

Fruit Production and Pest Management

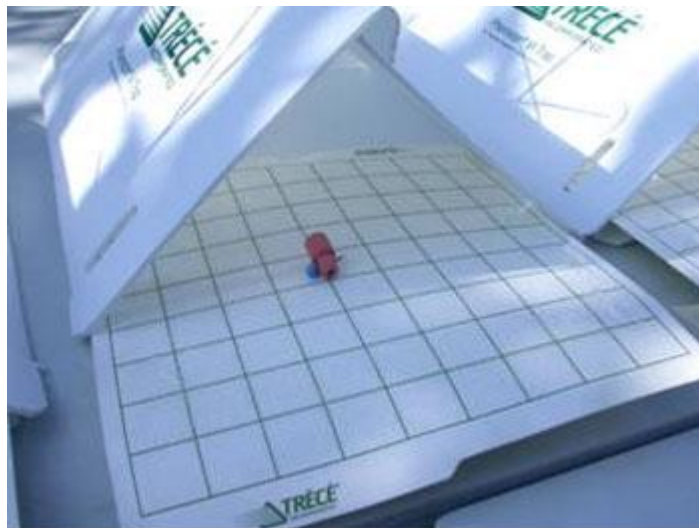
Pheromone Traps for Fruit Insects

It's that time of year again ... time for my annual (or nearly so) reminders about pheromone traps for fruit insects. With a few updates for 2007, here we go ...

For apple, peach, and grape growers, NOW is the time to order pheromone traps for key insects if you've not already done so. (Yes, sooner would have been better, and I always push this message at our winter meetings.) Although traps are available and useful for monitoring many insects of fruit crops, the ones listed in the table that follows are probably the most important for most Illinois fruit growers. Other pests that may be worth monitoring with traps include dogwood borer, spotted tentiform leafminer, redbanded leafroller, and obliquebanded leafroller in apples and peachtree borer in peaches. Contact me if you want more information on these insects.

What kind of traps should I use?

A few companies manufacture traps, and all have a similar range of designs. Trece is still the best known, but Scentry, Suterra, and others are also reliable providers. Over the last few years, the trap design that has become most widely used for fruit insects in general is the large plastic delta trap; Trece sells it as the Pherocon VI trap, and Suterra and Scentry simply call it a large plastic delta trap (LPD). This trap is quick to set up and easy to maintain, because unlike earlier "wing traps," the sticky trapping surface is provided by an exchangeable card that slides in and out quickly and easily. It is MUCH faster to change sticky liners on this trap than it is to change the bottoms of the wing traps we previously used, and when I compared the delta trap with two different wing traps in University of Illinois orchards in 2002 I found no difference in how many codling moths they captured. Since then I've found them to be effective at monitoring all the moth pests listed below. If you bring the trap "shell" indoors at the end of the season, you can expect to get 2 to 3 years use from each trap (while replacing lures and liners as needed).



A Pherocon VI trap (an example of a large plastic delta trap), with the sticky liner partially removed, showing a pheromone lure.

What attracts moths to traps?

For all the moths typically monitored using sticky pheromone traps, the trap must be baited with

a pheromone lure -- usually a small piece of rubber or plastic containing a synthetic blend of chemicals that is very similar to compounds used by female moths to attract males. When traps capture male moths, that serves as an indication that females are also present, and mating and egg-laying are occurring. When you order pheromone traps, you also must order lures for the specific insect(s) you wish to monitor. (Sometimes you may order "kits" that come with a combination of traps and enough extra sticky liners and lures to last the season.) Remember that although you may use the same type of trap to monitor different pests, you must use only a single lure per trap ... it does not work to put lures for codling moth and tufted apple bud moth in the same trap. Depending on the pest species, lures usually last 2 to 8 weeks (suppliers can tell you the effective life of the lures they sell), so you have to order enough lures to last through the whole season.

What about apple maggot?

For apple growers in the northern half of Illinois, monitoring the flight of apple maggot flies also is necessary. Traps for apple maggot flies rely on appearance (especially the color and shape of a bright red apple) and the use of a food odor ("apple volatiles") instead of a pheromone, and they are designed to capture female apple maggot flies ready to lay eggs on fruit. All the major suppliers of insect traps carry these kinds of traps. Growers should order the red spheres, tubes or tubs of stick-um or tanglefoot, and the food lures recommended by the supplier. Apple maggot traps may be used without any food lures; counts are interpreted accordingly.



An apple maggot trap.

How many traps should I use?

There are no precise answers, but in general, for the moths that are pests in Midwest fruit crops, I consider it adequate to use 2 to 3 pheromone traps per pest species per each block of trees or vineyard up to 15 acres in size. Guidelines often recommend at least 3 traps per pest species for any orchard up to 15 acres in size and 1 more trap for every 3 to 5 acres above 15. To monitor 50 acres of trees in 3 or 4 separate blocks, use at least 3 traps per block and at least 9-12 traps total. Always use at least 3 apple maggot traps (red spheres) per block of trees. See the table below regarding placement of traps.

If you have only one relatively small block of trees, you may want to order 3-trap "kits" that suppliers package for each of the major pests. Kits with "standard" lures will include 3 lures per trap, but because the lures for most will have to be replaced every 4 weeks, most Illinois growers will need yet another 2 extra lures per pest species per trap to get through the entire season. Suppliers also sell these extra lures and extra "liners" (the sticky trapping surface) for traps. If you operate an orchard larger than 20 to 30 acres, you'll need more traps, so don't "mess with" 3-trap kits; contact the suppliers and make plans to order supplies in bulk. "Long-life" lures are

available for the codling moth and the Oriental fruit moth (and some other species) ... these lures last 8 weeks between changes and are the best choice for almost all Illinois growers.

Apple growers in southern Illinois ... it has been a few years since we saw some problems with tufted apple bud moth in orchards treated pretty much exclusively with organophosphates. With greater reliance on alternative chemistries in recent years, this pest has not reached outbreak levels in any Illinois orchards in the last 3-4 years (to my knowledge), but I'm including it in the following table because it still warrants attention in some orchards.

<i>Pheromone trapping guidelines</i>		
Crop and pest	When should you use traps?	Where do you hang the traps?
Apples -- all of Illinois Codling moth	Early bloom through harvest	At eye level or higher (upper third of canopy is best), spaced throughout the block, including one somewhere near the upwind edge and one near the downwind edge.
Apples -- south of I-70 Tufted apple bud moth	April 15 through harvest	Same as above for codling moth.
Apples -- north of Springfield Apple maggot	June 1 through harvest	In the outer portion of the canopy of trees on the edge of the block ... VERY visible to adults flying into the block (remove foliage around the sticky red spheres). Hang in border rows or end trees nearest any woods or brush outside the block
Peaches -- Lesser peachtree borer	Bloom or petal fall through harvest	Similar to codling moth, but trap height should not exceed 5 to 6 feet.
Peaches -- Oriental fruit moth	Green tip to pink through harvest	Similar to codling moth, but trap height need not exceed 6 feet.
Grapes -- Grape berry moth	Bloom through harvest	Hang traps on the top trellis wire. Place traps in the outside rows and near ends of rows; concentrate traps on edges near wooded areas.

<i>Suppliers of pheromone traps include:</i>		
Supplier	Address	Phone & Fax
Great Lakes IPM	10220 Church Road Vestaburg, MI 48891 email: glipm@nethawk.com On the web at: http://www.greatlakesipm.com	Ph. 989-268-5593 Ph. 800-235-0285 Fax: 517-268-5311
	P.O. Box 270	Ph. 800-272-7672

Gempler's	Mt. Horeb, WI 53572 On the web at: http://www.gemplers.com/	Fax: 800-551-1128
Phero Tech Inc.	7572 Progress Way Delta, British Columbia, CANADA V4G 1E9 e-mail: info@pherotech.com On the web at: http://www.pherotech.com/	Ph. 604-940-9944 Ph. 800-665-0076 Fax: 604-940-9433
Suterra	213 Southwest Columbia Street Bend, OR 97702 email: agsales@suterra.com On the web at: http://www.suterra.com	Ph. 541-388-3688 Ph. 866-326-6737 Fax: 541-388-3705

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