



## PARENCHYMA

- ❖ Roughly spherical
- ❖ Elongated
- ❖ Un specialized
- ❖ Living cells
- ❖ Act as packing tissues in pith and cortex
- ❖ Found among xylem vessels
  - Xylem parenchyma
  - Phloem parenchyma
- ❖ When turgid become tightly packed thus providing support.
- ❖ Mainly important in stems.
- ❖ Has airspaces bwn cells thus allow gaseous exchange.

### SUMMARY OF FUNCTIONS OF PARENCHYMA

- ✓ Packing tissue
- ✓ Support
- ✓ Metabolism
- ✓ Gaseous exchange
- ✓ Food storage
- ✓ Transport.

## MODIFIED PARENCHYMA

### **INCLUDES**

- EPIDERMIS
- ENDODERMIS
- PERICYCLE
- MESOPHYLL

### **1.EPIDERMIS/EPIDERMAL CELLS.**

- ❖ Colourless except guard cells
- ❖ Covers the whole primary plant body
- ❖ Secrete a waxy substance(cutin)
- ❖ Cutin forms cuticle
- ❖ Cuticle reduces water loss by evaporation
- ❖ Cuticle prevents entry of pathogens
- ❖ For dicotys(epidermal cells are irregularly arranged)
- ❖ For monocots(epidermal cells are regular and rectangular)
- ❖ Made of cellulose,hemicellulose,pectin and cutin.
- ❖ Living

## **SPECIALISED EPIDERMAL CELLS**

### **GUARD CELLS**

- ❖ Occur in pairs (side by side)
- ❖ Stoma between them.
- ❖ Have chloroplast.
- ❖ Have elastic layers

### ❖ **2.ENDODERMIS.**

Made of  
cellulose, hemicellulose, pectin, suberin

- ❖ Elongated
- ❖ Flattened
- ❖ Inner most layers of cortex
- ❖ In roots, each cell develop a casparian strip with suberin around the cell.
- ❖ In dicotys, it's a layer of vascular bundles.
- ❖ Store starch grains forming starch sheath.
- ❖ Makes the endodermis geotropically responsive.

### 3.PERICYCLE.

- ❖ Living
- ❖ Made of cellulose,pectin and hemicellulose.
- ❖ Isodiametric
- ❖ Elongated
- ❖ Mainly in roots between endodermis and vascular tissues.
- ❖ One cell thick.
- ❖ Produces lateral roots.
- ❖ Contributes in secondary growth.
- ❖ Occurs in meristems.

### 4.MESOPHYLL.

- ❖ Living
- ❖ Made of cellulose,pectin and hemicellulose.
- ❖ Isodiametric.
- ❖ Irregular.
- ❖ Packing tissue(storage).
- ❖ Consist of parenchyma modified for photosynthesis(cholorenchyma).

- ❖ The cytoplasm contain numerous chloroplasts.
- ❖ Two forms in dicots.
  - ✓ Palisade mesophyll.
  - ✓ Spongy mesophyll.

Most photosynthesis occurs here.

Has large air spaces(gaseous exchange).

★ *LOOK FOR COLLENCHYMA AND SCELERENCHYMA*  
*SUMMARIES* 😊

Reach us @academicgiants on telegram.

Call 0759203256 or 0705021884.

Email :surgeongiant@gmail.com.

:nkwangahamudan@gmail.com.