Abundances of Potato Psyllids, Whiteflies and Predacious Phytoseiid Mites under Organic Insecticides Programs

Gabriela Esparza-Díaz, and Raul T. Villanueva
Texas A&M AgriLife Extension Service. Corresponding author: gesparzadiaz@ag.tamu.edu

Abstract

Currently, potato psyllids (*Bactericera cockerelli*) and the bacterium that causes zebra chip disease are present in many areas where potato is grown in backyards. In these conditions, growers rarely use conventional insecticides to control potato psyllid or whitefly. This was an effort to study the capacity of some organic insecticides to control two pests: potato psyllids and whiteflies *(Bemicia tabaci)* and evaluate the presence of an unknown phytoseiid mite. This study was conducted on Atlantic potato plants. Potato psyllid eggs, nymphs, and whitefly nymph, and phytoseiid mite densities were recorded. Plants were planted on January 11th. Treatments were applied in Feb 7th and March 6th with a mix of neem oil 70 % (3 oz/ac) with azadirachtin 3% (10 oz/ac), pyrethrin 1.4 % (16 oz/ac) or spinosad 80% (2 oz/ac). Results showed that any of the insecticides used were not effective to control psyllids. But whiteflies and phytodeiids numbers were lessened with the applications of azadirachtin or pyrethrin, plus neem oil. The lowest numbers of potato psyllids and the highest numbers of phytoseiids on the untreated control might indicate of the role of this predacious mite on the control of potato psyllids. Preliminary tests showed that they consumed eggs and nymphs of potato psyllids. The impact of this natural enemy needs to be evaluated further, as well as the potential for mass releases for use in conventional fields. Yields were not different among treatments and potato tuber sizes were reduced.