ABSTRACTS

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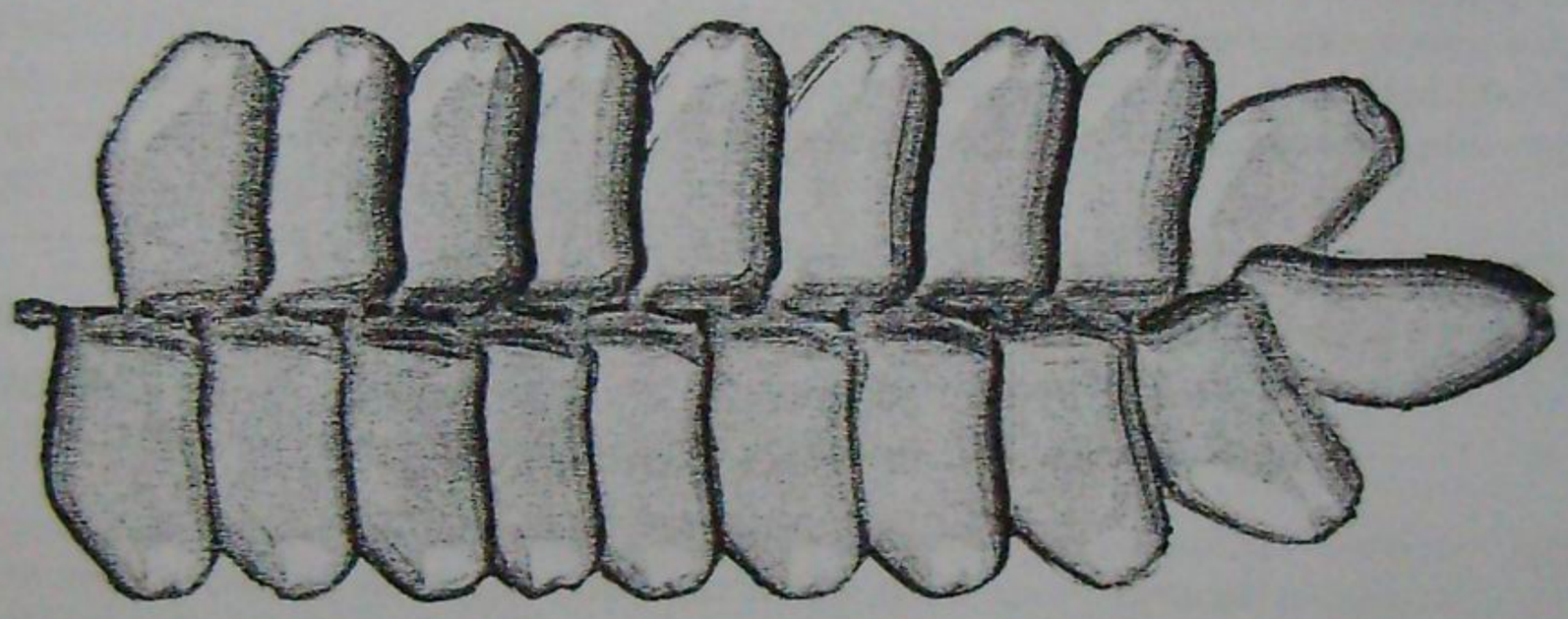

6TH INTERNATIONAL CONFERENCE ON MYCORRHIZA

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Edited by Maria Catarina Megumi Kasuya and Maurício Dutra Costa

accumulation per plant of mycorrhizal KFS2 was less than that of mycorrhizal speed feed, P inflow to mycorrhizal KFS2 was greater than that of mycorrhizal speed feed. This shows that KFS2 was more depended to mycorrhizal fungus than speed feed.

P7.12 - Influence of exogenous treatment by plant growth regulators on development of *Medicago lupulina* with mycorrhizal fungus *Glomus intraradices*

Andrey Pavlovich, Yurkov (All-Russia Res Inst Agricult Microbiol-ARRIAM- RAAS) A.P., Jacobi , L.M. (ARRIAM- RAAS), Stepanova, G.V. (All-Russian Res Feed Inst-RAAS), Kojemiakov, A.P. (ARRIAM- RAAS), Zavalin A.A.9 All-Russian Res Inst Agrochem-RAAS)

Spring black medic cv. VIK32 (*Medicago lupulina* L., self-pollinating species, diploid) was used as a model plant, characterized by: 1) dwarf symptoms under low phosphorus (P) level and without arbuscular mycorrhiza (AM) fungi in soil; 2) positive growth response to AM. We analyzed influences of exogenous treatments by plant growth regulators – PGR (3-indolylacetic, abscisic, gibberellic A3 (GA), salicylic (SA), 1-aminocyclopropane-1-carboxylic acids, and 6-benzylaminopurine (BAP) in different concentrations) on mycorrhization, development of plants with/without AM fungus *Glomus intraradices*, P and nitrogen accumulation in shoots and roots under low P level in soil.

The analysis of plants was provided at 30th day after sowing. GA depressed AM development. Similar data were obtained in *Pisum sativum* L. by Ghachtouli et al. (1996). In our test GA negatively influenced on P uptake. As a result P accumulation was low both in plants with and without AM in comparison with control (–AM). BAP treatments suppressed plant growth, but didn't decrease mycorrhization and P accumulation by plants. Otherwise SA treatments increased plant growth (with/without AM) and AM development. This phenomenon may be used as technological method of AM fungi cultivation. All other PGR didn't essentially influence on analyzed characteristics.

In black medic we obtained 4 myc–-mutants, selected with dwarf symptoms. Efficiency of ethyl methanesulfonate mutagenesis was considerable (~1.3%).

P7.13 - Survival and growth of micropropagated physic nut (*Jatropha curcas* L.) Plantlets associated to *Glomus clarum*

Folli, M.S.,Rodrigues, A.L.,Meira, L.S.,Lani, E.R.G.,Otoni, W.C.,Silva, L.C., Kasuya, M.C.M. (Universidade Fedseral de Viçosa, Brazil)

The association of micropropagated plants with arbuscular mycorrhizal fungi (AMF) can improve the survival rate during the acclimatization, besides increasing the tolerance of the plants to adverse environmental conditions. The aim of this work was to evaluate the effect of *Glomus clarum* inoculation on the survival, growth and nutrients absorption by micropropagated *Jatropha curcas*. Micropropagated plantlets at 0, 14 or 21 d of growth in rooting medium, added or not with IBA, were transferred to a substrate composed by sand:soil:vermiculite (1:1/2:1, v:v:v). After 2 weeks, the survival rates throughout the acclimatization conditions were 100 % for plants maintained during 0 or 14 d and 93 % for those maintained for 21 d in rooting medium. The period of time in rooting medium and the addition of IBA did not affect the growth of the plants. The colonization ranged from 70 to 93 % and the stimulatory effects of AMF were observed in all the characteristics related to the growth, except to the height, that was very similar among them presenting average of 7.97 cm tall. The plants inoculated with *G. clarum* efficiently absorbed nutrients, mainly P, with average of 0.13 dag Kg-1 in the dry matter. Micropropagated plants of *J. curcas* may not require *in vitro* rooting phase, and inoculation with AMF in the beginning of the acclimatization process can benefit the survival and growth of this species.

P7.14 - Do arbuscular mycorrhizal fungi influence caesium uptake by *Medicago truncatula*?

Lea Wiesel, Martin R. Broadley, Philip J. White

Radiocaesium (Cs) contamination of soils is a worldwide problem that has arisen from human activities, such as accidents at nuclear power plants and radioactive fallout from nuclear weapons tests. The contamination of soils by Cs is of serious concern because of the long half-lives of the radionuclides (134Cs = 2yr, 137Cs = 30yr) and the emission of harmful β and γ radiation during decay. Radiocaesium enters the food chain through vegetation and therefore has an impact on human health. Plants acquire Cs from the rhizosphere and Cs is transported symplastically to the xylem. Because of the chemical similarity of Cs and potassium (K), K transport proteins contribute to Cs uptake by roots and the delivery of Cs to the shoot. Arbuscular mycorrhizal (AM) fungi play an important role in plant nutrition. Since AM fungi deliver nutrients to plant roots it has been suggested that they might also affect Cs uptake by plants. To investigate the influence of AM fungi on Cs uptake by plants, *Medicago truncatula* was grown in association with *Glomus* sp. under *in vitro* conditions. Under K-deficient conditions, neither Cs in the media nor mycorrhizal infections influenced fresh weight of *M. truncatula*. The colonization of roots with *Glomus* sp. did not change K or phosphorus (P) concentrations in plant tissues under these assay conditions. Neither the Cs concentration in shoots nor the Cs concentration in roots were affected by mycorrhizal infection.

Influence of exogenous treatment by plant growth regulators on development of Medicago lupulina with mycorrhizal fungus Glomus intraradices

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Thematic Area: Mycorrhizas and plant nutrition

Spring black medic cv. VIK32 (Medicago lupulina L., self-pollinating species, diploid) was used as a model plant, characterized by: 1) dwarf symptoms under low phosphorus (P) level and without arbuscular mycorrhiza (AM) fungi in soil; 2) positive growth response to AM. We analyzed influences of exogenous treatments by plant growth regulators – PGR (3-indolylacetic, abscisic, gibberellic A3 (GA), salicylic (SA), 1-aminocyclopropane-1-carboxylic acids, and 6-benzylaminopurine (BAP) in different concentrations) on mycorrhization, development of plants with/without AM fungus Glomus intraradices, P and nitrogen accumulation in shoots and roots under low P level in soil.

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