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Yield and oil quality of sunflower infected with the root-knot nematode, *Meloidogyne arenaria*

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Abstract: Relationship between growth, yield, chemical composition of sunflower seeds, oil quality and the root gall index (GI) caused by the root- knot nematode, *Meloidogyne arenaria* was studied in sandy soil under field and drip irrigation condition. Both growth and seed yield were negatively affected by nematode infection. A significant reduction in seeds yield 35.4%, 42.0% and 43.4% was obtained at 3,4 and 5 GI, respectively. Seed content from protein, N,P, Mn and Zn decreased with increasing nematode damage (GI), in opposition to carbohydrates and Fe content which increased with increasing nematode damage, while oil and K contents were not affected. Sunflower seed oil consisted of six fatty acids, four of them were saturated (myristic, palmitic, stearic and arachidic) and two unsaturated (oleic and linoleic). The unsaturated fatty acids were predominant, as they formed about 91% from total fatty acids, while saturated formed about 9%. The poly unsaturated linoleic acid alone formed about 62% from total fatty acids in the oil. The saturated fatty acids, myristic and palmitic increased in oil of seeds of plant infected with nematodes, while stearic acid decreased. The polyunsaturated fatty acid (linoleic) increased in oil seeds of infected plant with nematodes, while oleic acid decreased compared with those in oil of healthy plants. Tocopherol (Vitamen E) concentration was more in oil of the infected plants with nematodes than that in oil of healthy sunflower plants.

Keywords: Sunflower, yield, oil quality , tocopherol, root knot nematode.

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