

# Plant micropropagation

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**LEARNING OUTCOMES:** The course aims to provide information on the vegetative reproduction methods of plants. In detail: knowledge of micropropagation techniques of plant cells; study of biomass and their products; analysis of economic, ecological, pharmaceutical and food potentials of *in vitro* plant cultures.

**COURSE PROGRAM:** Concept of micropropagation, plant totipotency, *in vitro* cultures, controlled growth of plant cells, plant hormones, variable parameters of plant cultures, culture media, controlled production of secondary metabolites and plant biomass, liquid and solid cultures, bioreactors, genetic modification, cloning, induced and spontaneous somatic mutations, caulogenesis, callogenesis, rhizogenesis.

Generally, the course is organized as follows:

1. Theoretical lesson "*In vitro* plant cultures".
2. Practical lesson "Preparation of a solid medium for *in vitro* plant cultures".
3. Practical lesson "Organization of aseptic culture" Collection of plant material, sterilization, sampling and cultivation.
4. Practical lesson "Preparation of solid medium with addition of plant growth regulators for *in vitro* plant cultures".
5. Practical lesson "Stabilization and proliferation of crops" Transfer of aseptic plant material, collection and cultivation on soil with plant growth regulators.

**All the lessons will be held in the laboratory of the Botanical Garden of the University of Rome "Tor Vergata", in viale Guido Carli snc, Rome.**