DAVID DANNAH 17

SEEDING MORPHOLOGY

Seed and Embryo

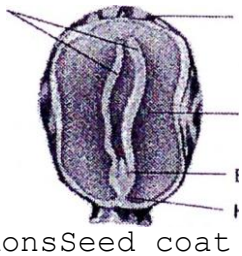
The seed IS a complex structure com posed of an embryo, seed coat and a supply of stored food. The most important of them is the embryo. It JS a miniature plant with roots and shoots system which remains quiescent until the seed germinates.

Types of Seeds

a. Endospermous Seed: The endosperm is the nutritive tissue on which the developing embryo feeds. In some seeds including almost all monocots and many dicots, the endosperm persist and serves as food for the embryo after germination, these are endospermous seed. Examples are castor bean, rice etc.

b. Non-endospermous seeds are those in which the nutritive tissue is completely absorb before the seed is ripe. Examples are bean, cucurbita etc.

Embryo is a very young plant and consist of a primary axis with the following component parts root, hypocotyls and stem at this stage it is difficult to differentiate where the root joins the hypocotyls, but above the hypocotyls is the node of the first two leaves i.e. cotyledons referred to as seed leaves and it marks the beginning of the stem.

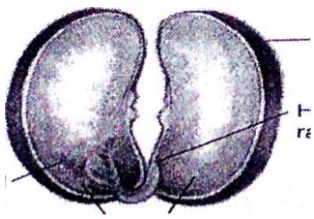


CotyledonsSeed coat

Endosperm

Epicotyl

(a) Castor beanHypocotyl/ radicle axis



Seed coat

Hypocotyl/ radicle axis

Phloem is found between the lobes of xylem. The roots of many monocots and few dicots have a ring of vascular tissue surrounding pith made of parenchyma cells.

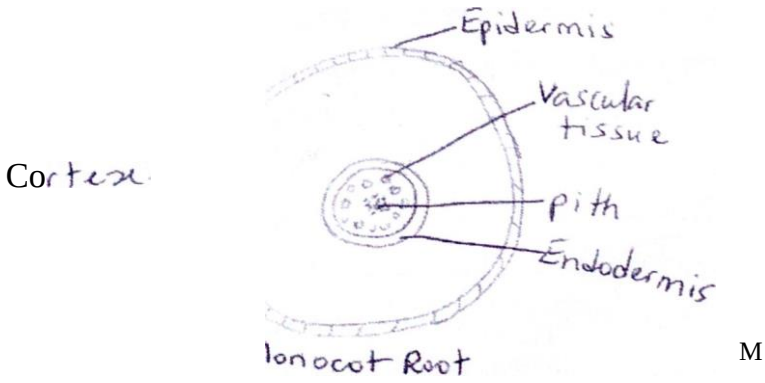


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Fig 8

Note arrangement of vascular bundles in root as compared to the stem.

Note the arrangement of xylem to the phloem (i.e. altcrnate arrangement instead of all being on the same radius)

TYPES OF ROOTS

The primary root and its branches form the tap root system of the plant. The primary or tap root normally grows vertically downwards to a shorter or longer depth, while the branched roots (secondary, tertiary, etc.) grow obliquely downwards, or in many cases

spread horizontally outwards. This is common in cone-bearing trees and dicots.

When a primary root is not dominant in its growth and It is superseded by the growth of its branches or fine roots arising out of the lower nodes of its stem, the plant has a fibrous root system as occurs in most monocots (including grasses).