

Phaeophyceae

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► Features:

- Known as brown algae
- Dark-brown to olive green
- Marine, very few species found in fresh water
- See weeds
- Mainly present in cold water, warm water brown algae also common but less than cold water
- Free living, some epiphytes and endophytes in association with other algae
- Unicellular to more than 100 meters
- Source of iodine, fertilizers



Laminaria

► Pigments:

- Chlorophyll a and Chlorophyll c, carotene, and xanthophyll – all are masked by fucoxanthin – a brown pigment



Ectocarpus

► Storage Food:

- Laminarin, mannitol, and fats or fat-like structure



Fucus

► Cell Wall

- Two layered
- Inner cellulose layer
- Algin present in outer cell layer, a colloidal compound use to make adhesives and artificial silk

► **Reproduction:**

- Vegetative reproduction by fragmentation
- Asexual reproduction by either bi-flagellate (unequal) or non-flagellate tetraspores
- Sexual reproduction ranges from isogamy to oogamy
- One or eight female gametes present in an oogonium, antherozoids uni- or bi-flagellate
- Alternation of generation isomorphic, except few heteromorphic

► Evolution:

- Parallel to Chlorophyceae
- Multicellular reproductive organs with jacket layer and developed vegetative body
- Sieve-tube cells developed
- In some species, cambium like region developed
- Cuticle layer present to protect from evaporation

► Example:

- *Ectocarpus, Laminaria, Fucus, Sargassum, etc.*



Sargassum