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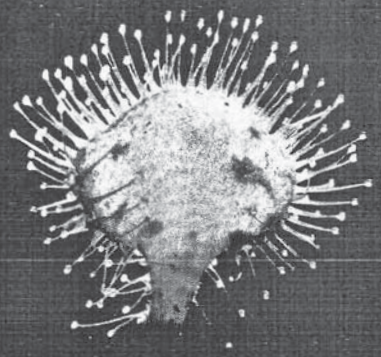

10th Symposium on the Flora of Southeastern Serbia and Neighbouring Regions

Vlasina Lake 17 to 20 June 2010

10. Simpozijum o flori jugoistočne Srbije i susednih regiona

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ABSTRACTS
APSTRAKTI

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odlika patogena, a identifikacija vrste u Institute of Royal Netherlands Academy of Arts and Sciences, Fungal Biodiversity Centre, 2008. Ovo je prvi nalaz ove gljive na obolelim biljkama kantariona. Figure 3. Colony of Diaporthe eres complex Figure 4: Cirrhus, containing spores of Diaporthe eres complex Figure 5a: Lesion on St'Johans worth stem two weeks after inoculation Figure 5b: Cirrhi of Diaporthe eres complex on St'Johans worth stem three weeks after inoculation.

Somatic embryogenesis and in vitro plantlet regeneration of *Lilium martagon* L. var. *cattaniae* Vis.

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In this study we examined organogenic capacity of leaves and bulbs explants of *Lilium martagon* L. var. *cattaniae* Vis. For induction of in vitro somatic embryogenesis and adventitive regeneration from those explants, different concentrations of 2,4-dichlorophenoxyacetic acid and 6-benzilaminopurine (from 0,25 mg/l to 8,00 mg/l) added to MS basal medium were used. Our results indicate that concentration of 0,5 mg/l 2,4-dichlorophenoxyacetic acid and 4 mg/l 6-benzilaminopurine promoted somatic embryogenesis from leaves of *Lilium martagon* var. *cattaniae,* while all other concentrations promoted direct shoot regeneration from bulb explants. Root formation was induced on MS basal medium with 0,2 mg/l indole butyric acid. These plantlets were acclimatized well in a greenhouse conditions.

Role of antioxidat enzymes in the seasonal adaptation of *Picea omorika* (Pančić) Purkyne

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We studied seasonal variation in the activity and isoenzyme pattern of peroxidase, catalase, catechol oxidase and superoxid-dismutase in the needles of *Picea omorika* (Pančić) Purkyne trees. The samples were collected from the natural habitat of the species, Mt. Tara. This endemic coniferous species is exposed to subfreezing temperatures that range from -10 to -30°C during the autumn/winter and

high temperatures exceeding 30°C during the summer. Characteristic EPR signal of free or weakly bound Mn2+ was used as an indicator of oxidative status of needles, since cold-related oxidative damage leads to Mn2+ release from photosystem II. Seasonal changes were found to affect enzymatic activities and isoenzyme profiles. Several isoforms of peroxidase, catechol oxidase and superoxide dismutase, as well as two catalase isoenzymes were detected. The number of peroxidase isoenzymes was greatest during the vegetative season. The results obtained show that there are two gro ups of antioxidant enzymes in P. omorika needles that change levels of activities in the spring/summer and autumn/winter seasons. Catalase and catechol oxidase peaked in summer and spring, respectively. During the autumn/winter season, however, both total SOD and Mn-SOD showed maximum activity. It was observed that prooxidative conditions developed in the autumn, at the beginning of cold season, which corresponded to significant increase of MnSOD activity. This suggests a complementary action of these enzymes in reaction to external changes.

Chenopodium murale L., a long-day plant, as a model plant for physiological and biochemical research

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Chenopodium murale L. plant belongs to the family Chenopodiaceae, genus *Chenopodium* which is widely distributed in Serbia as long-day weedy annual plant. *Chenopodium murale* is also a facultative long-day plant, and an early flowering species. Experiments were performed on *in vitro* cultured *Chenopodium murale* L. plants grown on optimal culture medium and exposed to adequate photoperiodic regime. The effects of glucose and GA_3 on flowering under inductive photoperiodic conditions were tested. Glucose and GA_3 stimulated the flowering of *C.murale*. We showed that exposure of aged vegetative plants to continuous darkness leaded to flowering, as transferring to darkness cancelled photoperiodic control in *C.murale* and flowering occured under autonomous mechanism. The seeds were produced *in vitro* within 18 weeks and the antioxidative enzymes were analysed during seed germination. The results presented indicate a sequential expression of the antioxidative enzymes and their importance in seed germination. Changes in catalase (CAT), superoxide dismutase (SOD) and peroxidase (POD) activities could be