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The effect of crop rotation on the population reduction of sugar beet cyst nematode (*Heterodera schachtii*) in Isfahan

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ABSTRACT

Crop rotation is one of the most effective methods of reducing the damage of sugar beet cyst nematode (*Heterodera schachtii* Schmidt, 1871). In this study in a six years period (1992-1997), no-host crops: wheat, clover, cantaloupe, alfalfa, grain maize, cotton and onion were used in a completely randomized block design with five rotation patterns (treatments) and five replications in an infected field in "Jey and Ghohab" area of Isfahan. The eggs and larvae in the cysts per gr. of soil, before planting and after harvest of each crop, percentage of nematode reduction, root and sugar yield per ha. in the final year were measured. The results showed that all the rotation patterns had significantly different data with that of check (six years continuous sugar beet) of 1% level. The rotation of "sugar beet, cotton, wheat, onion, cantaloupe and sugar beet" and also "sugar beet, cantaloupe, wheat, clover, grain maize and sugar beet" reduced the nematode population up to 100% after five years in experimental trials. The yield of sugar beet root at last year was 20.46 and 20.52 and sugar yield was 2.89 and 2.73 ton/ha. for these two groups respectively. The data for check were 16.9 and 2.1 ton/ha. respectively.

Key words: sugar beet, rotation, sugar beet cyst nematode, *Heterodera schachtii*.

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