

Session 3

Applying Pest Management Strategy – Learning Activity

(Directions to Facilitators are in Italics, Directions to Participants are in Bold)

Work through the pest problem using the 5-step strategy of pest management.

Step 1: Identify this pest using Bugwood IPM Images.

Go to the Bugwood Network Website. Show them this is a good resource for a lot of pest and invasive species information. Click on the IPM Images located in gray box on right side of the site. Point out the range of crops and topics that they have images for. Click on Vegetables. Click on Beans and show them the images that can help them id pests. Then begin to id the insects in the picture on their worksheet. Ask the group to pick a crop they want to look up on the Bugwood IPM site based on the picture and insect pest below. Go through the images under the crop they select looking for a match. Use the hint if needed – the leaf is from a plant in the curcubit family.

Answer: Squash Bug nymphs



Step 2: Understand ecology of pest

Find pictures on Bugwood that show the other life cycle stages of this pest.

Eggs

Nymphs

Adults

*Find pictures on Bugwood that show the other life cycle stages of this pest by searching for squash bug in the Search box at the upper right corner. Pause at the picture of eggs. Ask them to jot down a couple of words to describe the eggs appearance. Pause at the picture of the nymphs again and ask them to do the same. Do the same things with the adults. We are not going for scientific descriptions here, just teaching them to **look** for details that will help them id things by image.*

Examples:

Eggs – reddish small, smooth ovals, underside of leaf

Nymphs – black legs, white to grey bodies, soft body when young progressing to look more like adults

Adults – brown to gray, flattish body, small head

Use the Created Features Handout, Table 2-29 of the Southeastern Vegetable Crop Handbook to identify the systems-based practices, mechanical and physical tactics, and natural enemies for pest prevention.

Have the class turn to the Featured Creatures Handout in their notebooks, it is located after the power points in Section 3. Next pull up the pdf of the Southeastern Vegetable Handbook. Point out this is a free download and a good source of growing information. Use Control F to bring up Table 2-29 and lead them through this table to give an example of the resources available in this handbook. Ask the group to identify Systems-based practices, Mechanical & Physical Controls, and Natural Enemies for control using the Table 2-29 and Featured Creatures Handout information. Lead a brief discussion on these practices.

System based practice examples: Trap cropping with Hubbard squash, Plant tolerant varieties, sanitation

Mechanical and Physical examples: Insect netting

Natural Enemy examples: Wasp egg parasitoids, fly parasitoid

Point out Table 2-25 and 2-29 in their notebooks rates chemical controls that are effective. Stress reading labels to make sure they can be used. Have them find a few insecticides and biorationals that are effective for squash bug control.

Venom/Scorpion is very effective. Also Pyrethrin is an effective biorational.

Step 3: Determine impact of pest

Growing squash is popular in Georgia. Use page 85-87 of the Southeastern Vegetable Crop Handbook to briefly scan the most prevalent insect pests that affect squash.

Use the information to determine when you should begin scouting and when you should treat.

Ask the group to find the summer squash growing information in their notebooks. Use Control F and search for squash to quickly find pages 85-87 of the Southeastern Vegetable Crop Handbook to briefly scan the most prevalent insects and their control for squash.

Most prevalent insects: Cucumber beetle, Squash vine borer, Aphids, Squash bugs, Spider mites

When to begin scouting: Shortly after plant emergence. Treat every 7-10 days when adults or nymphs appear.

Step 4 and 5: Select strategy that is least expensive and least harmful to the farm environment. Now that you've identified the pest and researched it for a particular crop. Outline your strategy for managing the pest you identified.

Biological Control	Examples: Parasitoids
Chemical Control	Examples: Venom/Scorpion, Pyrethrin
Cultural Control	Examples: Field sanitation, resistant varieties, timing of planting, crop rotations, trap crop
Physical Control	Examples: insect netting, row covers, hand-picking

Which management practice for this pest would you use first on your farm? Rank the management practices from first to last.

1. *Cultural*
2. *Physical*
3. *Biological*
4. *Chemical*

Homework Assignment: Ask the class to watch the Pesticide Safety (10 min-David Berle, Horticulture Dept, University of Georgia) webinar (<http://vimeo.com/155724599>) and bring in a seed packet for the next session discussion on germination, propagation and how many seeds and transplants to order. The webinar link is in their agenda.