

***In vitro* Cultivation of Some Lamiaceae Representatives**

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Aim of the study: The cell and tissue culture can solve the problem of deficiency of plant raw materials and the conservation of all kinds of medicinal plants in nature. For the analysis and regulation of essential oil synthesis, it is more appropriate to use biotechnological methods of *in vitro* culture. The aim of our research is *in vitro* introduction and characterization of the morphogenetic potential of some representatives of the family Lamiaceae (*Mentha longifolia* (L.) Huds., *Agastache mexicana* (Kunth) Lint & Epling, *Agastache rugosa* (Fisch. Et CA Mey.) Kuntze).

Material and Methods: The seeds of studied species were treated with a 5% solution of sodium hypochlorite (SH, bleach) for 10 and 15 minutes and in a 0.1% solution of mercury (II) chloride (corrosive sublimate, CS) for 5 and 10 minutes. Then the seeds were carried out on the MS nutrient medium to a light room for further cultivation. The plants were cut a month after sterilization. Cuttings were transplanted to solid MS nutrient medium. Further development of the plant was noted. To study the effect of the hormonal composition of the nutrient medium on the efficiency of callusogenesis and somatic organogenesis, explants of various types (leaf, stem and node) were placed on the MS nutrient medium with addition of phytohormones and growth regulators: auxins IAA, NAA and/or cytokinin BAP.

Results: There were no significant differences in seed germination efficiency between sterilization modes for *A. mexicana* and *A. rugosa* seeds. In mint leaves, the maximum exposure reduces the germination rate. After cuttings *M. longifolia* plants roots formed quickly and developed actively. For *Agastache* species there are no significant differences in growth processes in clonal micropropagation under experimental conditions. The reaction to the addition of various auxins and cytokinin into the nutrient medium is similar. All species demonstrated a greater ability for callusogenesis when adding NAA, rather than IAA. The stem organogenesis was performed on all types of explants with some advantage of stem explants. The average frequency of stem organogenesis was in the range of 30-40%. Low efficiency of root organogenesis (below 20-25%) was characteristic for all studied species.

Keywords: Lamiaceae, *Mentha longifolia*, *Agastache rugosa*, *Agastache mexicana*, *in vitro* culture, medicinal herb