Welcome students. Today we're going to do unit 2 algae

module name morphology of sargassum
module 28.
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This module focuses on the systematic position of sargassum, the occurrence, external morphology of sargassum and the internal structure of thallus.

By the end of this session,the learner would be able to understand the classification of sargassum plant, the different parts of sargassum plant would be able to visualize the components and functions of each part and study the morphology of sargassum plant.

Let us first understand the systematic position of sargassum

Sargassum belongs to the division phaeophyta. plants belonging to this division are commonly called as Brown algae. They are called so because of the abundance of a xanthophyll pigment called as the fucoxanthin.

They belong to the class phaeophyceae meaning here the reserve food material in this plants are stored in the form of Laminarin and D-mannitol, which is a sugar.

They belong to the subclass cyclosporae, wherein the alternation of generation is absent.

They belong to the family sargassaceae, where the plant body is differentiated into front, stipe and the Holdfast

genus sargassum.

Let us see the occurrence of this plant, sargassum is called a Marine Brown algae.

It is commonly called the Gulf weed. Sargassum, which is a Gulf weed, is a rich source of

manure and fodder we can use it to increase the fertility of a crop and also to feed our livestock. This algae occurs in both the forms free floating and the attached form.

The free floating form is abundant in the North Atlantic Sea, therefore they are termed as Sargasso Sea.

This Algae because it is abundant in this Sargasso Sea, they're a big nuisance to the ship. In India they are found in abundance along the East and the West Coast. If you happen to walk along the beach, you will see this plant along the shore.

Let us learn the external morphology Now

The plant body is branched flattened structure resembles a Bush. It shows resemblance with the sea plant as the body is composed of stem like stipe an leaf like frond.The plant body is differentiated into three main parts. That is the holdfast the main axis and the laterals

let us see the first part that is.

The holdfast. It is also called as the attaching disc because it helps the plant to get attached to a substratum. They are irregular in shape and multicellular. In nature, holdfast is absent in the species found in the Sargasso Sea as they are free floating.

Moving on to the main axis, main axis is also known as this stipe. They are flattened or cylindrical in structure. The main axis bare branches of limited an unlimited growth. That is the long laterals and the short laterals.

The short laterals present on the main axis can terminate into receptacles. Air Bladders or the sterile laterals. Let us see what do we mean by receptacles. Receptacles are the fertile branches arising in the groups. The sex organs are enclosed in a specialized flask shaped cavity called as the conceptacles they are cylindrical or flattened in structure. The shape varies. It can be for fusiform or finger,like a flat structure. It can be spinous or dentate.

Now towards my Right hand side you can see a picture of sargassum wherein the receptacles are being pointed. in real The receptacle looks somewhat like this. They will be fusiform or dented in nature.
Here the sex organs or the fertile cavities are present.

Moving on to the air bladders,they are also known as the vesicles or the Pneumatocyst.

They are filled with air, may occur singly or in groups.

They are found on the axis of the short laterals.

The shape of this air bladder varies from spherical to obovate to elliptical. Or ellipsoidal, and they're generally stalked, meaning they have a small structure which is present at their base.

The tip of the bladder ranges from smooth to Mucronate In nature. mucronate is nothing but pointed tip.

The function of air bladders is that they are respiratory in nature.

The air in this bladder contains oxygen, carbon dioxide and nitrogen.

These vesicles help the plant To remain to give buoyancy to the plant in the unattached

speech is an in the attached form. They keep them upright.

This is a picture of air bladder. How it actually looks. You can see the shape of the air bladders, they are

round to ellipsoid. And the tip is pointed which is nothing but the mucronated tip.

Moving on to the sterile Laterals they are commonly known as the leaf or the phylloclades.They are stalked or petiolated. the shape of sterile laterals varies from linear to ovate, oblong or spindle shaped. The Margins can be entire, can be dented or serrate in nature. The Midrib is flattened and an it is present in the leaves.

The leaves and the vesicle. Possesses a sterile cavity called as the Cryptoblast. They

open outside by stomata like opening called the Cryptoblamata or the Cryptostomata.

Now when you take a section of the thallus, you will get to see three main layers. They are the outermost, the middle and the innermost. The outermost layer is called the Meristoderm.

The middle layer is called as the cortex. The innermost layer is called as the Medula.

Let us see what this outermost layer contains. They are also called as epidermal layers.

Outermost meristoderm is called as the epidermal layer. They contain mucilage or the cuticle. This cuticle is a waxy layer which helps the plant to. Which makes the plants resistant to any attack fungal attack. They are compact to columnar in nature, the cells are rich in Chromaplast which is a plastid and they are

found in the Palisade region. The main function of the Outermost Mersitoderm is photosynthetic and formation of new cell towards inside.

the middle layer is thick walled. The outermost layer of the Cortex is known as the hypodermis. The main function of this layer is storage of food.

Moving on to the last layer that is the innermost which is called as the Medula. It is the central region. The cells here are thin walled. They show presence of scalariform thickenings since they show scalariform thickenings, the function becomes mechanical support and food conduction.

These are some of the books which you can refer for this module.

Thank you.