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Effects of mono and polyculture of cover crops on weed control and yield in tomato fields

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ABSTRACT

In two field experiments the effects of cover crop monoculture and polyculture on weed control of tomato (*Lycopersicum esculentum*) was investigated in Varamin Research Station during 2003-2005. Each experiment consisted a split plot design in a complete randomized block arrangement with three replications. supplemental weed control with 2 levels (weeding and weedy) were allocated as main plot and mixture of rye (*Secale cereale*) and hairy vetch (*Vicia villosa*) at 5 levels (100% rye + 0% hairy vetch, 25% rye + 75% hairy vetch, 17/5% rye + 82/5% hairy vetch, 10% rye + 90% hairy vetch and 100% hairy vetch + 0% rye) were placed as subplots. Results showed that biomass of rye and cover crop mixtures were higher than hairy vetch monoculture. Cover crop mixtures reduced weed density and biomass as compared to vetch monoculture in the first year. However, in the second year weed control of all cover crop treated plots was similar. Fruit yield in both years were similar in hairy vetch and rye monoculture and all mixtures but was lower in the rye monoculture in the first year. Tomato grown in the cover crops without weeding yielded lower than the corresponding weed free treatments. Cover crops affected fruit and plant weight and number of fruit on plant.

Key words: tomato, cover crops, rye, hairy vetch.

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