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I International Conference on Research for Sustainable Development in Mountain Regions

Book of Abstracts

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Cover crops for the Mediterranean rainfed fruticulture

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Cover cropping is the most desirable method of ground management in fruticulture. However, in drought prone regions, such as in the Mediterranean basin, the introduction of cover crops in the orchards should be done with caution due to competition for water. The olive orchards are a paradoxical example. In spite of the increase in the irrigated areas, most of the olive orchards are rainfed managed, particularly in slopping lands with less access to water and irrigation infrastructures. In this work, a summary of four year of research on cover cropping with self-reseeding annual legumes is presented. The groundcover percentage and the persistence of the seeded species, their ability to produce biomass and to fix nitrogen from the atmosphere and the effect of the covers on the tree nitrogen nutritional status and olive yields were assessed. The results showed good soil coverage with living vegetation during the winter and a mulch of dead material during the summer. The seeded species dominated the cover during the four years of experience. The dry matter yield (average of four growing seasons) ranged between 3 and 6 t/ha/year and the nitrogen fixed in the above-ground biomass between 50 and 115 kg/ha/year depending on the length of the growing cycle. The lowest and highest values were respectively recorded for Trifolium subterraneum cv. Nungarin and Trifolium incarnatum cv. Contea. The early-maturing cultivars produced less biomass and fixed less nitrogen than midseason cultivars. A cover consisting of a mixture of early and midseason species and cultivars of annual legumes produced an effect on the nitrogen nutritional status and olive yield higher than the application of 60 kg N/ha/year.