

**UNION OF SCIENTISTS IN BULGARIA
SECTION BIOLOGY
INSTITUTE OF BIODIVERSITY AND ECOSYSTEM RESEARCH – BAS**



SEMINAR OF ECOLOGY - 2016

with INTERNATIONAL PARTICIPATION

21-22 April 2016



**Програма/Program
Абстракти/Abstracts**



The experiments were performed in the Laboratory of Entomology of the University of Forestry.
Results: The observations showed a clear preference of the adults of *Orchestes fagi* L. to the leaves of wild strawberry and to the young beech leaves.
Conclusion: *Fragaria vesca* L. is registered as a new foodplant to the imago of *Orchestes fagi* L.

ACKNOWLEDGMENTS: This work was supported by grant 53/2015 of the University of Forestry-Sofia.

KEYWORDS: *Orchestes fagi*, foodplants, *Fragaria vesca*

P04_19

MULTIPLICATION AND POLYPHENOLICS PRODUCTION OF *SIDERITIS SCARDICA* THROUGH DIFFERENT TISSUE CULTURE TECHNIQUES

Petya Koleva¹, Ina Aneva², Ljuba Evstatieva², Kalina Danova¹

¹ Institute of Organic Chemistry with Centre of Phytochemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria

² Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Sofia, Bulgaria

The *Sideritis* genus (Lamiaceae) comprises of over 150 species, distributed mainly in the Mediterranean region, the Balkans, the Iberian Peninsula, Central Europe and West Asia. The Balkan endemic *Sideritis scardica* is traditionally utilized as a pulmonary treatment, as well as anti-flu and wound healing remedy. The low germination rate and collection pressure imposes significant risk on its natural populations. Therefore *ex situ* conservation approaches for its conservation have been utilized in Bulgaria, including field cultivation for the needs of the market.

The aim of the present work was to study the effect of different approaches of tissue culture development on the multiplication, as well as polyphenolic production capacity of the species *in vitro*.

Materials and Methods: Organic (plant growth regulators, benzyl adenine and naphthalene acetic acid), as well as inorganic (activated charcoal) treatments were applied to shoot cultures of the species.

Results: Higher multiplication rates, as well as higher polyphenolics levels were obtained by means of plant growth regulators treatments. However, plants tended to have a shorter sub-culture period and form lower and more compact shoot clumps, as compared with the charcoal-treated *S. scardica* plantlets.

Conclusion: As a cost-effective and inorganic agent, activated charcoal seems to be a prospective tool in development of *in vitro* culture system for both prolonging sub-culture period and improvement of explant quality in biotechnological development of the plant.

Keywords: *Sideritis scardica in vitro culture*, plant growth regulators, activated charcoal, multiplication, phenolics.

Acknowledgements: Swiss National Science Foundation in the Framework in the Bulgarian-Swiss Research Program (BSRP, grant No. IZEBZO_142989; DO2-1153); World Federation of Sciences – Bulgarian National Scholarship Programme for young researchers