RHODOPHYCEAE

BOTANY

PANKHURI MA'AM

ANTHE

AAKASH NATIONAL TALENT HUNT EXAM

Your Gateway To Success

For Class VII to XII

Current Students & Passouts

Aakash + BYJU'S

NEET/JEE 2023 Courses for Repeater/ XII Passed Batches

Up to 50%* Scholarship

REGISTER FOR FREE

Scholarship Test Details

Take the test at a date and time of your choice
Timings : 9AM to 7PM Daily | Duration : 35 mins
Mode : Online (from home)

Avail scholarship on

1-Year Integrated Classroom Courses for NEET and JEE

Who can Appear for the Test ?

Class 12th passed students

Aakash Live Webinars

Aakash + BYJU'S

Complete Roadmap to NEET 2023 | The A-Z of becoming a successful Doctor

11th Sept 2022

12:30 pm

Dr. Sachin Kapur
Biology Expert - NEET

12TH CLASS | TUESDAY, THURSDAY
11TH CLASS | MONDAY, WEDNESDAY, FRIDAY

3 PM | 4 PM | 5 PM | 6 PM

MISSION MBBS

VIVEK SIR

CHEMISTRY | 3:00 PM

ANUSHRI MA'AM

PHYSICS | 4:00 PM

SACHIN SIR

ZOOLOGY | 5:00 PM

PANKHURI MA'AM

BOTANY | 5:00, 6:00 PM

PUSHPENDU SIR

ZOOLOGY | 6:00 PM

FREE FOR 14 DAYS!


BST
BYJU'S SCHOLARSHIP TEST
ICC WORLD T20 AUSTRALIA 2022
Classes 4-10
Test your conceptual understading and aptitude
Get a chance to watch the ICC T20 World Cup in Australia!
&
Get upto
100% Scholarship

Recall: Classification of Algae

Based on the **colour** and the **pigments**

Rhodophyceae

Red algae
(Chlorophyll d,
Phycoerythrin)

Phaeophyceae

Brown algae
(Chlorophyll c,
Fucoxanthin)

Chlorophyceae

Green algae
(Chlorophyll b)

Chlorophyll a is common to all three groups.

Recall: Chlorophyceae/ Green Algae

Habitat	Mostly freshwater forms, very few marine forms
Cell wall	Cellulose (inner) and pectose (outer)
Pigments present	Chlorophyll a and b major photosynthetic pigments
Food stored	Starch, Storage bodies called Pyrenoids (protein + starch)
Members	*Chlamydomonas, Chlorella, Volvox, Spirogyra, Chara*
Reproduction	a) Vegetatively by **fragmentation** b) Asexually by **flagellated zoospores** c) Sexual reproduction may be **isogamous**, **anisogamous** or **oogamous**

Alternation of generations

- **Haplontic** life cycle

Rhodophyceae: Red Algae

Rhodophyceae: Red Algae

- Most **ancient algae**
- Oldest plant fossil is **1.6 billion years old**

Fossil of the ancient red algae

Rhodophyceae: Red Algae

- **Habitat**: Predominantly **marine**
- Occur in both well-lighted regions close to the surface of water and also at great depths in oceans

Rhodophyceae: Red Algae

Cell wall

- **Cellulose, pectin and polysulphate esters**

Rhodophyceae: Red Algae

Pigments in red algae

- Chlorophyll ‘a’
- Chlorophyll ‘d’
- Phycoerythrin Responsible for the red colour.

Rhodophyceae: Red Algae

Food storage

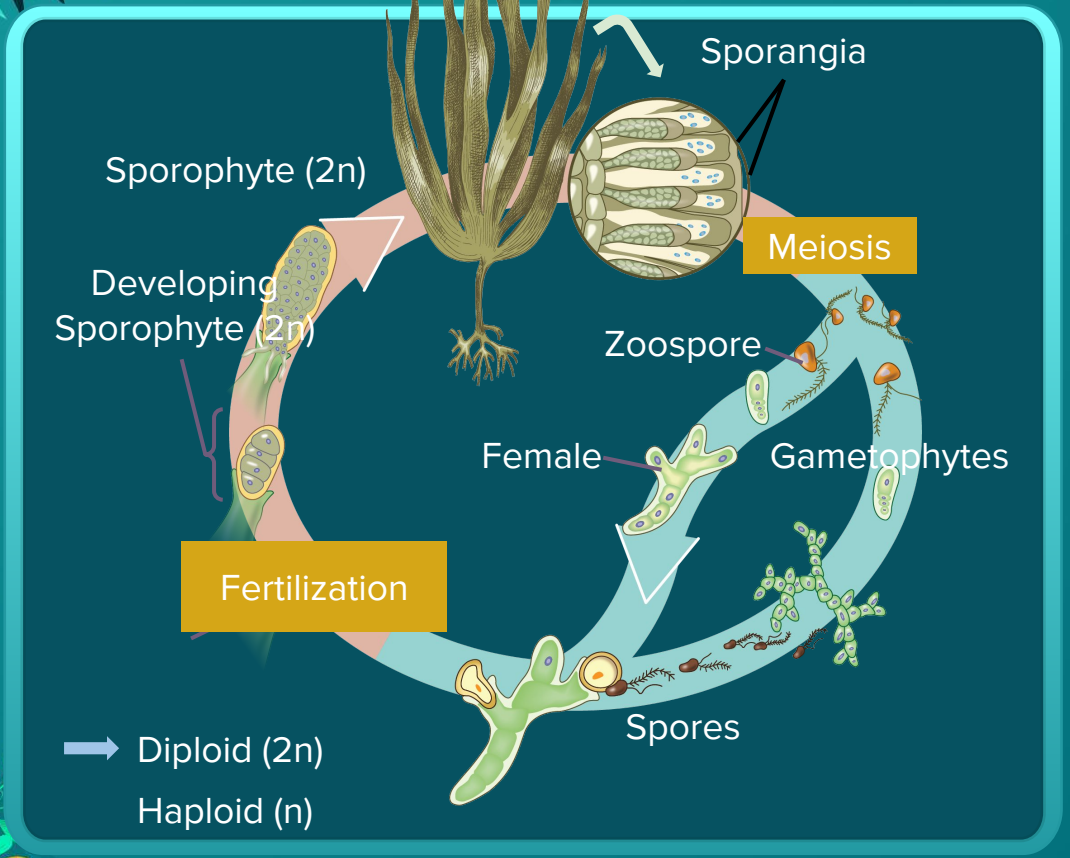
- In form of **Floridean starch**

Rhodophyceae: Red Algae

Reproduction

- **Vegetatively**: By fragmentation
- **Asexually**: By non-motile spores
- **Sexually**: By non-motile gametes
  - Oogamous
  - Accompanied by complex post fertilisation developments

Rhodophyceae: Red Algae



Alternation of generations: Haplontic life cycle

Rhodophyceae: Red Algae

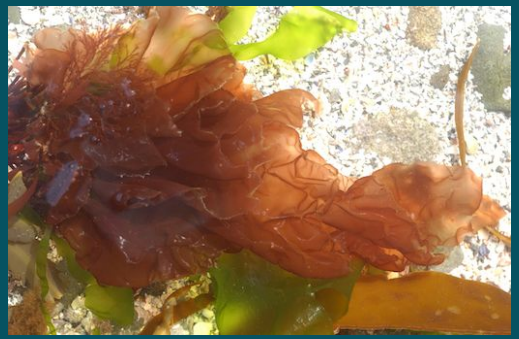
Alternation of generations

- **Haplontic** life cycle
- Exception is *Polysiphonia:* **Haplo-diplontic** life cycle

Rhodophyceae: Red Algae

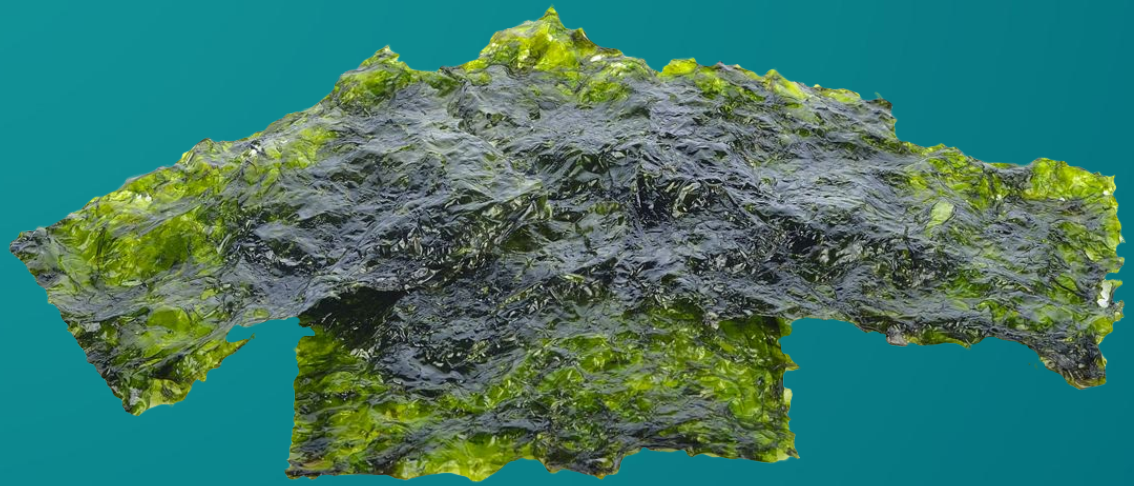
Pyropia

- **Nori** weed
- Rich in
  - Calcium
  - Magnesium
  - Antioxidants



Do you recognise this delicacy?

Rhodophyceae: Red Algae



Nori sheets

Rhodophyceae: Red Algae

Gracilaria

- **Agar-agar**
  - Hydrocolloid
  - Gelling agent

Rhodophyceae: Red Algae

Porphyra

- Rich in nutrients
- Edible: Soups, salads and sushi

Rhodophyceae: Red Algae

Gelidium

- Also used to make **agar-agar**

Rhodophyceae: Red Algae

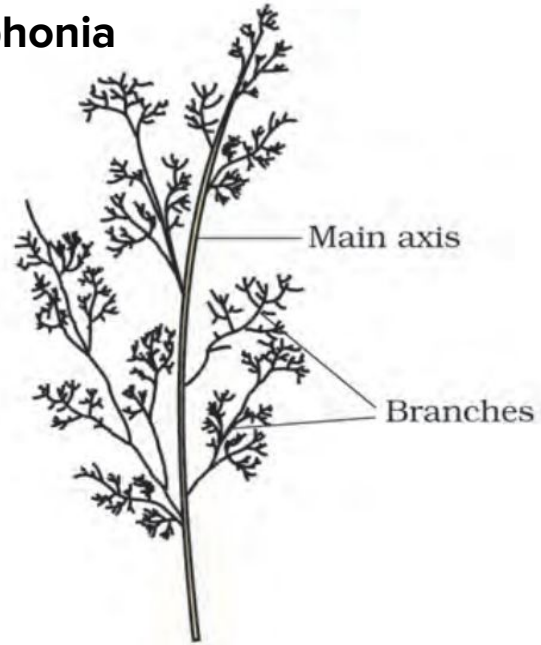
Chondrus

- Also called **irish moss**
- Produces **carrageenan**: **Gelling agent**

Rhodophyceae: Red Algae

(c) Red algae (i) Porphyra (ii) Polysiphonia

(c-i)



(c-ii)

Summary

Habitat	Marine (greater concentrations found in the warmer areas)
Cell wall	Cellulose
Pigments present	Chlorophyll a, Chlorophyll d, **Phycoerythrin**
Food stored	Floridean starch
Members	*Polysiphonia, Gracilaria, Gelidium, Porphyra*
Reproduction	a) Vegetatively by **fragmentation** b) Asexually by non-motile **spores** c) Sexually by non-motile gametes (**Oogamy**)

Alternation of generations

- **Haplontic** life cycle
- Exception is ***Polysiphonia*** - **Haplo-diplontic** life cycle

Let’s Compare

Rhodophyceae	Phaeophyceae	Chlorophyceae
Red algae	Brown algae	Green algae
Chlorophyll a, Chlorophyll d, Phycoerythrin	Chlorophyll a, Chlorophyll c and Fucoxanthin	Chlorophyll a, Chlorophyll b, Carotenoids
Mainly marine	Exclusively marine	Mainly freshwater
Mainly multicellular	Exclusively multicellular	Mainly Unicellular
Sessile	Sessile	Motile and flagellated

Rhodophyceae	Phaeophyceae	Chlorophyceae
No motile gametes	Motile gametes	Motile gametes
Floridean starch	Laminarin or mannitol	Starch
Cell wall has cellulose and sulphated phycocolloids	Cell wall has cellulose and non-sulphated phycocolloids	Cell wall is made of cellulose
Eg: *Chondrus*, *Gelidium*, *Gracilaria*	Eg: *Fucus*, Kelp, *Laminaria*	Eg: *Chlorella*, *Chlamydomonas*, *Spirogyra*

Bryophytes

Bryophytes: The First Land Plants

BRYON → Moss

PHYTON → Plants

Bryophytes live on land but need water for fertilisation

Amphibians of plant kingdom

Bryophytes

Habitat: Moist shaded areas

Lack xylem and phloem
(Non-vascular plants)

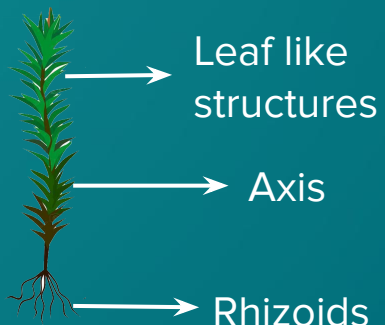
Structure of Bryophytes

Plant body is undifferentiated (thallus)

Thallus

Prostrate

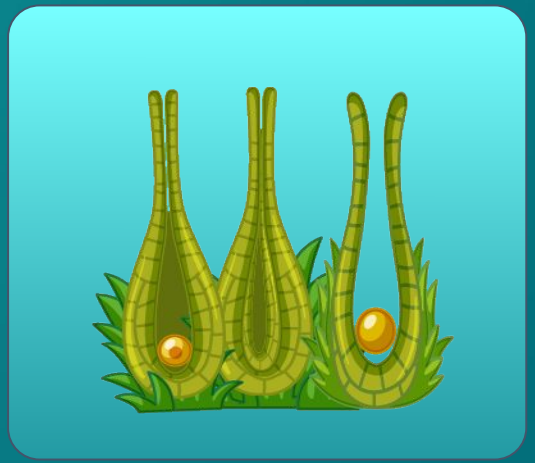
Erect



Gametophytes of Bryophytes

Antheridium (Male sex organ)

Archegonium (Female sex organ)




Keep
Learning!