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7. Title

Insect Pest Management of Sweet Potato and Vegetable Crops

12. Investigator Name(s) (Last Name and Initials)

Story, R. N.

20. Termination Date 09/30/2013 | 40. Period Covered (mo/da/year): 01/01/2011 TO 12/31/2011

Outputs:

Results of research activities were presented at professional entomology meetings (Florida Entomologists Annual Meeting, Rocky Mountain Conference of Entomologists Annual Meeting, Entomological Society of America Annual Meeting). Presentations were also made at Louisiana sweet potato grower meetings. There were eight publications in Arthropod Management Tests.

Outcomes/Impacts:

Research on sweet potato insect pest management systems helped growers reduce losses due to insect pests, enabled growers to use insecticides more effectively, and increased their profitability. This work includes information on the effect of timing of insecticide application and product selection on expected damage reduction, and monitoring systems for adult stages of these pests with treatment thresholds designed to limit root damage to no more than 5%. The timing of pre-plant soil incorporated insecticide treatments and the efficacy of lay-by applications (made 3-4 weeks after planting) was the focus during 2011. Pre-plant insecticides must be applied within a few days of planting to be effective. Poor control was obtained when these insecticides were used a month in advance of planting. Lay-by applications may be used as an alternative to the pre-plant application. Belay, a newly labeled neonicotinoid compound, provided satisfactory control of both rootworms and white grubs in a lay-by application. A host plant resistance project involved screening germplasm from a polycross nursery for resistance to the sweet potato weevil. Each year the best performers are kept for the next year's nursery. A 3-year comparison between non-treated and treated plots revealed a 63% damage reduction where growers followed treatment thresholds and recommended IPM practices. In an average field (10% root damage in non-treated plots, 250 bushels per acre, $15.00 per bushel), of about $236.00 per acre was out.

Publications:

Story, R.N., M.J. Murray, P. Thatujirangkul, and T. Smith. 2011. Evaluation of layby and foliar insecticides in 3 grower fields for control of rootworms and white grubs in sweet potatoes, 2010. Arthropod Management Tests 36:E81.

Story, R.N., M.J. Murray, P. Thatujirangkul. 2011. Evaluation of foliar insecticides for control of rootworms, sweet potato weevils, and white grubs in sweet potatoes, 2010. Arthropod Management Tests 36:E82.

Story, R.N., P. Thatujirangkul, M.J. Murray, and Y. Chen. 2011. Evaluation of insecticides for control of western flower thrips, 2010. Arthropod Management Tests 36:L6.

Story, R.N., P. Thatujirangkul, M.J. Murray, and Y.Chen. 2011. Evaluation of insecticides for control of four western flower thrips populations, 2010. Arthropod Management Tests 36:L7.

Story, R.N., P. Thatujirangkul, and M.J. Murray. 2011. Evaluation of insecticides for control of sweet potato weevils in sweet potatoes, 2010. Arthropod Management Tests 36:L9.

Story, R.N., P. Thatujirangkul, and M.J. Murray. 2011. Residual activity of foliar-applied insecticides to control sweet potato weevil, 2010. Arthropod Management Tests 36:L10.

Story, R.N., M.J. Murray, D.R. LaBonte, and P. Thatujirangkul. 2011. Field evaluation of sweet potato cultivars for resistance to sweet potato weevils, white grubs, and rootworms, 2010.

Smith, T.P., and R.N. Story. 2011. Evaluation of preplant and layby insecticides for control of soil insects in sweet potatoes,

2010. Arthropod Management Tests 36:E80.

Participants:

Richard Story (PI), Jeff Murray, Yan Chen, Tara Smith and Don LaBonte, LSU AgCenter; Louisiana sweet potato growers, Sweet Potato Growers Association.

Target Audiences:

Sweet potato and vegetable growers, packers, and shippers, and the floricultural industry in Louisiana and elsewhere in the US where vegetables and ornamentals are grown.

Project Modifications:

Nothing significant to report during this reporting period.

Approved (Signature)	Title	Date