Six ‘Invasive’ Pests to Watch for in 2014

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EXTENSION
Solutions in your community
European pepper moth (EPM), *Duponchelia fovealis* Zeller
Host range: EPM is a polyphagous pest with a very wide host range that includes several vegetables like sweet corn, peppers, tomatoes, squash, and strawberries and ornamental plants like azalea, begonia, geranium, and poinsettia. Due to its feeding behavior and preference to infest foliage and plant parts near or below the soil line, crops are more vulnerable to this pest.
Light brown apple moth pheromone lures and Delta traps

The European pepper moth is NOT resistant to any pesticides so far, so most of the Lepidopteran sprays used for control will work, you just need to get the spray to contact the larvae.
Broad mites
Polyphagotarsonemus latus (Banks)
Hosts
The broad mite has a wide host range. Food crops listed as hosts include: apple, cotton, eggplant, fennel, grapes, peach, pear, potato, string or pole beans and tomato

USDA-ARS identified it for the first time on cantaloupe and watermelons in the U.S. in 2006.

Broad mites infest many ornamentals, including African violet, ageratum, azalea, begonia, chrysanthemums, cyclamen, dahlia, gerbera, gloxinia, ivy, jasmine, impatiens, lantana, marigold, peperomia, pittosporum, snapdragon, verbena, and zinnia
Management

While a number of miticides are labeled for control of this pest, insecticidal oils or soaps are usually just as effective and less toxic to the environment.

Miticides: Abamectin, spiromesifen - translaminar/contact and fenpyroximate – contact only

Hot water treatments may be used to control the mites without injuring GH plants. This involves lowering the plant into water held at 110-120° F for 10-15 minutes.
Tomato russet mites
*Aculops lycopersici*
Management

- Sulfur dust or WP
- Abamectin
Myriapoda, Symphyla, Scutigerellidae
*Scutigerella immaculata* (Newport)
Garden symphylan
Garden symphylans, also called garden centipedes, are slender, white arthropods, closely related to insects, about 0.33 inch (8 mm long), with 10 to 12 legs and distinct antennae.

They are fast-moving and live in soil and move up and down in the soil profile in relation to the moisture gradient. After an irrigation they are near the soil surface. As the soil dries, they move deeper. They hide when exposed to light. They occur mainly in soil with high organic matter and especially in organic farms that fertilize with manures.
Good soil which has fissures, micro cavities and earthworm galleries are favorable for its movement.

It has seasonal and daily vertical migrations between the surface and a depth in the soil which may be greater than 3-4 ft.

Population levels in cultivated soil may reach 30 to 200 individuals per square foot.

Spring populations are made up of adults only. Symphylids feed on algae, fungi and mosses; however, at certain periods, they are attracted by seeds and very young roots, when they feed on more mature roots they eat the absorbant hairs.
Most commonly damaged plants include:
Broccoli
Spinach
Beets
Onion
Squash
Cabbage
Crucifers

Less damaged plants include:
Tomato
Pepper
Beans (dry and succulent)
Garden symphylans may damage seedlings before or after emergence and may slow the growth of larger plants.

Damage usually is concentrated in relatively small areas and recurs every season; infestations spread slowly horizontally.

In recent years symphylans have become serious pests of young, transplanted tomatoes in areas of the Midwest and Pennsylvania.
Symphylans can be detected with bait trapping

Use either carrots or potatoes as bait

Cut the bait in half longitudinally and scratch the cut surface just before placing it on the soil to ensure that the surface is moist

Place the bait at a depth where the soil is moist, and cover it with a plastic cup to exclude light and prevent the soil from drying
Use at least a dozen bait traps in the field, in a HT use 4-6.

After 2 to 5 days, examine the cut surface and the soil it was resting on for evidence of symphylans.

If large numbers are detected (more than 20 per bait station), consider preplant fumigation or planting the field to a different crop.
5-10 per shovelful can indicate damage will occur in susceptible crops
Management

• Reduce the amount of undecomposed plant material or manure that is applied to the soil

• **Tillage**: physically kills Symphylans, dries out top 1-3 inches of soil. Tillage also breaks down “roadways” for symphylans to move vertically in the soil. Populations are decreased for 2-3 weeks after tillage

• **Crop Rotation**: Populations decrease the most after a potato crop, decrease after a spring oats cover crop. Decreases after beans.
Management

• Size of plants: Small plants or direct seeded plants are more susceptible than transplants. Example: 4-wk old plants are more susceptible than 12 wk old plants, etc.

• **Increase plant density**

• Infested soil can be treated with an insecticide, but its effect is limited because of the symphylans' ability to migrate deep into the soil.

• Insecticides may help give the plants a chance to establish in a protected zone. Treat for symphylans just before planting. Spot treatments may be adequate.
Kudzu bug
Megacopta cribraria
African Fig Fly

*Zaprionus indianus* Gupta
The African fig fly, or fig fruit fly, *Zaprionus indianus* is originally from Africa but in recent years has been expanding its range.

- It was found in Florida in 2005 and South Carolina in 2007. When present, simultaneous infestation with SWD often occurs.

- In September 2012 it was commonly found in vineyard blocks in Virginia.

- Found since 2012 in VA, PA and MD.
• Found in MD in 2012 and 2013

• Found it in over ripe (rotting) tomato, raspberry and peach

• Hosts are figs, many tropical fruit, white grapes, and ?????

• Not clear whether fig fruit fly can successfully oviposit in intact grapes

• Most hosts are attacked when already injured or rotting, but can attack intact figs still on plant
Questions

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