

Classification

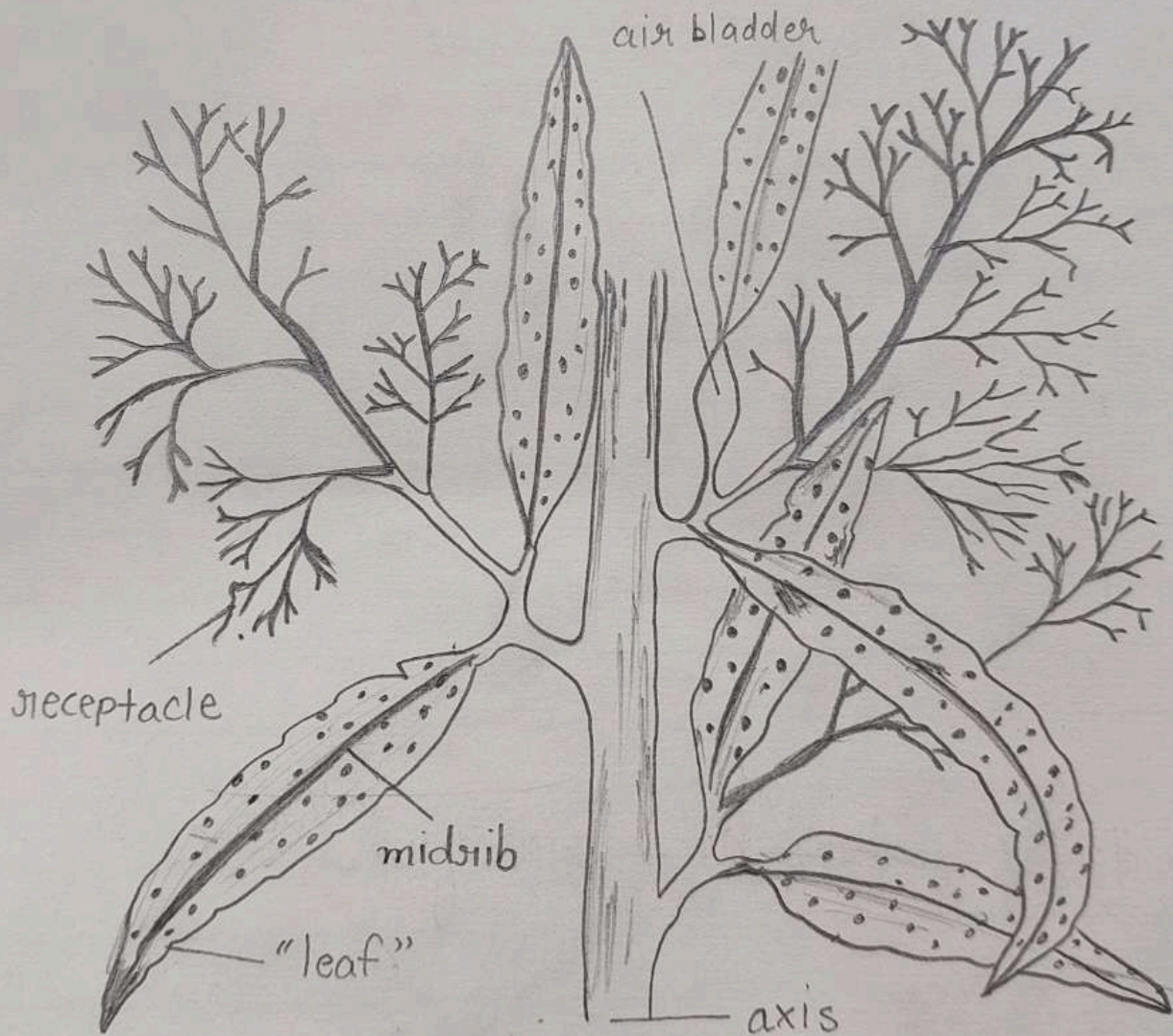
Kingdom = Plantae

Class = Phaeophyceae

Order = Fucales

Family = Sargassaceae

Genus = Sargassum



Sargassum, A part of the plant Vansh
26

Classification of Phaeophyceae

Sargassum

- Sargassum is a marine alga. Commonly occurs in warmer seas. It is chiefly found in tropical and subtropical seas of southern hemisphere, the huge floating mass of this plant found in Atlantic seas.
- Plant body is thalloid, large and macroscopic brown in colour.
- Plant body is sporophytic and remain attached to substratum with hold fast.
- The main axis bears numerous spirally arranged primary laterals or branches of unlimited growth. They give rise to secondary laterals or branches of limited growth.

Generally secondary laterals become flat, photosynthetic and leaf-like in shape.

Rhizopus

- Common name =
- Occurrence:- Majority of the species are saprobes growing on dead and decaying plant or animal matter. It occurs very commonly on rotten or stale bread and is called bread moist.
- It causes the common fruit rot disease of many fruits like Actocarpus, Pyrus malus etc.
- Mycelium is aseptate and multinucleate.
- Hyphae are surrounded by a wall made up of Chitin.

It encloses the cytoplasm.

Mycelium consists of many - branched, white filamentous and tubular hyphae giving a cottony appearance.

Classification

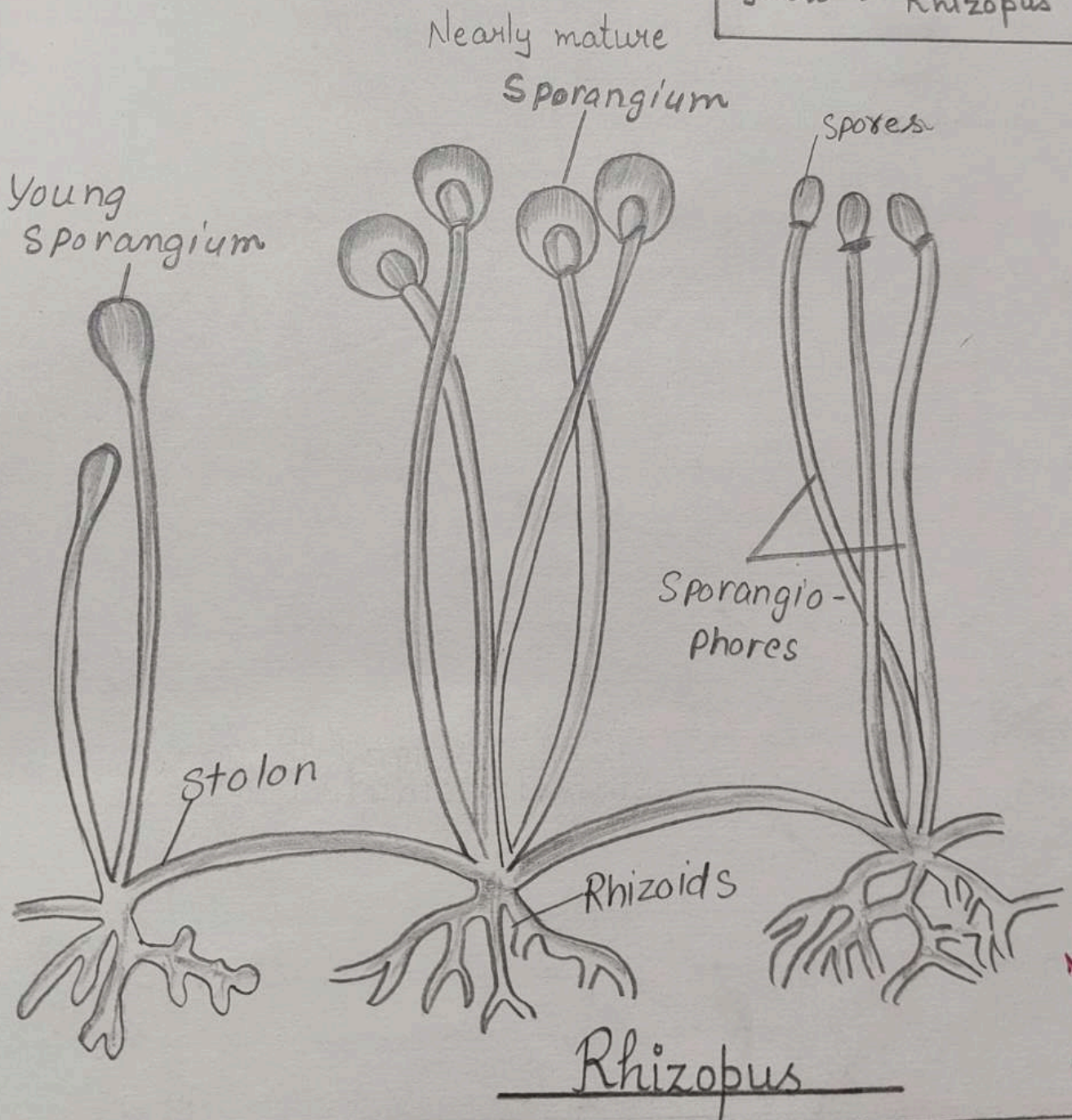
Kingdom = Fungi

Phylum = Mycota

Class = Zygomycetes

Order = Mucorales

Genus = Rhizopus



Saccharomyces (Yeast)

- The fungus is saprophytic. It occurs on substances rich in sugar, such as molasses, milk, honey and date palm.
- They grow in toddy juice, grape juice and sugar easily.
- Some dried yeast is placed in a solution of molasses and water or in sugar solution for a few days. Yeast cells appear in abundance.
- Preparation of Slide:- A few cells are taken on slide and stained in cotton blue.
- They may be mounted in cotton blue itself or lactophenol. The study can be done following heads.
 1. Fungus structure
 2. Reproductive structure

Classification

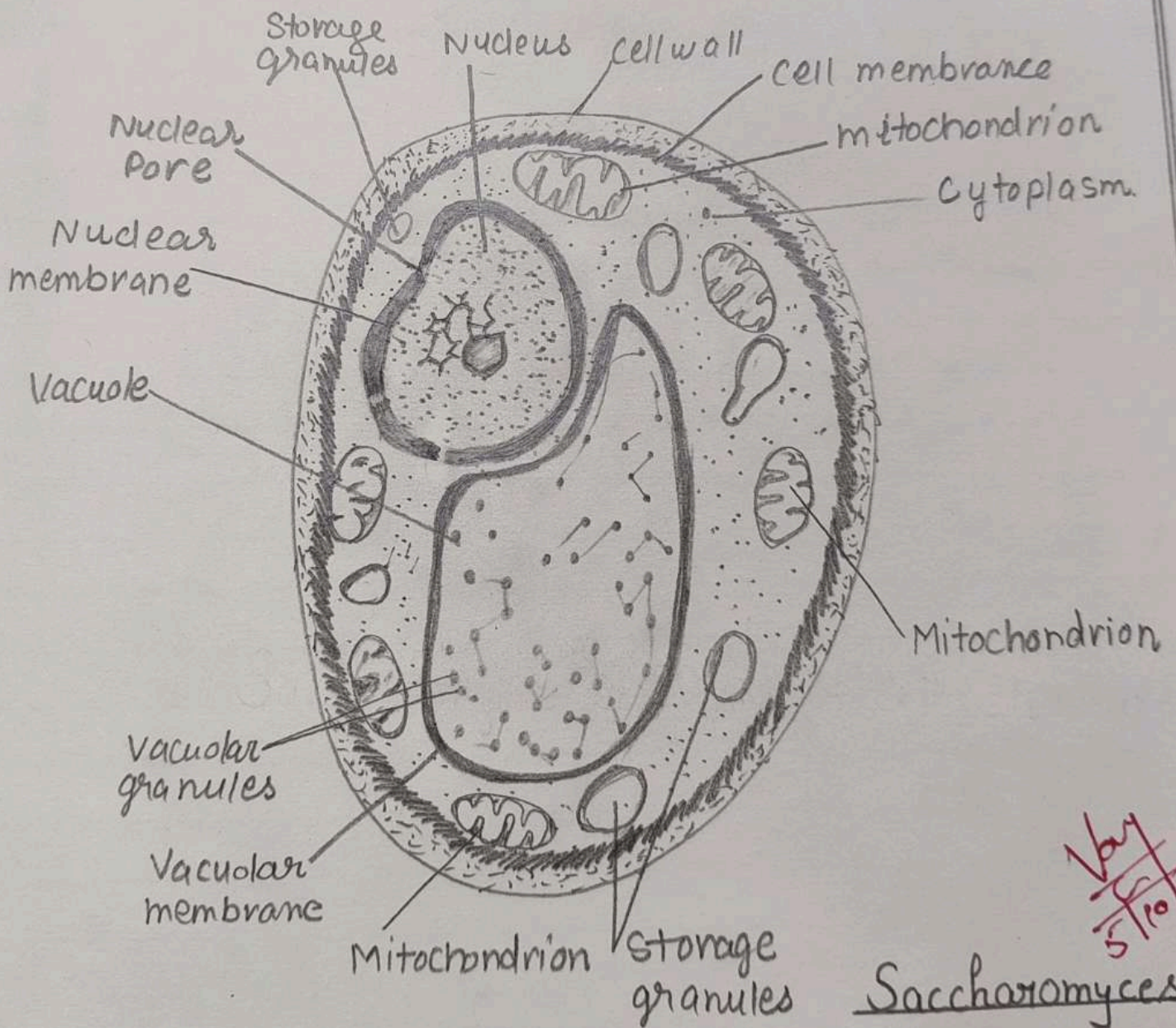
Kingdom = Mycota

Phylum = Eumycota

Class = Hemiascomycetes

Order = Endomycetales

Genus = Saccharomyces

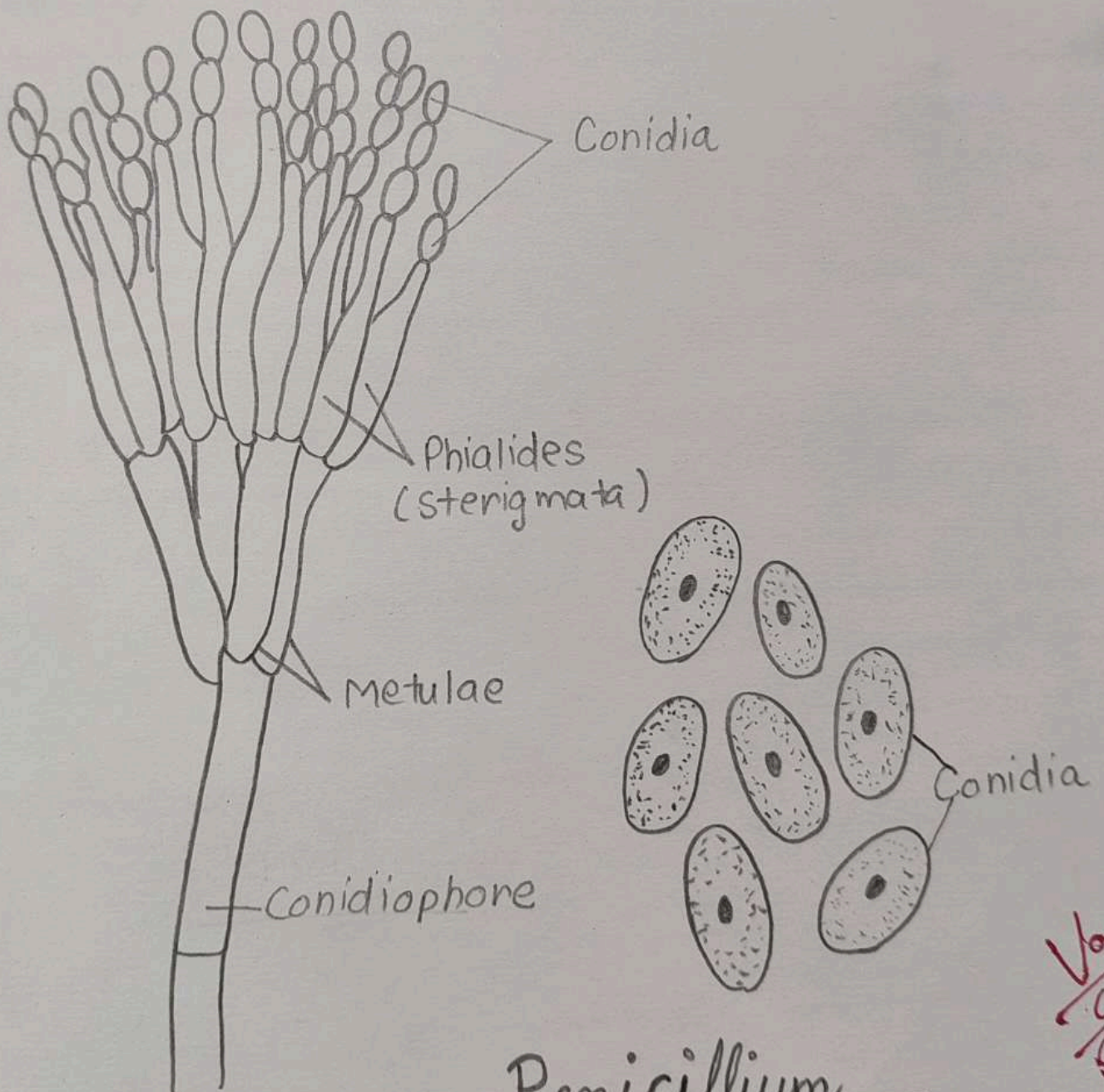


Penicillium (Blue mold)

- Penicillium grows in association with Aspergillus. The fungus is an obligate parasite and causes disease in the host.
- It is found on citrus and other fruits and food stuffs. It is a weak saprophytes.
- Vegetative Structure:- The mycelium is septate. Each cell is uni or multinucleate.
- It grows superficially on substratum surface and may penetrate deeply.
- Hyphae are coloured due to pigments on the surface of hyphal walls.
- Asexual Reproductive Stage:- For this stage, slide of the material is prepared.
- When it becomes green, yellow or blue colour this is the conidia bearing stage.

Classification

Kingdom = Mycota
Division = Eumycota
Sub-division = Ascomycotina
Class = Plectomycetes
Order = Eurotiales
Family = Eurotiaceae
Genus = Penicillium



Penicillium

Voy
4/5/11

Peziza

- Genus *Peziza* is popularly known as cup fungus because of its cup shaped apothecia, it grows saprophytically on animal dung, human plant debris or rotting wood, well fertilized garden green house.

Some common species are *P. bodia*, *P. repanda*, *P. catinum*, *P. postulata* etc.

Mycelium is well developed and consist of branched septate hyphae.

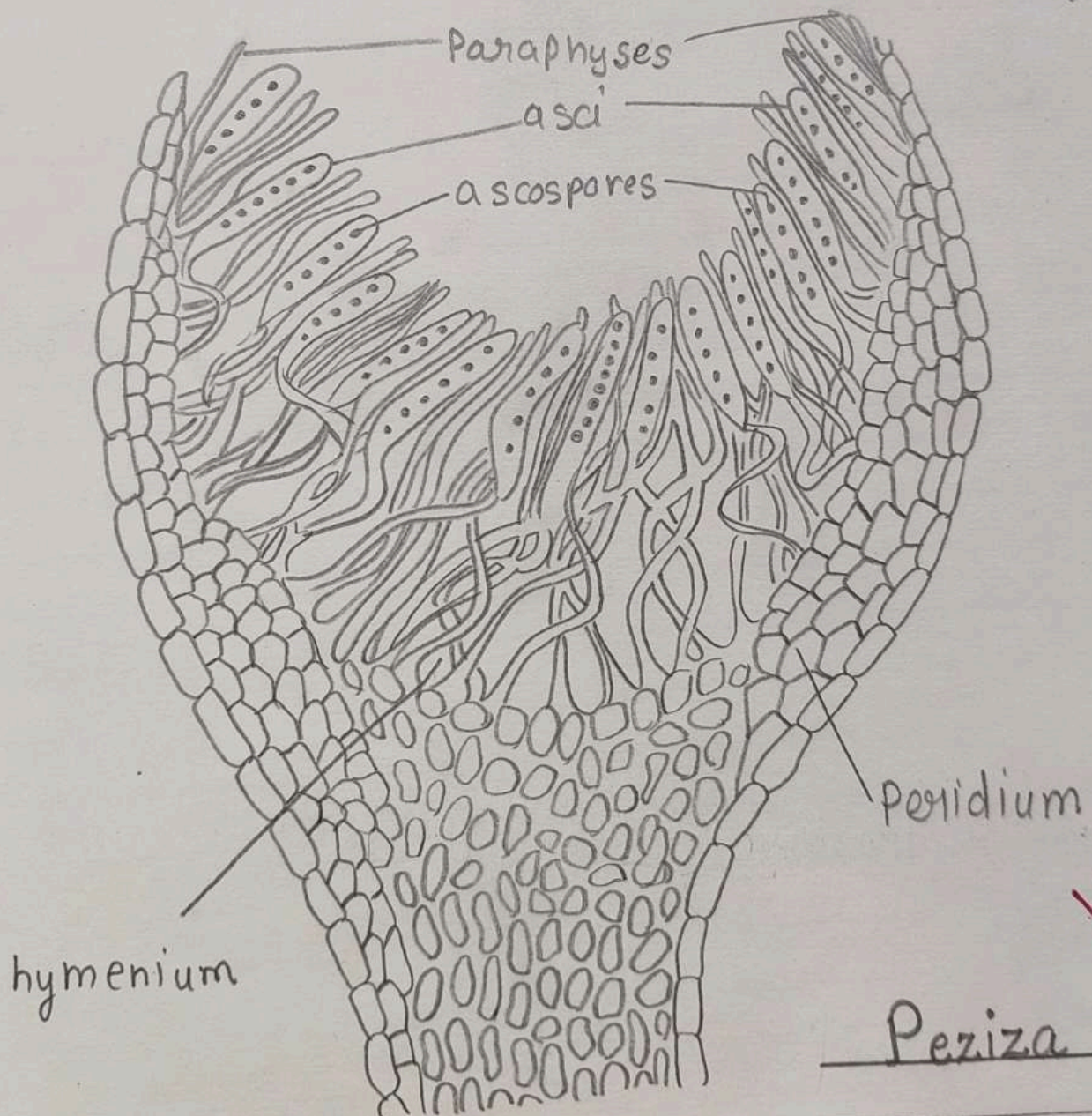
Cell of mycelium are uninucleate except the fruitification.

Hyphae cell absorbs food materials from substratum.

The mycelium forms fruiting body known as Apothecia.

Classification

Division = Mycota
Sub-division = Eumycota
Class = Ascomycetes
Order = Pezizales
Family = Pezizaceae
Genus = *Peziza*



Peziza

by
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Agaricus (Mushroom)

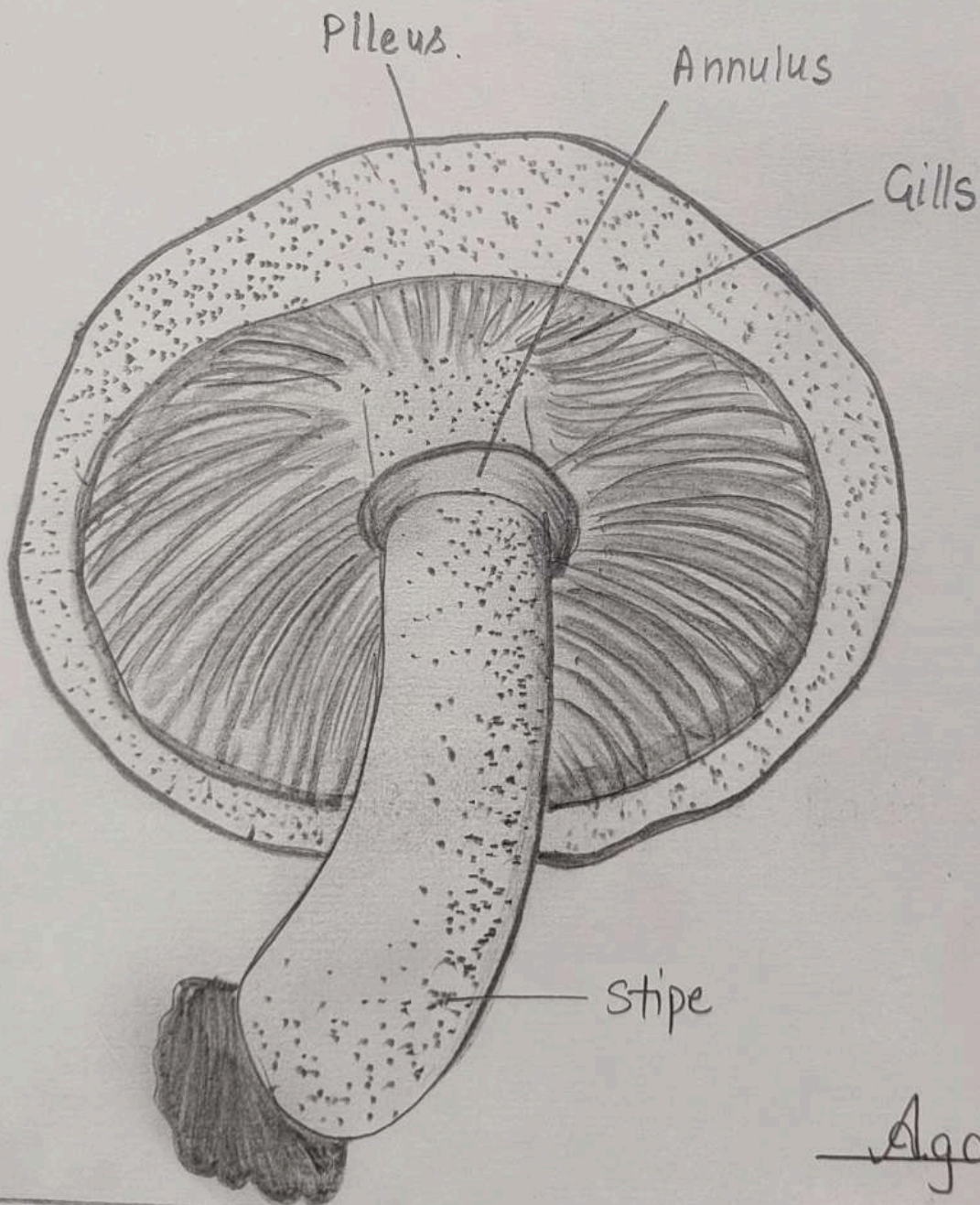
- Agaricus commonly called mushroom (Vern. Kukurmutta, saarp ki chhatri) is common in humus soil.
- It is important to note that beautifully coloured mushrooms are often poisonous.
- Preparation of Slide:- For vegetative structure, growth on decaying matter is taken, stain in cotton blue and is mounted in lactophenol.

To study of button stage, L.S. of small mushrooms is cut and slide prepared as for hyphae.

To study basidiocarp etc. Pitens is plucked and the slide is prepared after section to study basidia and basidiophores.

Classification

Kingdom = Mycota
Division = Eumycota
Class = Hymenomycetes
Order = Agaricales
Family = Agaricaceae
Genus = Agaricus



Agaricus

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5/10/22

Lichens - a Dual Organism

- Lichen is an individual entity. But it is a combination of two different groups of members. One belonging to algae and other belonging to fungi.
- It is thus a dual organism. Algal component is known as phycobiont and the fungal component is known as mycobiont.
- The study of lichens forms a separate branch of botany called 'Lichenology'.
- Some common lichens are *Cladonia*, *Coccifer* and *Caropavenia* etc. 400 genera and 15000 species of lichens are known.
- Due to dual nature, systematic position of lichens has been a controversial point.
- Bessey (1950) has placed them in order Lichenorales of Ascomycetes.



Lecidia platycarpa - Fruiting Bodies

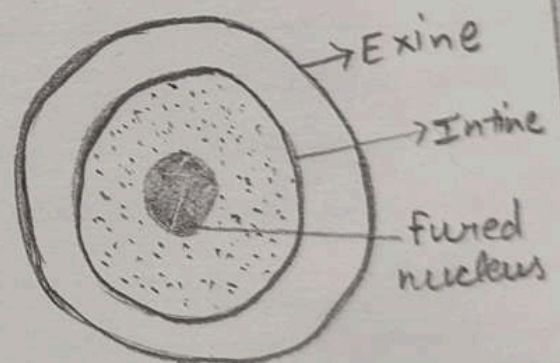
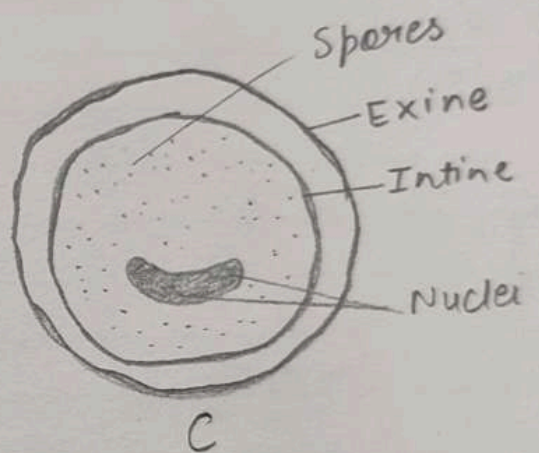
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Loose Smut of Wheat

- This disease is very common and wide spread. It causes great damage to wheat in India. This disease is world wide in occurrence and occurs in India. Almost all producing states like Punjab, U.P., M.P. This disease is caused by *Ustilaga nuda* var *tritici* (Subdivision - Basidiomycetes, class - *Teliomycetes* Order - *Ustilaginales*, Family - *Ustilaginaceae*.)
- The pathogen is seed borne. The disease appears only when the plants are in early from stage. The diseased ears come out before the healthy ears.
- External appearance and growth of plants is not much affected.
- The causal organism of this disease *Ustilaga nuda* var *tritici* and host plant is *Triticum aestivum*. The mature smut spore is diploid and called as Teliospore or Chlamydespores.
- Resistant varieties should be used to control the disease.

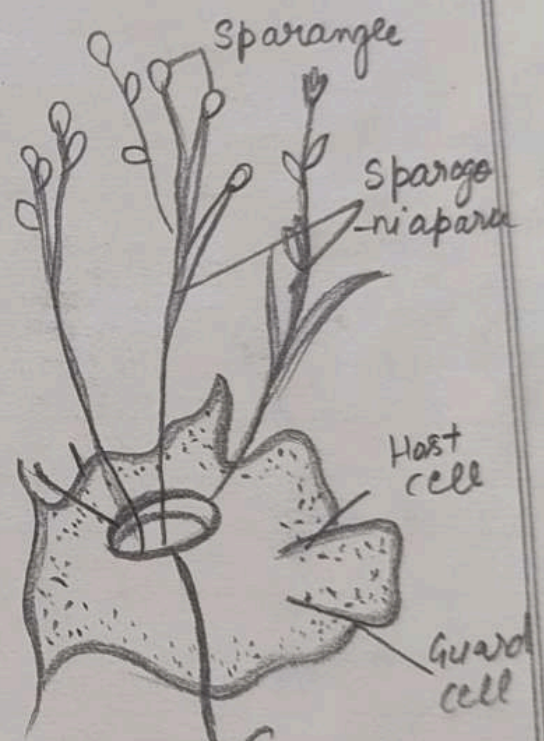
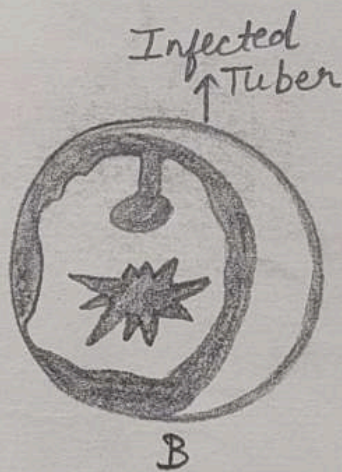
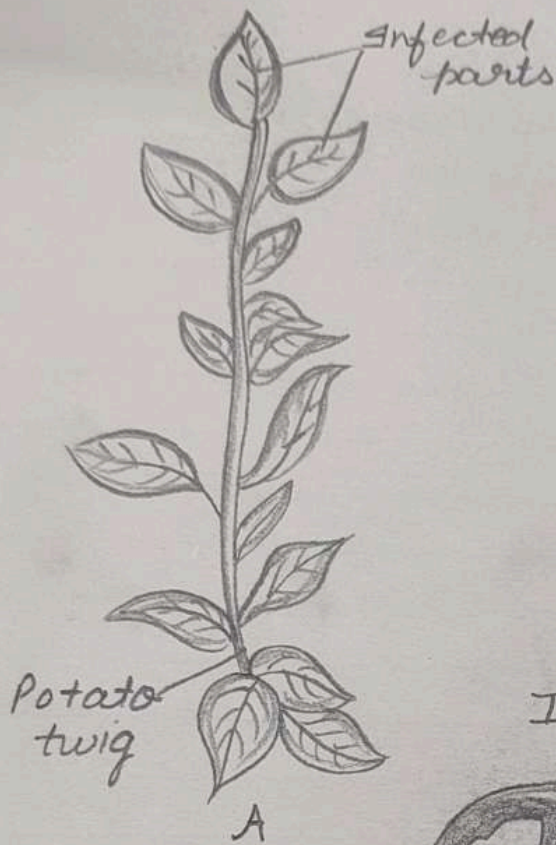


Affected ears of wheat



A - B smutted inflorescences : CA single ^D chlamydasporangium
 D, chlamydasporangium with fused nuclei.

Handwritten signature



- A - Blighted twig of potato infected by phytophthora
- B - An infected tuber and
- C - Sporangia emerging through of stoma.

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Late Blight of Potato

- Late blight is a serious fungal disease. It appears on potato (*Solanum Tuberosum*) late in the season and caused by *Phytophthora* infection.

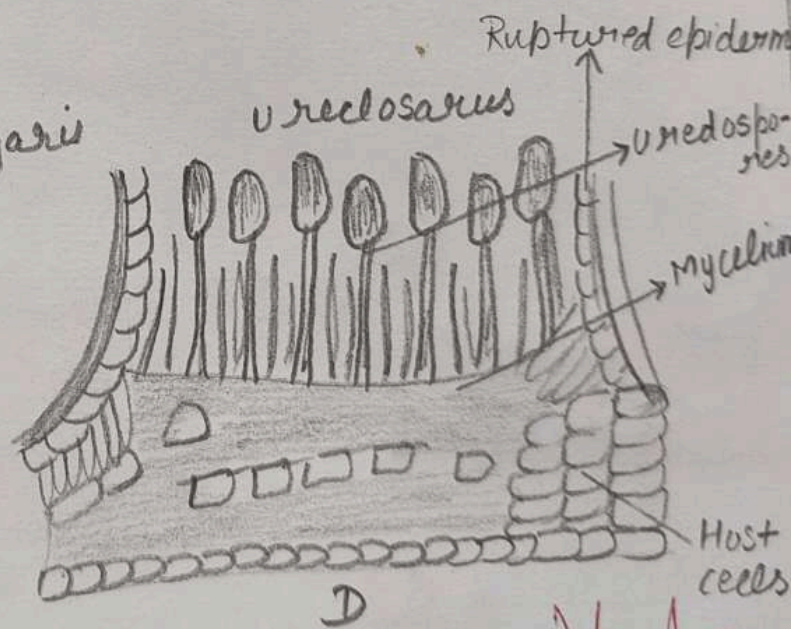
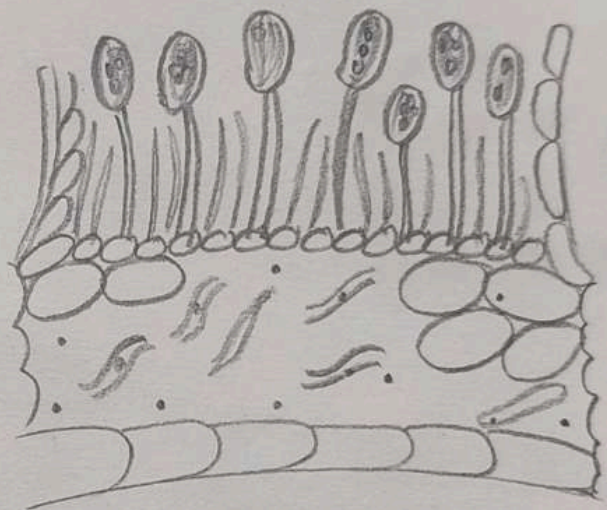
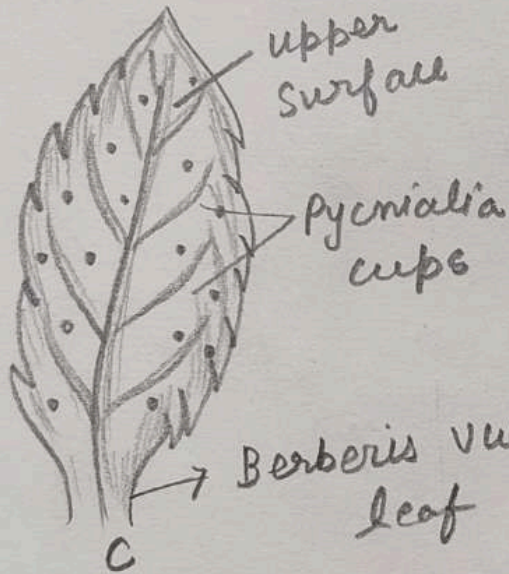
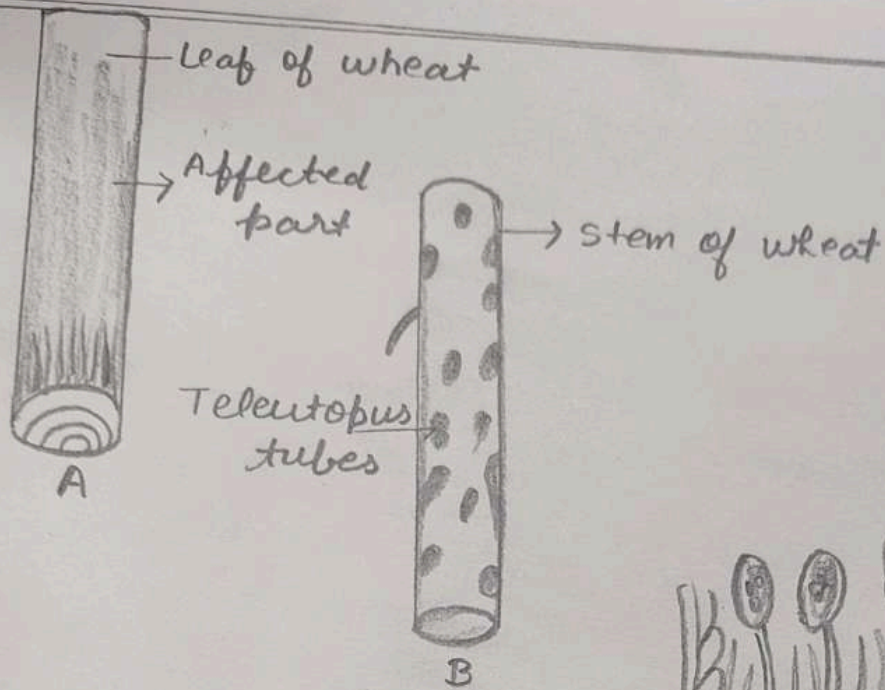
Pathogen *Phytophthora* infectants infected the potato crop and damaged it on large scale in 1993.

The disease symptoms of late blight of potato as water soaked light brown lesions of the leaf blade. Lesions mainly present on margins or on up leaf lats.

Pathogen 1st attack tubers in form of dry and brown discoloration of their tissues. Whole tubers becomes brown and eventually get rotten.

Disease free tubers used for sowing. Pre-sowing treatment of the tubers with 1% solution Bordeaux mixture or other fungicides.

The late blight resistant varieties seed should be used.



May

Black Rust or Stem Rust of Wheat

- This is a serious fungal disease on wheat (*Triticum aestivum*). This disease is also known as stem rust of wheat.
- The pustules of uredia contain several uredia. The uredia enlarge in size and merge to each other.

The uredospores rupture the host epidermis. Several uredospores look on outside of epidermis.

The growth of plants becomes stunted due to this disease.

This is a heterocious and macrocyclic fungi. The mycelium of this fungi is intercellular with small holes.

The complete eradication of diseased plants and proper sanitation of crop.

Vein Clearing of Bhindi

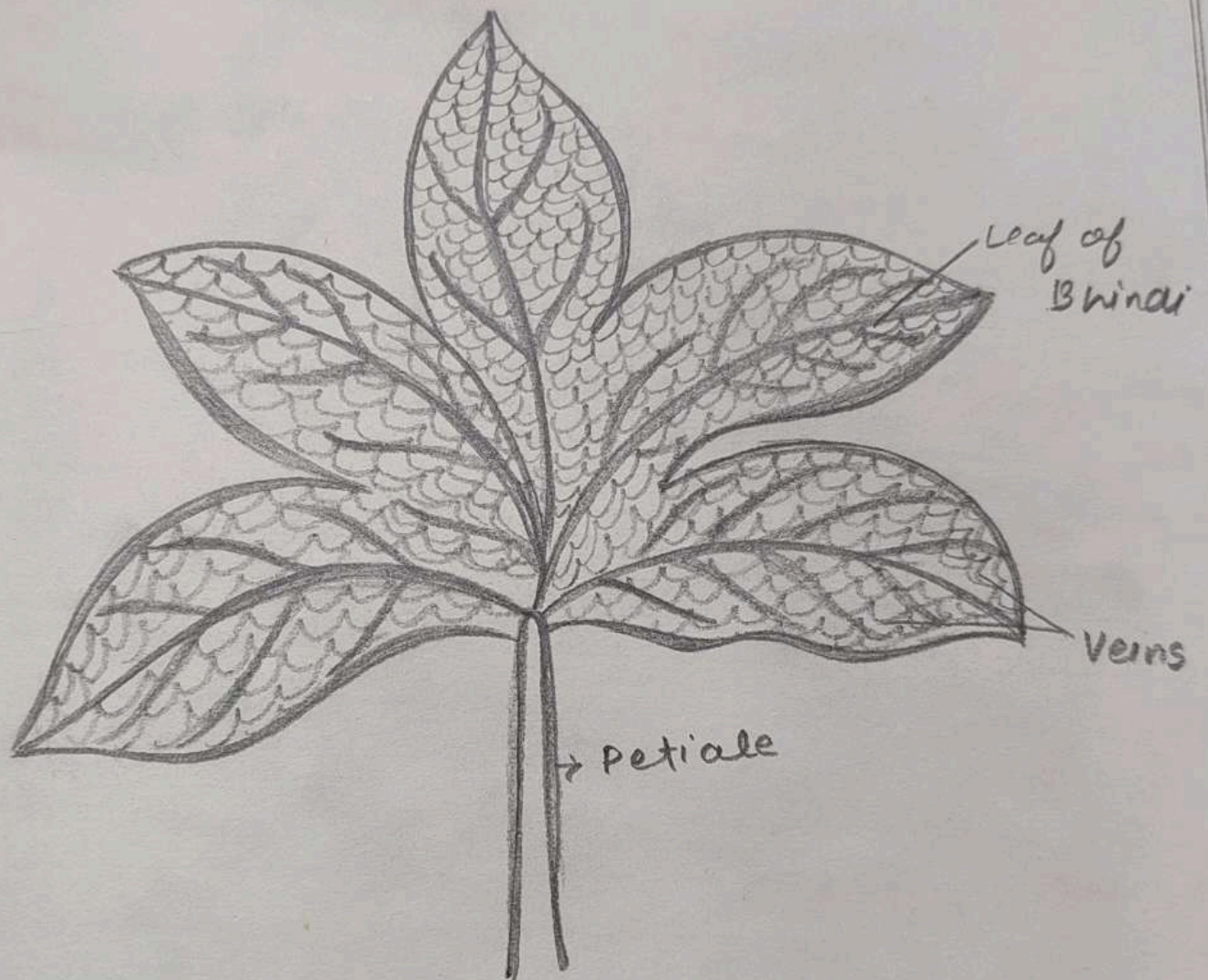
- Vein clearing of Bhindi is a viral disease caused by Monopartite Begomovirus affecting Okra plant, it was first reported in India and Sri Lanka.
- This disease is transmitted by White fly (Bemisia tabaci) and Okra leaf miner (Empoasca devastans).
- The main symptom is vein clearing. The network of veins becomes very specific. The next symptom is chlorosis.

Fruits are dwarfed, malformed and are yellow in colour due to infections.

The causal organism of this viral disease is Hibiscus virus 1 or yellow vein mosaic virus.

At present no definite control measures are known. Pusa swarni variety is reported to be tolerant.

The weed host of virus should be eradicated.



Vein - clearing of Bhindi

Vijay

Citrus Canker

- Citrus canker is a bacterial disease of citrus plants. All types of citrus like, Citrus aurantiifolius (lime), C. medica (citron) and others many are affected by this disease.
- This disease occurs in citrus growing region India, China, Japan, Indonesia, USA and Bangladesh.

The prior symptoms are seen on the lower surface of leaves. The spots are translucent round and watery.

At fungal stage, these spots ruptures from center and become corky, rough and bowl like.

In severe infections, the plant may leafless, become stunting and fruit yield is decreased.

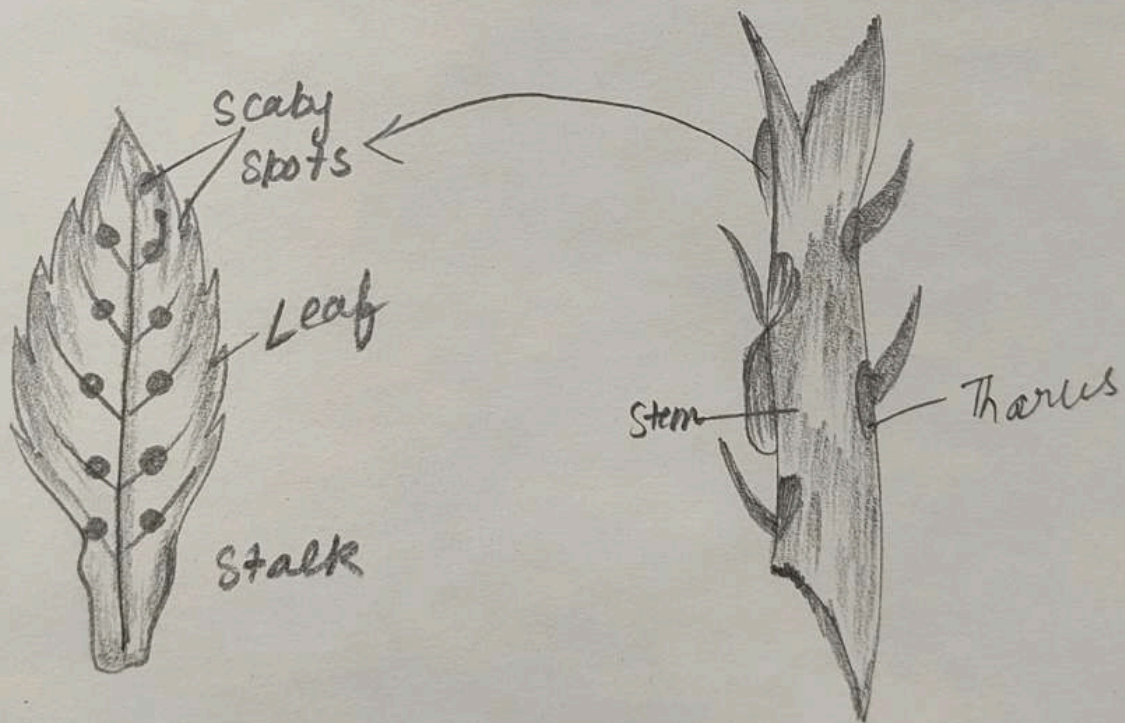
The causal organism *Xanthomonas Citri*.

Disease resistance varieties should be used.

Complete eradication of disease plants.



Fruit of citrus



Citrus canker caused by Xanthomonas