Can Insecticide Seed Treatments Protect Carrots from Damage by Carrot Weevil and Carrot Rust Fly?

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Carrot rust fly (*Psila rosea* (Fabricius)) and carrot weevil (*Listronotus oregonensis*(LeConte)) are major insect pests of carrots grown on muck soils in eastern Canada. The carrot rust fly has two generations per year; adults emerge at 329 and 1399 day degress at base 3 C. Carrot weevils have one generation per year, they overwinter as adults and begin depositing eggs at 138 daydegrees at base 7 C. Both pests deposit eggs on the soil at the base of carrot plants and the larvae feed on the roots. Populations of both insects are monitored as part of the local integrated pest management program. Foliar insecticde sprays are registered for both pests, but control of carrot rust fly can be erractic. Insecticide seed treatments could be an efficient method of reducing the damage caused by the larvae. Insecticide seed treatments spinosad, thiamethoxam and clothianidin were evaluated in field trials in the Holland Marsh, Ontario, from 2007-2009. In 2007, spinosad (3.75 and 7.5 mg ai/100g seed) and clothianidin (5.6 and 7.5 mg a.i.) reduced carrot weevil damage. In 2008, thiamethoxam (2.5 and 3.75 mg a.i.), spinosad (7.5 mg a.i.) and clothianidin plus imidachloprid (3:1 at 11.25 mg a.i total) suppressed carrot rust fly damage. Rust fly damage was high in 2009 and there were no significant differences among treatments. Spinosad shows promise for suppression of both pests.