonium alginate, E404 – Calcium alginate, E405 – propylene glycol alginate (known in the food industry as as PGA).

• This species was first cultivated on longlines in Ireland in the late 2000's.

• Kelp beds reduce coastal erosion by dampening the intensity of wave forces before they hit the shoreline.

Soler-Vila *et al.*(2022). Macroalgae Fact sheets (2nd Edition), Galway, Ireland. 64 pp
www.irishseaweed.com - www.macroalgaeinitium.com