



BUG BIZ

Pest Management and Insect Identification Series



Managing Cucumber Beetles (Rootworms) in Louisiana Sweet Potato Production

Background

Two species of cucumber beetles damage sweet potatoes in Louisiana. Adults and larvae of the banded cucumber beetle, *Diabrotica balteata*, and the spotted cucumber beetle, *Diabrotica undecimpunctata*, feed on sweet potato. Both species are highly mobile and also will feed on several other host plants including various vegetable plant species, soybeans and corn.

Damage

Adult beetles feed on sweet potato foliage, creating irregular holes in the leaves. Beetles usually do not consume enough foliage to negatively affect plant productivity; however, the presence of adult beetles is cause for concern. Adult beetles lay eggs in the soil, and larvae developing in the soil feed on developing sweet potato roots. Feeding on the roots can occur throughout the production season, but damage from these insects is increased in late season. Feeding injury results in unsightly blemishes on the roots at harvest (Fig. 1). The larval stage lasts from 8-30 days depending on temperature and food supply. Pupae are found just below the soil surface. Adults emerge in approximately one week. Numerous generations of these insects can develop and injure sweet potatoes throughout the production season.



Fig 1. Sweet potato roots injured by cucumber beetles

Description

Cucumber beetles of both species are about ¼ inch long. The adult banded cucumber beetle (Fig. 2) is marked with alternating green and yellow bands. The spotted cucumber beetle is slightly more robust and has 12 black spots on a yellow-green background (Fig. 3). Cucumber beetle larvae (rootworms) of the two species are difficult to distinguish and have a yellowish white body, with three pairs of brownish legs near the head and single pair of prolegs near the tip of the abdomen.



Fig 2. Adult banded cucumber beetle

Impact

Sweet potatoes are an aesthetic vegetable crop. Minimal insect feeding to roots can compromise the appearance and drastically affect the marketability of the crop. Insect damage may not necessarily affect total yield in terms of bushels/acre, but the yield grade is affected, and producers are forced to market insect damaged sweet potatoes at a reduced price, as culls or canners, and not as a U.S. #1 grade sweet potato, which is the premium yield grade of sweet potatoes in the United States.



Fig 3. Adult spotted cucumber beetle

Management and Control

Soil insects affecting sweet potato can be difficult to manage and control. Recent studies have suggested that adult activity and damage is increased in late season. A preplant soil insecticide should be used to control rootworms that may be present prior to transplanting. Preplant insecticides should be applied as close to transplanting as possible in accordance with label directions to achieve the maximum residual control from the products. A scouting and monitoring program should be initiated within 1 to 2 weeks following transplant. Adult cucumber beetles can be monitored with sweep nets; a threshold of two cucumber beetles per 100 sweeps should be used. A labeled foliar insecticide should be applied if populations reach threshold levels. Insecticide management options for cucumber beetles in sweet potato include:

Application	Chemical/ Formulation	Rate/Acre
Preplant	Capture/Brigade 2EC	0.3 lb ai/A (19.2 fl oz/A)
	Mocap EC	1-1.3 gal/A (broadcast)
		5.1-6.9 fl oz/A (banded)
	Mocap 15G	20-26 lb/A (row treatment)
40-54 lb/A (broadcast)		
Foliar	Capture/Brigade 2EC	3.2 fl oz/A
	PennCap M	2-3 pt/A
	Imidan 70-W	1 1/3 lb/A (ph 5-5.5)
	Sevin XLR-Plus	1-2 qt/A
	Thiodan 3EC	2/3 qt/A
	Assail 30SG	1.5-4 oz/A



Authors:

Tara P. Smith, Extension Specialist, Sweet Potato
 Abner M. Hammond, Professor, Entomology
 Rick Story, Professor, Entomology
 Eugene Burriss, Professor, Northeast Research Station

Photo Credits:

Jack Reed, Tara Smith

Louisiana State University Agricultural Center

William B. Richardson, Chancellor

Louisiana Agricultural Experiment Station

David J. Boethel, Vice Chancellor and Director

Louisiana Cooperative Extension Service

Paul D. Coreil, Vice Chancellor and Director

Pub. 2960 (Online Only) 03/07

Issued in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. The Louisiana Cooperative Extension Service provides equal opportunities in programs and employment.