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Cover cropping in rainfed olive orchards

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Cover cropping has been advocated as a mean of reducing soil erosion and increasing soil organic matter and functional biodiversity. There are many other good reasons to establish a cover crop in an orchard since it can improve in several ways the physical, chemical and biological properties of a soil. However, herbaceous vegetation competes for resources. In intensive-managed orchards, without limitation of available water and nutrients, probably this is a minor problem. In rainfed orchards, to balance the potential beneficial effects of cover crops and their strong competition for resources in particular for available water is a great challenge. In this work, we report results from field trials from which we are proposing a model of intervention in rainfed managed orchards consisting of the use of very early maturing self-reseeding annual legumes as a cover crop. These plants are able to enrich the soil with nitrogen and to protect the soil all year round through a green cover of vegetation during autumn-spring and a mulch of dead material during summer. Experimental results also showed that nitrogen nutritional status of the olive trees and olive yields increased in comparison to a plot of natural vegetation fertilized with $60 \text{ kg N ha}^{-1} \text{ yr}^{-1}$.

Biography

M Angelo Rodrigues has obtained his PhD degree in Edaphic and Environmental Sciences at the University of Trás-os-Montes and Alto Douro, Portugal in 2000. He has coordinated and/or participated in two dozen National and International research projects. He has published 130 scientific papers (31 in ISI/JCR journals), book chapters and technical reports. He has been Deputy Director of the School of Agriculture of IPB and President of the scientific committee of the Master's program of Agroecology at the same institution. He was Vice-Coordinator of the Mountain Research Centre and Vice-Delegate of the Order of Engineers of the district of Bragança, Portugal.

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