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Fenoles: origen y evolución

RESÚMENES

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12.- Effect of a commercial mycorrhiza on soil nutrients bioavailability and growth of young olive trees grown in a pot experiment.

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Mycorrhizal colonization of plant roots may have several benefits to nutrients and water acquisition by plants. The aim of the study was the evaluation of the effect of a commercial mycorrhiza on: (i) soil properties, in particular on the bioavailability of the nutrients; (ii) the nutritional status of the olive plants during the growing season; and (iii) dry matter yield on olive plants. The experiment was conducted in pots in a greenhouse of the Polytechnic Institute of Bragança, located in the northeast of Portugal. Seven treatments (Control, Mycorrhiza + 3% NPK, 3% NPK; 3% NPK + 3% N, 3% NPK + 3% P, 3% NPK + 3% K, 3% NPK + micronutrients) were arranged as a completely random design with three replicates. Young rooted plants (~20 cm height) were used in this study and grown in pots of 3 kg soil for a year. The plants were destroyed one year after had been planted and separated into roots, stems and leaves. The plant's parts were dried in an oven (70 °C), weighted, ground and analyzed for the elemental composition. From a soil sample of each experimental unit they were determined several soil properties. Total (roots+stems+leaves) matter yield did not significantly vary with the fertilizer treatments. Phosphorus concentrations in the stems and roots were significantly higher in Mycorrhiza treated plants than in the other treatments. In Mycorrhiza pots there were recorded the higher pH values. Soil phosphorus and potassium availability in Mycorrhiza pots was similar to the treatments receiving an addition of these elements. Mycorrhiza gave soil organic matter values similar to the treatments producing the higher values. Regarding phosphatase activity, the Mycorrhiza (487.51 µg nitrofenol g⁻¹ h⁻¹) showed twice the value of the treatment with phosphorus addition (280.70 µg nitrofenol g⁻¹ h⁻¹). Thus, the commercial mycorrhiza was able to maintain the plant nutritional status.

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