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Using *in Vitro*-Methods for Propagation and Producing Secondary Metabolites from European Pennyroyal Plants (*Mentha Pulegium* L.)

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European pennyroyal (*Mentha pulegium* L.) is the best source of essential oils and natural antioxidants. The main component of the essential oil is pulegone, which can be a precursor for the synthesis of menthol and menthofuran.

The aim of this research is to develop technology *in vitro* cultivation of European pennyroyal (*Mentha pulegium* L.) to increase the essential oil content. In this research we used the various varieties and the primary explants obtained from plantlets for the induction of callus formation and somatic organogenesis in European pennyroyal plants varieties Pennyroyal and Sonia.

Best response for seeds sterilization was got by using the sodium hypochlorite for 10-15 minutes.

Murashige and Skoog basal medium was used for induction of morphogenesis. Using the lamina explants of Pennyroyal stem organogenesis was obtained in one modification of the ½ MS medium supplemented by 0.5 mg/l kinetin + 1 mg/l NAA - and amounted to 20%.

In the variety Sonia stem organogenesis was not received on any medium modification. Petioles as explants gave no stem organogenesis on any medium modification. Nodes as explants showed stem organogenesis on all medium modifications, its effectiveness ranged between 60% and 100 %. In the variety Sonia stem organogenesis had frequency from 33 % to 100% on most medium modifications. When we used internodes explants of both varieties stem organogenesis was obtained only on MS medium supplemented by 0.5 mg/l BAP + 1 mg/l NAA, and amounted to 20%.

For the induction of root organogenesis we can recommend a medium with half mineral content on MS medium supplemented by kinetin as cytokinin and NAA as auxin. Regenerates of the variety Pennyroyal developed visually better than ones of the variety Sonia. Thus for the variety Pennyroyal we can recommend MS as the mineral basic, and for the variety Sonia - ½ MS.

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