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PROGRAM AND ABSTRACTS

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Effect of mycorrhizal inoculation on tolerance of *Castanea sativa* Mill plants to *Phytophthora cinnamomi* infection

Anabela Martins*, Eugénia Gouveia*, Valentim Coelho*, Isabel Estevinho* and M. S. Pais**
*Escola Superior Agrária de Bragança, Qta. de Sta. Apolónia, 5300 - 855 Bragança, Portugal. **
** Laboratório de Biotecnologia Vegetal - ICAT, Campo Grande, 1749 - 016, Lisboa, Portugal.

Two different trials (1) and (2) were made in order to test mycorrhizal inoculation effect against *Phytophthora cinnamomi* in vivo. *Castanea sativa* Mill seedlings were inoculated with *Pisolithus tinctorius* at sowing (M1). Two month later, half of the M1 plants were reinoculated (M2) with *P. tinctorius*. 1) At the same time, M1, M2 and nonmycorrhizal (NM) plants were inoculated with 0,1%, 0,5% and 2% of *P. cinnamomi*; 2) One month after reinoculation, M2 and nonmycorrhizal (NM) plants were inoculated with 0,1% and 0,5% *P. cinnamomi*

The results obtained for the two trials were very different in terms of mycorrhizal protection against *P. cinnamomi*. Trial 1) shows that mycorrhizal inoculation simultaneous to reinoculation could not induce protection against *P. cinnamomi*. Results of trial 2) showed mycorrhizal protection against *P. cinnamomi* for both percentages of inoculation

From the results obtained we can consider that mycorrhizal protection against *P. cinnamomi* depends on the time of mycorrhizal association. Trial 2) shows that 3 month after mycorrhizal fungus inoculation and 1 month after reinoculation plants present some degree of protection against *P. cinnamomi*, suggesting that after an adequate period, mycorrhization induces plant protection against this pathogenic fungus.

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Influence of soil phosphorus on the interactions between the mycorrhizal fungus *Glomus coronatum*, and binucleate *Rhizoctonia* or *Rhizoctonia solani* on mung bean

R.S. Kasiandari, S.E. Smith, F.A. Smith and E.S. Scott
The University of Adelaide, Australia

Previous studies on the interactions between arbuscular mycorrhizal (AM) fungi and soil-borne pathogens have shown that increased disease resistance of plants might be related to enhanced phosphorus (P) nutrition. In order to investigate this possibility, the influence of P fertilization and inoculation of the AM fungus (*G. coronatum*) on the infection and disease severity of binucleate *Rhizoctonia* (BNR) and *R. solani* on mung bean were investigated. Two experiments were conducted in two levels of P addition (P0 and P1), in which BNR or *R. solani* were inoculated at the same time or 3 weeks after *G. coronatum* was established in the roots. After 6 weeks, *R. solani* reduced the growth of non-mycorrhizal plants in P0 soil, whereas BNR had no effect. Simultaneous inoculation with *G. coronatum* and BNR or *R. solani* in P0 soil resulted in improved growth, reduction in disease severity due to BNR or *R. solani*, and reduction in colonisation of roots by BNR, but not *R. solani*. When *G. coronatum* was established in the roots 3 weeks before BNR or *R. solani* was added to the potting mix, there was no significant effect of BNR or *R. solani* on growth of mung bean. Early colonisation by *G. coronatum* protected plants from disease caused by BNR or *R. solani*. In both experiments, addition of P stimulated plant growth, but had little effect on disease severity. The results showed that the reduction of the effect of BNR or *R. solani* on mung bean could not be explained by improved P nutrition, but could be attributed to the presence of *G. coronatum* within and among the roots.

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