

Roots And Rhizomes - Evaluate

Starch Grains

Occurrence

☐ Few☐ Abundant☐ Isolated☐ Group

Shape

☐ Simple☐ Spherical☐ Compound☐ Oval☐ Polyhedral☐ Flattened☐ Sub-rectangular☐ Sub-reniform

Type of hilum

☐ N/A☐ Radiate☐ Slit☐ Circular☐ Stellate☐ Faint☐ Rounded☐ Cleft☐ Eccentric☐ Irregular stellate☐ Pointed☐ Crescent☐ Simple☐ Radiate split☐ Linear

Striations

☐ N/A☐ Transverse striation☐ Concentric striations

Sclereids

Occurrence

☐ N/A☐ Few☐ Abundant☐ Isolated☐ Group

Wall

☐ Thin walled☐ Thick walled☐ Unevenly thickened☐ Striated☐ Lignified☐ Non-lignified☐ Pitted☐ Branched pits☐ Bordered pits☐ Oblique pits

Shape

☐ Oval☐ Square☐ Rectangular☐ Sub-rectangular☐ Isodiametric☐ Irregular☐ Elongated☐ Polygonal

Lumen

☐ Large☐ Narrow☐ Pitted☐ Branched☐ Occluded

Fibres

Occurrence

☐ N/A☐ Few☐ Abundant☐ Isolated☐ Group

Wall

☐ Thin☐ Thick☐ Unevenly thickened☐ Lignified☐ Non-lignified☐ Septate☐ Faint transverse septa☐ Dentate☐ Rounded pits☐ Bordered pits☐ Slit

Shape

☐ Ovoid☐ Rounded☐ Rectangular☐ Irregular☐ Bluntly pointed

Lumen

☐ Small☐ Discontinuous☐ Varying width

Calcium oxalate crystals

☐ N/A☐ Prism☐ Twin prisms☐ Prism crystal sheath☐ Cluster☐ Acicular

Vessels

Occurrence

☐ Few☐ Abundant☐ Isolated☐ Group

Wall

☐ Thin☐ Thick☐ Broken☐ Fragmented☐ Swollen☐ Uneven☐ Lignified☐ Non lignified☐ Septate☐ Oblique end☐ Oval perforation☐ Slit pits☐ Bordered pits☐ Rectangular pits☐ Rounded pits☐ Oval pits

Lumen

☐ Narrow☐ Wide

Shape

☐ Annular☐ Spiral☐ Reticulate☐ Elongated☐ Scalariform

Tracheids

- | | | | |
|-------------------------------------|--------------------------------------|-----------------------------------|---------------------------------|
| ☐ Narrow | ☐ Square | ☐ Bordered | ☐ Pitted |
| ☐ Reticulate | ☐ Thin walled | | |

Parenchyma

Occurrence

- | | |
|-----------------------------------|---------------------------------|
| ☐ Abundant | ☐ Groups |
|-----------------------------------|---------------------------------|

Wall

- | | | | |
|---|------------------------------------|--|-----------------------------------|
| ☐ Thin | ☐ Thick | ☐ Uneven | ☐ Wrinkled |
| ☐ Irregular swelling | ☐ Lignified | ☐ Non lignified | ☐ Pitted |
| ☐ Rounded pits | ☐ Slit pits | | |

Lumen filled with

- | | | | |
|--------------------------------------|--|--|---|
| ☐ Air space | ☐ Starch grains | ☐ Resins | ☐ Calcium oxalate crystals |
| ☐ Oleo-resins | ☐ Oil globules | ☐ Brownish secretions | ☐ Mucilage |

Shape

- | | | | |
|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|
| ☐ Oval | ☐ Rounded | ☐ Elongated | ☐ Rectangular |
| ☐ Irregular | ☐ Polygonal | | |

Cork

- | | | | |
|------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|
| ☐ N/A | ☐ Thin walled | ☐ Thick walled | ☐ Isodiametric |
| ☐ Irregular | ☐ Elongated | ☐ Polygonal | ☐ Sinuous |
| ☐ Lignified | | | |

Medullary rays

- | | | |
|-------------------------------------|---|--|
| ☐ Uniseriate | ☐ Tangentially-cut | ☐ Radial longitudinal |
|-------------------------------------|---|--|

Masses

- | | | | |
|--|---|---|---|
| ☐ Orangish brown granular matter | ☐ Spherical masses of resins | ☐ Reddish brown pigments | ☐ Brown granular matter (piliferous layer) |
| ☐ Yellow coloured matter (gelatinised starch) | ☐ Angular masses of insulin | | |

Special features

Lactiferous tubules

- | | | |
|------------------------------|---------------------------------|------------------------------------|
| ☐ N/A | ☐ Groups | ☐ Elongated |
|------------------------------|---------------------------------|------------------------------------|

☐ Thin walled

☐ Thick walled

☐ Elongated

Sporangia

☐ Greenish brown

☐ Irregular reticulations

Stomata

☐ Anomocytic

Trichomes

☐ Covering

Piliferous layer

☐ Thin walled

☐ Unicellular

☐ Cicatrices

Tegumentary tissue

☐ Thick

☐ Lignified

☐ Granular contents

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