

MICROPROPAGATION OF DIFFERENT MEDICINAL PLANTS

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Introduction

Medical plants have been identified and used throughout human history. Plants have the ability to synthesize a wide variety of chemical compounds that are used to perform important biological functions. The use of herbs to treat disease is almost universal among non-industrialized societies.

Results and discussion

The results of this study showed that selected explants/starting material from medical plants reacted differently to the media composition and different concentrations of growth regulators. Moreover, the experiment resulted either in formation of callus, shoots and leaf rosettes or no reaction to the media and growth regulators.

Table 1. Species of medical plants micropropagated in *in vitro* conditions on different media supplemented with growth regulators.

Species	Explants/ Starting material	Medium + growth regulators (mg·l ⁻¹)	Results
<i>Lavandula vera</i> L.	apical buds	MS + 2 mg/L BAP	callus shoots
	shoots	MS + 2 mg/L BAP + 2 mg/L NAA	roots
<i>Melissa officinalis</i> L.	apical meristem	MS + 2 mg/L BAP	leaf rosettes
	hypocotyls	MS + 2 mg/L BAP	leaf rosettes
	cotyledons	MS + 2 mg/L BAP	/
	leaf rosettes	MS + 1 mg/L NAA	roots
<i>Matricaria chamomilla</i> L.	sprouted plant	MS + 2 mg/L BAP + 2 mg/L NAA	shoots
<i>Salvia officinalis</i> L.	apical meristem	MS + 0,3 mg/L BAP	leaf rosettes
		BM (MS macronutrients + NN micronutrients) + 1 mg/L BAP	/
	hypocotyls	MS + 0,3 mg/L BAP	leaf rosettes
		BM (MS macronutrients + NN micronutrients) + 1 mg/L BAP	/
	cotyledons	MS + 0,3 mg/L BAP	/
		BM (MS macronutrients + NN micronutrients) + 1 mg/L BAP	/
<i>Hypericum perforatum</i> L.	seeds	BM without growing regulators	no germination

Materials and methods

Five medical plants were tested for their micropropagation potential on different media supplied with different concentrations of growth regulators. Apical buds, apical meristem, cotyledons, hypocotyls, shoots, leaf rosettes and sprouted plants were used as starting material and/or explants. The starting material/explants were object of certain sterilization protocol and cultured on different media supplied with different concentrations of growth regulators as show in Table 1. After cultivation, the explants were placed in growth chamber with controlled conditions.

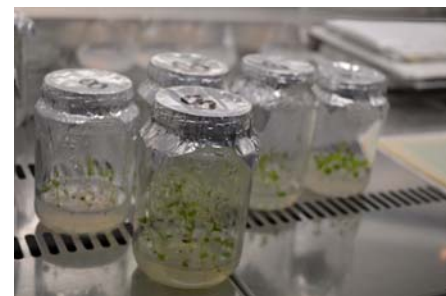


Figure 1. Explants from germinated seeds of *Melissa officinalis* L. used as starting material for micropropagation on different media supplemented with growth regulators.

Conclusion

The application of micropropagation for mass production of medical plants is successful toll that can be used for production of plant-based medicines. They are valuable resource for extraction of plant secondary metabolites utilised for medical purposes.