



1 Relevant weed choice is realistic on the row of adult orchards

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Weed control in perennial crops is often done by soil tillage, with consequences on soil fertility, erosion, ecological disbalance. Our aim was to show that soil can be maintained fully covered without affecting orchard development and yield.

A trial has been set up in 1999 in an irrigated adult orchard (cv. Reinette Grise), with different weeds (including mediterranean poaceae and legumes ecotypes), sown under the row. Those strategies were compared to permanent tilled soil, and to spontaneous flora under uncultivated soil. Effects on tree growth, soil nitrogen content, cropload and harvest, rosy apple aphid infestation rate, leaf fall and leaf nutrients have been assessed all through the experiment, during 6 years. For the needs of the experiment, floribondity had to be levelled in all plots in 2002.

Most of grasses (*Dactyla* sp., *Festuca* sp.) have been well established after 2-3 years, but alfalfas had to be sown again to get a significant coverage

Results clearly show in our case that mediterranean weeds are non competitive for nitrogen or water, even in extrem situations of full soil coverage.

Effects on trees, fruits, or soil have shown no significant differences among different treatments, indicating that it may be realistic to keep selected weeds under the row,

even in mediterranean locations, and with a reasonable irrigation.