**Plant Hormones:**

1. Growth promoters: auxin, cytokinins, gibberellins (GA)
2. Growth inhibitors: abscisic acid (ABA), ethylene
3. Initiates seed dormancy- ABA
4. Breaks dormancy—GA
5. Ripening—ethylene
6. Prevents aging—cytokinin

GA promotes stem lengthening (bolting)

Low GA production or perception leads to dwarfism

**Terminology**

1. Explant—excised part of plant used to initiate tissue culture
2. Callus—mass of undifferentiated cells
3. Organogenesis—formation of shooty structures that can develop into plantlets
4. Somatic embryogenesis—formation of embryos in tissue culture that can germinate into plantlets
5. Chimera—regenerated plants derived from more than one cell types

**Plant tissue culture media contains the following:**

1. Macronutrients: such as MgSO4, KH2PO4, KNO3, CaCl2, ammonium sulfate etc.
2. Micronutrients: such as H3BO3, MnSO4, ZnSO4, CoCl2, FeSO4 etc.
3. Sugar source: sucrose
4. Vitamins—Thiamin HCl, Pyrodoxin HCl, Nicotinic acid
5. Other- glycine, prolamin, myoinositol, folic acid, biotin etc.
6. Phytohormones: auxins and/or cytokinins
7. pH: 5.5 – 5.8
8. Agar (if media is to be solidified).

**Technique:**

All media are autoclaved or filter-sterized.

The explants are derived from surface-sterlized tissue or aseptically growing plants

Tissue culture plating and transfers are done in clean hood (laminar hood).