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Practice Abstract Nº 3 Arbuscular Mycorrhizal Fungi (AMF) inoculation of cover crop seeds

INTRODUCTION

AMF are soil symbionts fulfilling a key function in the complex networks of belowground/aboveground biotic interactions as they live in association with the roots of most land plant families and influence not only soil fertility, but also plant nutrition, diversity and productivity, increasing plant resistance to biotic and abiotic stresses.

MAIN RESULTS – OUTCOMES

- The protocol utilized for seed inoculation did not affect seed germination. Five days after sowing, most seeds showed high germination percentages (80-100%), while species such as *Medicago truncatula* and *Phacelia sp.* showed low germination percentages (60%)
- The positive effect of seed inoculation was also observed on rootlets growth. Six species over eleven (*Pisum sativum, Triticum durum, Secale cereale, Vicia faba minor, Vicia villosa* and *Trifolium incarnatum*) showed significant longer rootlets in inoculated seeds compared with control (65%, 53%, 37%, 34%, 37%, 29%, 23% longer, respectively)

PRACTICAL RECOMMENDATIONS

• AMF may reduce aggressive agricultural weeds growth, while enhancing the yield of agricultural crops & cover crops (cc)

²AMF may favor cc rapid soil coverage and growth, smothering the weeds

⁽³⁾Their use as inoculum represents one of the most promising tools for sustainable management of agricultural soils, being fundamental for organic food production, reducing agrochemicals and decreasing environmental damage



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Non-inoculated (control) Vicia faba minor seeds vs AMF inoculated ones, two days after sowing



Copyrights: University of Pisa team Non-inoculated (control) *Triticum durum* seeds vs AMF inoculated ones, two days after sowing



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