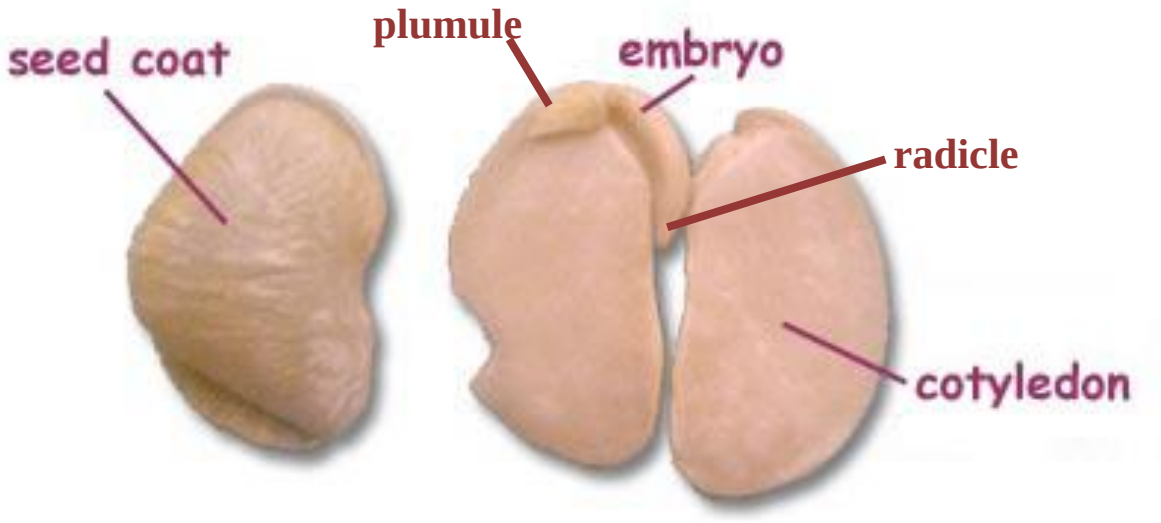
Explant

It is the piece of plant tissue placed on culture media. Potentially all living plant parts can be used as explant. It may be obtained from field-grown plant or plants growing under in vitro conditions. The focus of this section is seed, seedling, stem, root and flower.

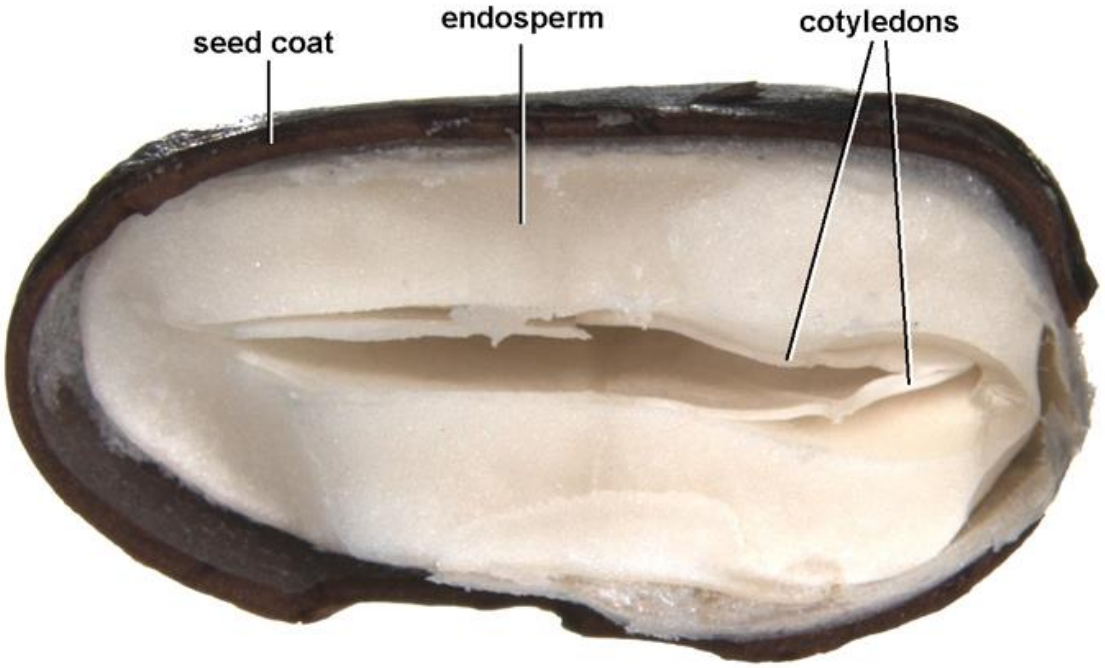
Seeds and Seedlings

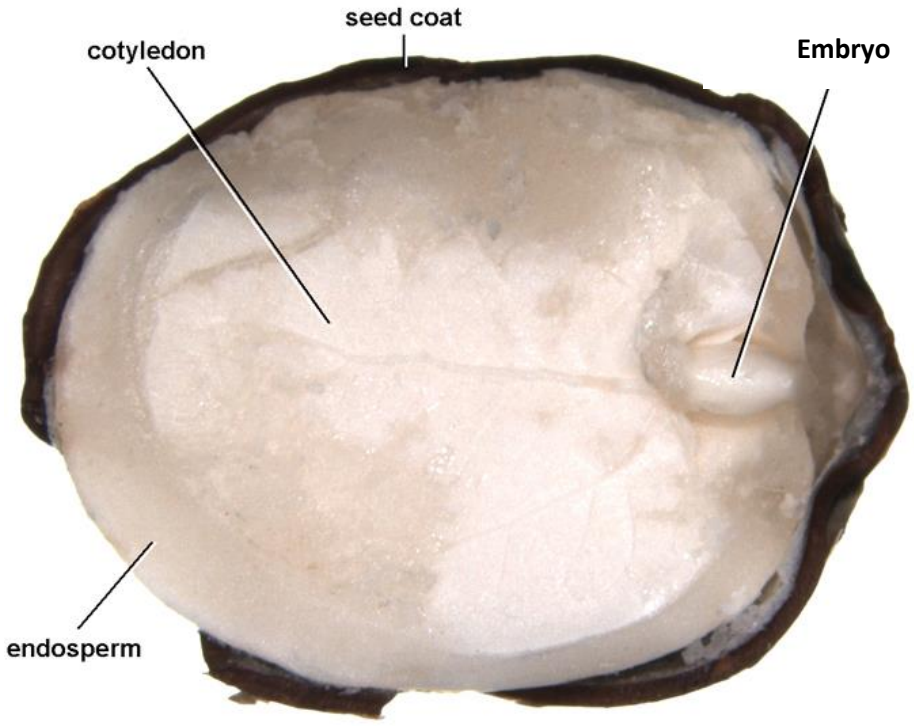
The mature seed consists of seed coat surrounding embryo and storage tissue.

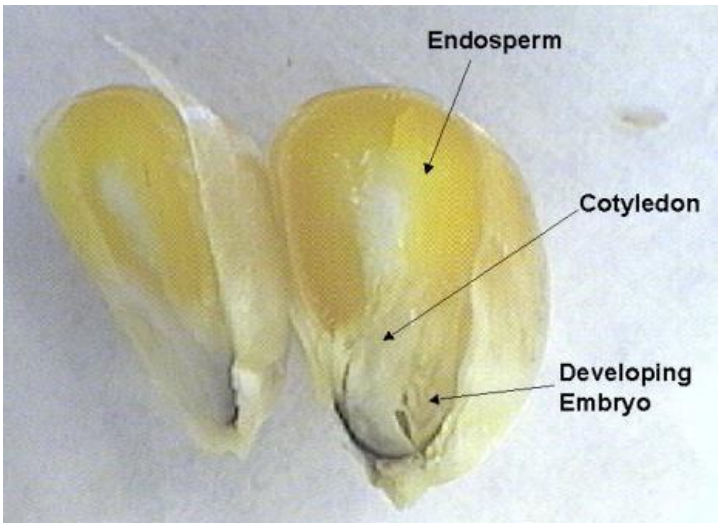
The embryo: Elongated portion called embryo axis. It consists of a short axis at the upper end of which is the plumule and at the other end is the radicle. One (in monocots) or two (in dicots) cotyledons are attached to the embryo axis by very fine and short cotyledonary stalks.

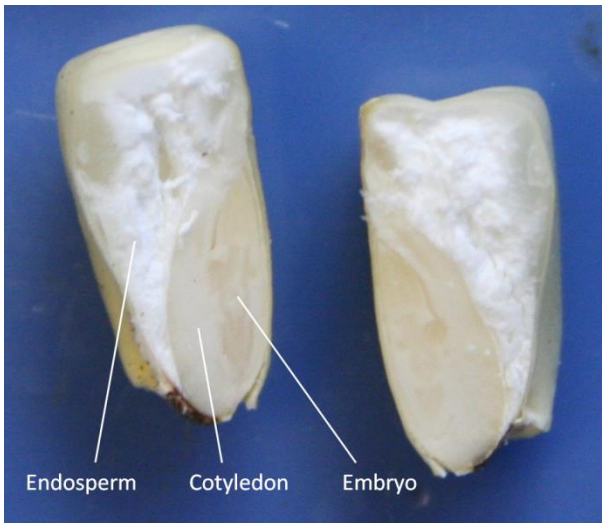


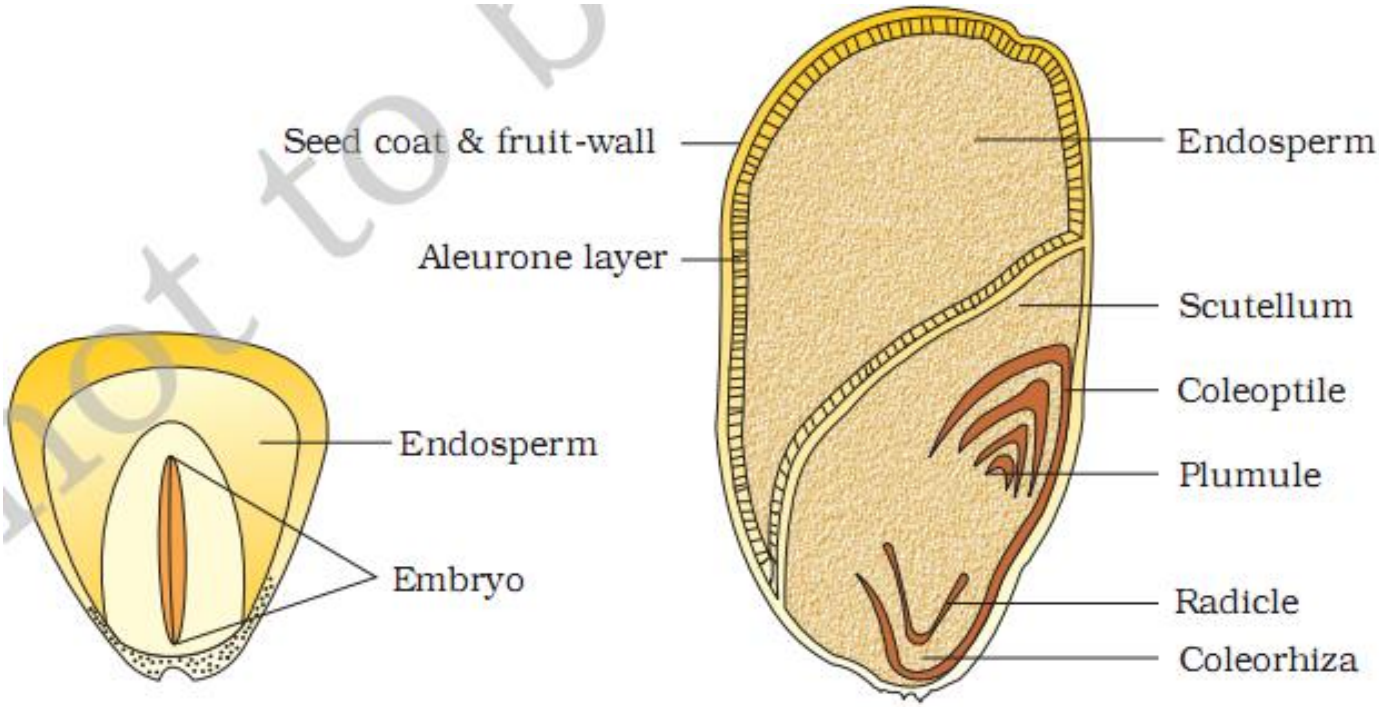
The storage tissue (endosperm): It contains the food reserve that support embryo during germination. Seeds having endosperm are called endospermic seeds while those lacking endosperm are called exendospermic seeds and the food reserve is stored in cotyledons.



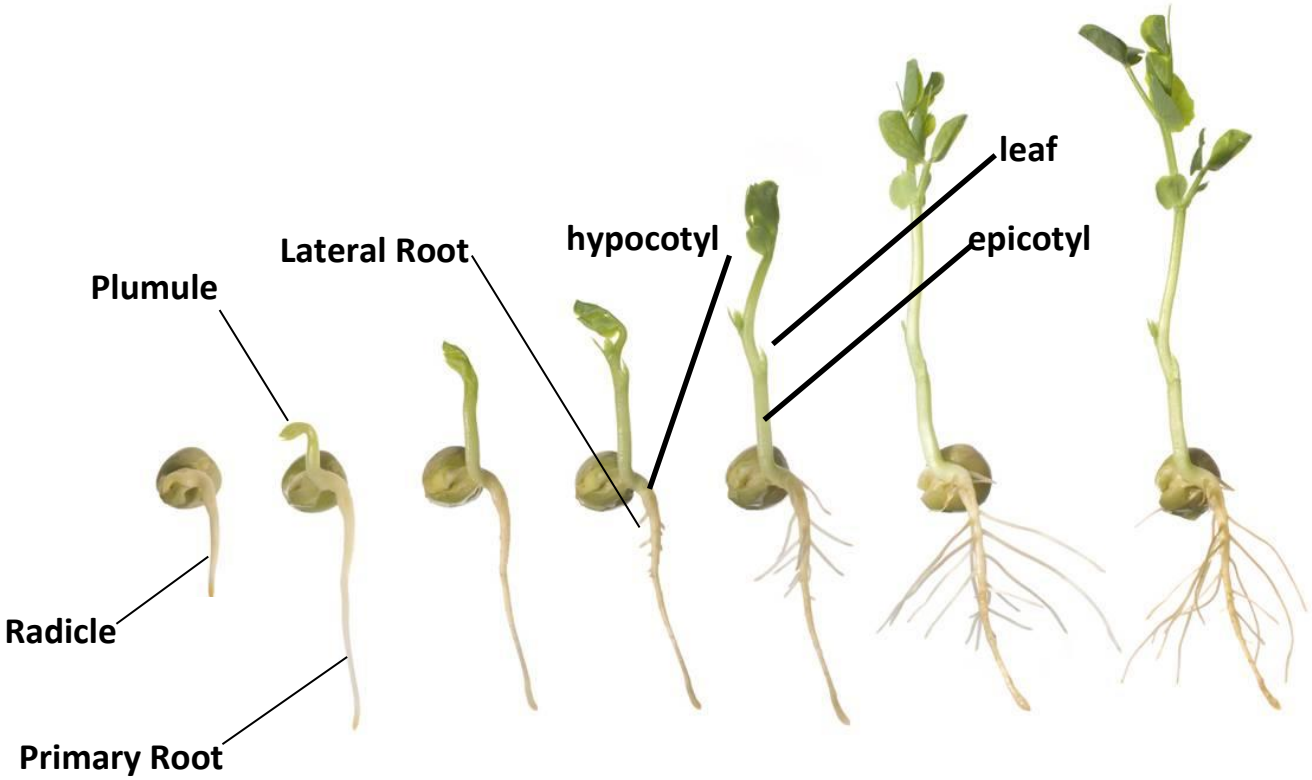


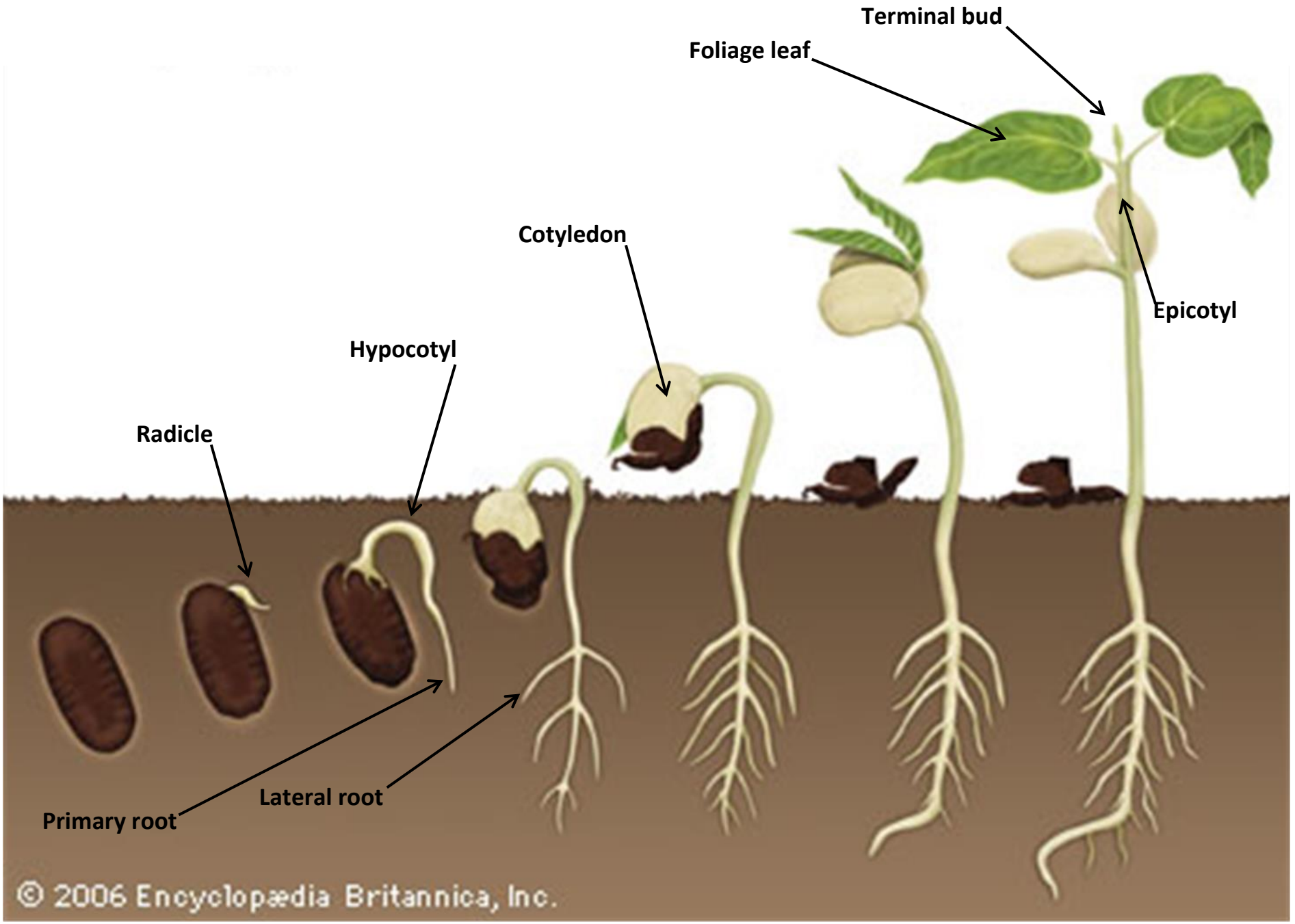

Endosperm
Cotyledon
Developing
Embryo


Endosperm
Cotyledon
Embryo


Seed coat & fruit-wall
Aleurone layer
Endosperm
Embryo
Endosperm
Scutellum
Coleoptile
Plumule
Radicle
Coleorhiza

Seedling is the young plant from the time its radicle emerges out of the seed coat to the time it becomes independent in its nutrition.




Terminal bud
Foliage leaf
Cotyledon
Epicotyl
Hypocotyl
Radicle
Primary root
Lateral root
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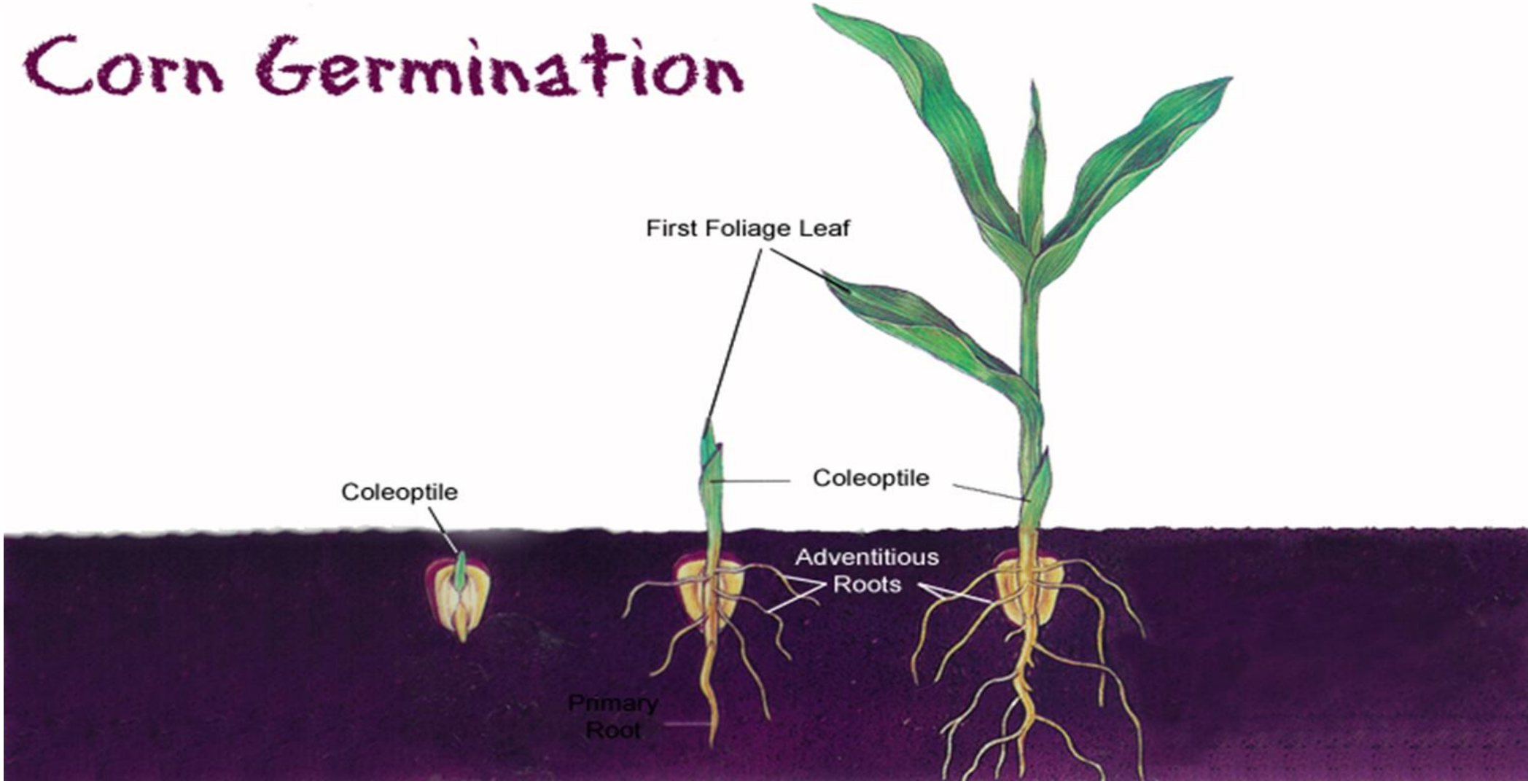
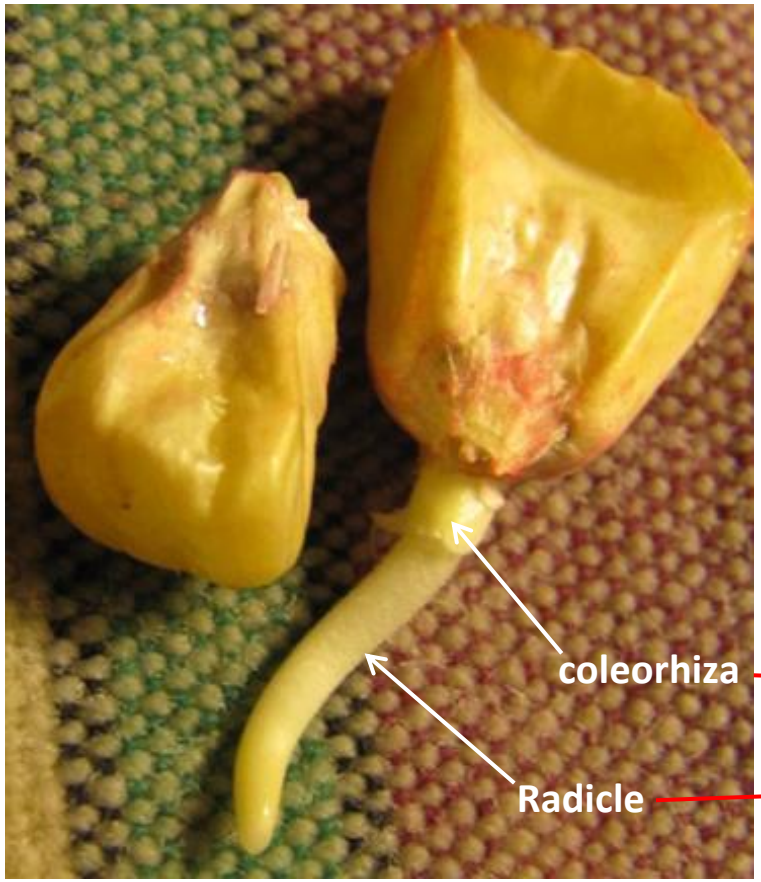
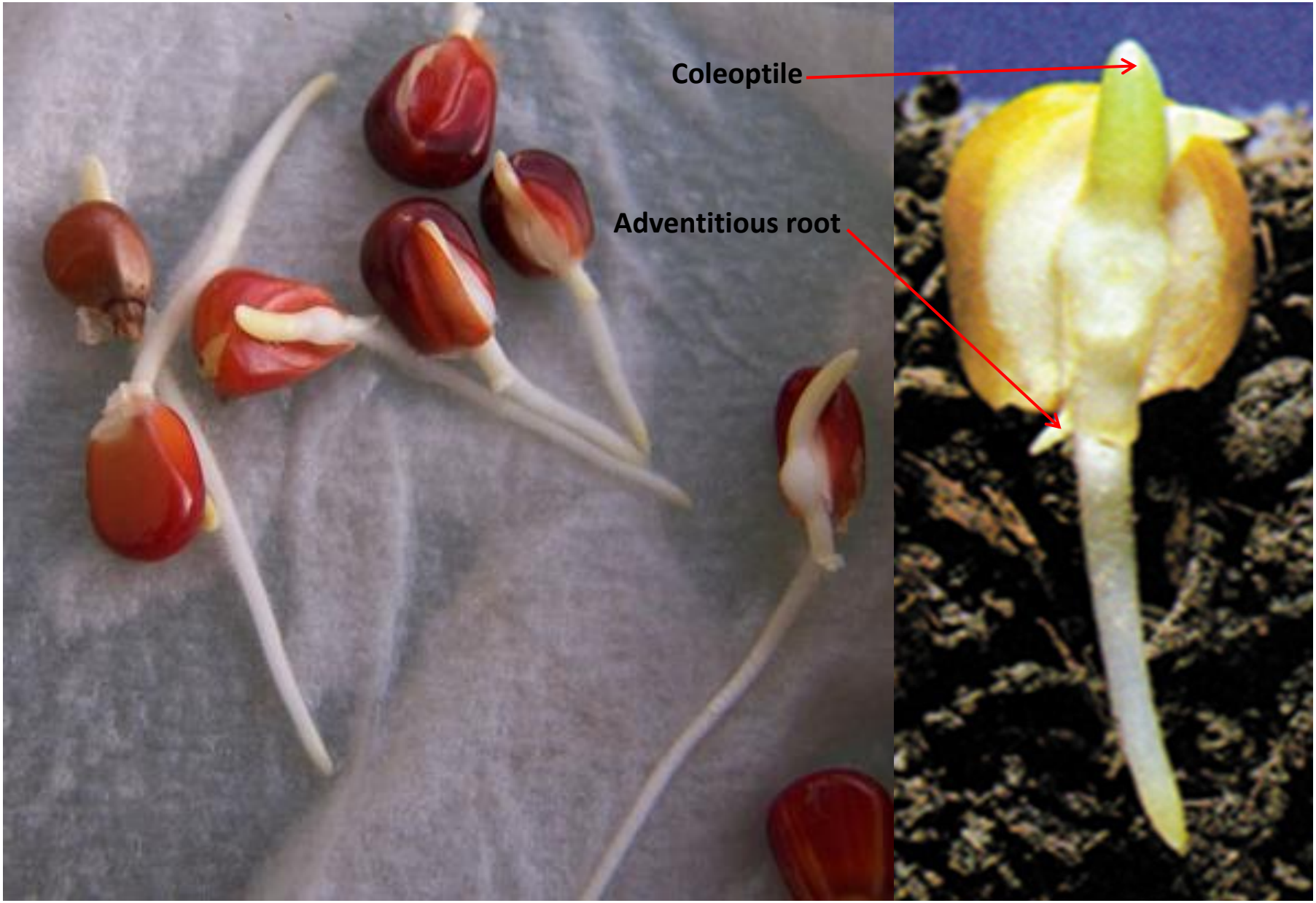
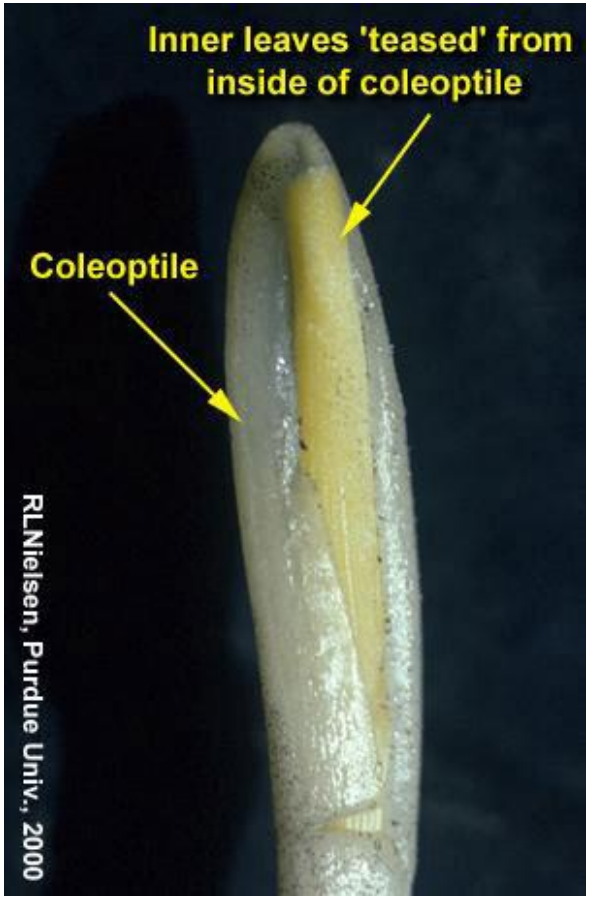
Corn Germination




coleorhiza
Radicle


Coleoptile
Adventitious root


Inner leaves 'teased' from inside of coleoptile
Coleoptile
RLNielsen, Purdue Univ., 2000


Foliage leaf
INCHES
PICAS
L624-M