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MICROPROPAGATION OF DIFFERENT AROMATIC PLANTS

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Introduction

Aromatic plants have been used for centuries as species, natural flavor, raw material for essential-oil industry and other purposes. Some plants are endowed with aroma characteristics and this is where the definition aromatic comes from. Micropropagation of aromatic plants has advantage over conventional propagation because of high multiplication rate, but it depends on the performance of the starting material, media composition, growth regulators and environmental factors.

Materials and methods

Selected genotypes of salad rocket, coriander, rosemary, oregano and peppermint were tested for their micropropagation potential on different media supplied with different concentrations of growth regulators. Apical buds and meristem, cotyledons and hypocotyls 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. After cultivation, the explants were placed in growth chamber with controlled conditions for future development and observation.

Shoots proliferation from hypocotyl explants in salad rocket (*Eruca sativa* L.)

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 ($mg \cdot l^{-1}$)	Results
***Eruca sativa* L.**	apical meristem	MS + 1 mg/L BAP	shoots roots
		MS + 1 mg/L BAP + 0,5 mg/L IAA	leaf rosettes shoots roots callus
	hypocotyls	MS + 1mg/L BAP	leaf rosettes shoots callus
***Coriandrum sativum* L.**	apical meristem	MS + 1mg/L Kin	shoots leaf rosettes callus
	hypocotyls	MS + 1mg/L Kin	shoots
***Rosmarinus* sp.**	apical buds	MS + 0,1 mg/L IAA + 5 mg/L GA_3	/
	apical meristem	MS + 0,1 mg/L IAA + 5 mg/L GA_3	/
	hypocotyls	MS + 0,1 mg/L IAA + 5 mg/L GA_3	/
	cotyledons	MS + 0,1 mg/L IAA + 5 mg/L GA_3	/
***Origanum vulgare* L.**	seeds	BM	no germination
***Menta piperita* L.**	seeds	BM	no germination

Results and discussion

Different explants of *Eruca sativa* L., cultured on MS supplied with certain concentrations and combinations of growth regulators, proliferated in shoots, leaf rosettes, roots and callus. The apical meristem and hypocotils of *Coriandrum sativum* L. gave shoots, leaf rosettes and callus when cultured on MS with 1 mg/L Kin.

The explants for *Rosmarinus* sp. did not show reaction on the cultivation media, while seeds of selected genotype of *Origanum vulgare* L. and *Metha piperita* L. did not germinate.

Conclusion

Micropropagation is an alternative method to traditional propagation and it offers improvements over traditional vegetative propagation because of faster rate of multiplication. In this research, *Eruca sativa* L. and *Coriandrum sativum* L. are species with the highest potential for *in vitro* micropropagation when cultivated on selected media with addition of different combinations of growth regulators.