Section VII
Foliage & Seed Insects

POPULATION DYNAMICS OF COLORADO POTATO BEETLE ON ALTERNATE HOST PLANTS

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Nightshade, especially hairy nightshade, *Solanum sarrachoides* Sendt., is a locally abundant weed species in irrigated crop lands. It serves as a major alternate host plant of the Colorado potato beetle (CPB), and plays a very important role in the life history of the beetle. It starts emerging in late-June, and continues emerging throughout the season. Its full growth stage occurs in July/August while foliage of potatoes are declining. The colonization of nightshade plants by beetles were found as early as late-June. Mark-release and recapture technique indicated that a large percentage of CPB adults leave potatoes for nightshade after about one week of feeding on potato foliage. The population densities on nightshade plants were much higher than that on potatoes. Those beetles developing on nightshade were found to overwinter there, and to colonize potatoes the following season.

The movement of the Colorado potato beetles between potato and alternate host plant, i.e. nightshade, might be related to the delay of the insecticide resistance in the beetle. These movements mix up the population genes of the beetle, alter the gene frequencies, and keep the frequencies of insecticide-resistant genes, if any, at very low levels.