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1Micropropagation is used to multiply or propagate new plants, such as those created by genetic engineering , mutagenesis or improvement genetic . It is also used for micropropagation of disease free plants (such as viruses) or for large numbers of plants that do not spread efficiently.

Overview of methods

In micropropagation, from a fragment (explant) of a selected plant (called mother plant), we obtain a uniform offspring with genetically identical plants, calledclones . The explant most processes used for propagation in vitro are the vegetative buds of the plants. The bottles containing the plants are placed on shelves under artificial light in the growth chamber where the temperature is fixed at values ranging between 21 and 23 Â° C, and controls the amount of daylight hours. For its part, the culture medium comprises a mixture of mineral salts, vitamins and growth regulators, sugar, water and agar. The composition of the medium depends on the plant species and stage of micropropagation.

Phases of the process of micropropagation

Within the micropropagation process can be distinguished several stages:

? 1: Disinfection of the tips of the plant and / or disinfection of seeds

? 2: Introducing the material selected in vitro

? 3: Multiplication of shoots

? 4: Rooting

? 5: Acclimatization

This sequence covers the complete cycle stages of plant multiplication in vitro and can be applied to different plant species.

Preparation of the mother plant

To establish the culture under aseptic conditions should be obtained explants with a nutritional and a degree of proper development. For these explants is advisable to keep the mother plant, ie the donor plant buds for a period that can range from a few weeks or several months in a greenhouse under controlled conditions. In this environment the plant is grown in sanitary conditions and control of nutrition and adequate irrigation to allow vigorous growth and disease free. 2

Disinfection of plant material

After selecting the parent plant will extract fragments from which the explants were obtained. Explants may be buds, pieces of leaf, roots or seeds portions. Before removing the explants will be disinfected fragments parent plant to remove contaminants. The most common contaminants are the fungi and bacteria that live naturally in the environment. Once disinfected plant material must be kept under aseptic conditions. In order to obtain such conditions, working in laminar flow to remove the explants from plant material. These explants were introduced into a culture tube containing

culture medium to control the health and viability, after making the material disinfection with sodium hypochlorite (commercial chlorinated water), pure or diluted over a period of 5 to 15 minutes , followed by 3 to 4 rinses in sterile water.

Introduction of the material in vitro

After surface disinfection, seeds or buds depending on the selected material, are placed in sterile culture medium. In a period of a week or two weeks, begins the process of germination and plant regeneration of new tissues, initiating the cycle of in vitro culture.

The prime objective in the preparation of mother plants for conventional, or macro, propagation is to produce a propagule which will have the potential to grow and develop into a vigorous healthy new plant. The new plant produced will be only as good as the material source used to produce it. The considerations which the propagator must have in mind, during this preparation phase, fall into three broad categories: physiological, nutritional and pathological. These will, to some extent, be inter-dependent, but it is convenient to consider them separately at this stage.

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