# LECTURE NOTE
# ON
# MICROPROPAGATION OF TREE SPECIES

**BY**

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# MICROPROPAGATION

- This consists of utilizing the technique and plant cell, tissue and organ culture.
- A small piece of excised tissue from –plant part is grown in nutrient media under controlled aseptic microbe free condition in glass containers (test tube , flask, jars)
- The tissue soon grows and forms an unorganized mass of cells called callus.
- This callus can be maintained in definitely by again transplanting it into new aliquot of nutrient media

- Under proper condition new plantlets can be formed which can be transplanted it into pots containing FYM for maturity .

- In practice, the term micro propagation , tissue culture and in vitro culture are used interchangeably.

# DEFINITION AND HISTORY

- Tissue culture is a technique of growing isolated plants tissues or cells in proper nutrient medium , in glass containers .
- The tissues of almost all plants required some definite growth condition(temp ,light ,nutrients vitamins ,hormones etc)
- Early discovery about this technique were made by G.Haberlandt (1902), white (1932)and later by skoog and miller (1963) steward (1964) maheswari (1966)

# OBJECTIVES

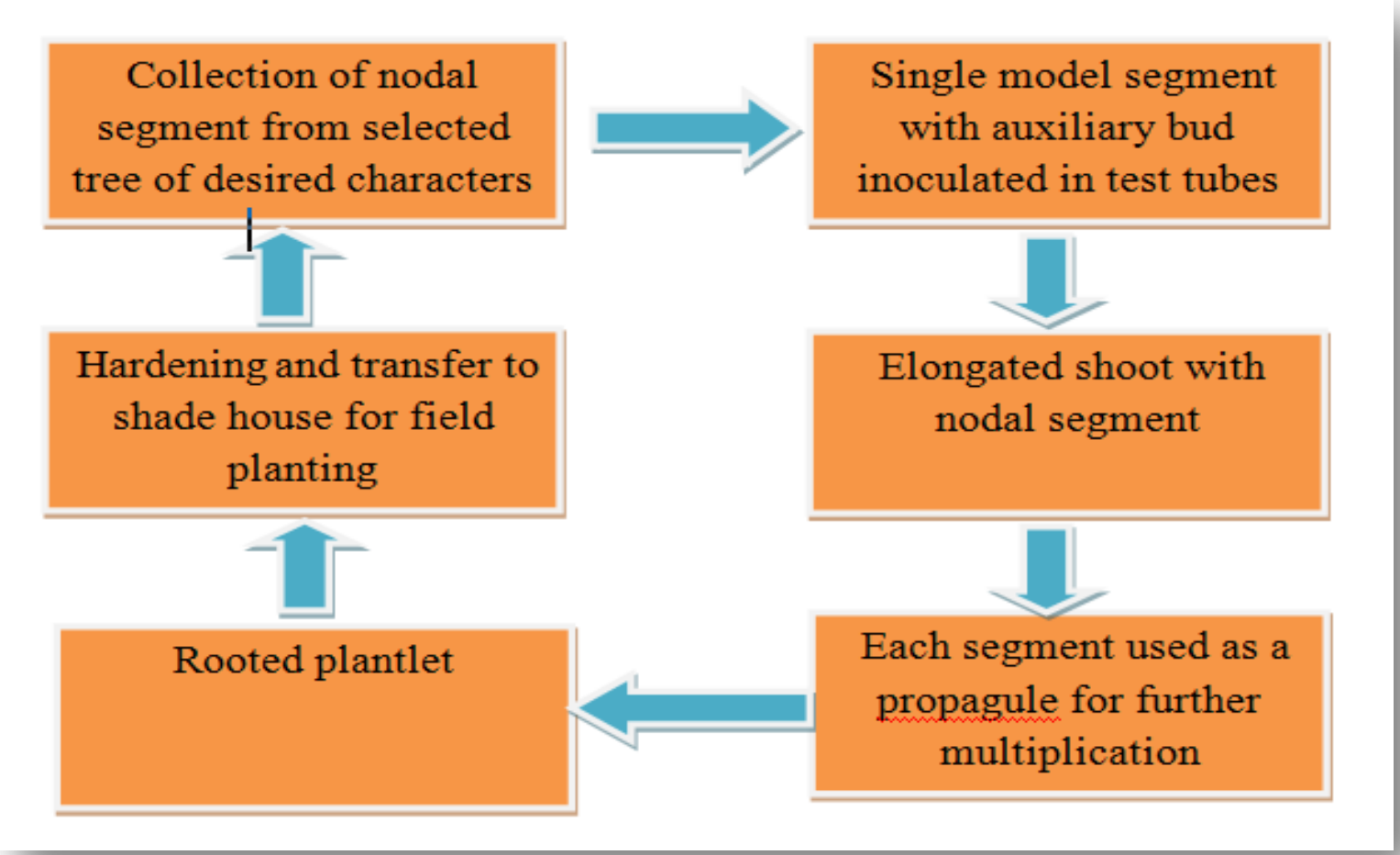
- Multiplication of those species which are rare Endangered and economically important
- Species which are difficult to grow by vegetative means or having low viability (conventional method).
- Species having very low germination.
- Shoot tip culture to raise virus free plants.
- Species which have long seeding cycles viz bamboo can be multiply by using tissue culture technique.

# Methodology

Micro propagation involves the following steps.

- Selection of plant material
- Washing of plant material
- Media preparation
- Sterilization
- Inoculation
- Culture room
- Transfer of plantlets from test tube flask to pot
- Hardening
- Field trial

# Steps involved in micropropagation



# ADVANTAGES OF MICROPROPAGATION

**The basic advantages of micro propagation in forestry are-**

- To capture and multiply unique genotypes without the problem of variation , which is inherent in the sexually propagated material.
- To produce the crop that is uniform and predictable which is not possible through seedlings.
- Large number of plants can be produced from a single piece of plant part
- Rapid multiplication of desirable and rare plants can be done.

- Large number of haploid and homozygous plants can be developed.
- In-vitro multiplication can be continued through out the year irrespective of season.
- Disease/ Virus free plants can be produced through tissue culture.