**Traps for Monitoring Apple Pests in Ohio**

**Two target pests best suited for monitoring by traps in all Ohio apple orchards:**

| *Pest* | *Monitoring period* | *Seasonal needs & Trap placement* | *Expected trends* | *Decision making guidelines* |
|---|---|---|---|---|
| **Codling moth** | bloom (late April) until harvest = about 24 weeks (5 months) | For 3 traps per orchard:<br>• 9 long-life pheromone lures (or 18 standard pheromone lures)<br>• 3 bucket traps (or 3 sticky traps & 30 sticky panels; 10 per trap)<br>Place trap 6-7 feet above ground. | First catch at petal-fall or within 2 weeks of petal-fall.<br>Usually 2 generations per year (peak catch in late May & mid-August) or sometimes 3 generations per year (peak catch in late May, mid-July, & late August). | Traps plus temperature data can help determine best timing of sprays to target larvae emerging from eggs. For first brood larvae, spray 200-250 degree-days (base 50$^{o}$F) after biofix (date of sustained catch of moths), and again in 14 days, plus a third spray if large catches continue. For second brood larvae, spray 1250 degree-days (base 50$^{o}$F) after biofix, and again in 14 days. One or 2 late-summer sprays are needed on late-maturing varieties if traps detect a 3$^{rd}$ generation in Aug. or Sept. |
| **Oriental fruit moth** | silver-tip (late March) until harvest = about 6 months | For 1 trap per orchard:<br>• 4 long-life pheromone lures (or 8 standard pheromone lures)<br>• 1 bucket trap (or 1 sticky trap & 12 sticky panels)<br>Place trap 4 feet above ground. | At least 3 generations per year. First catch as early as late March. | Similar rule to codling moth, except that the degree-day base is 45 degrees F (rather than 50F). First insecticide spray should be at 150-170 cumulative degree-days after biofix. Treatment for second brood is about 1000 degree days after biofix. |

**Three target pests well suited for monitoring by traps in apple blocks with history of specific problem:**

| *Pest* | *Monitoring period* | *Seasonal needs & Trap placement* | *Expected trends* | *Decision making guidelines* |
|---|---|---|---|---|
| **San Jose scale** | early pink-bud stage (mid-April) until late summer = about 5 months | For 1 trap per orchard:<br>• 5 pheromone lures<br>• 20 Pherocon-V traps (vertical sticky cardboard; different than traps for moth pests)<br>Place trap 6-7 feet above ground. | First catch at pink or bloom.<br>Peak catch around bloom or petalfall. 2-3 generations per year. Early peak can be >1000 males per trap per week. Late peaks up to 6000 per week. | Apply insecticide to control crawlers which are expected about 400 degree-days (base 50$^{o}$F) after first catch in traps (about 4-6 weeks after peak flight), or control adult males at time of peak flight. Presence of crawlers can be confirmed by wrapping black electricians tape around branch and looking for yellow crawlers caught on tape. |
| **Dogwood borer** (if burr knots on trunks) | petal-fall (early May) until late summer = about 4 months | For 1 trap per orchard:<br>• 4 pheromone lures<br>• 1 bucket trap (or 1 sticky trap & 8 sticky panels)<br>Place trap 4 feet above ground. | One generation per year.<br>First catch in mid or late May, peak in early July. | Control by trunk application at peak egg hatch; eggs hatch 8-9 days after being laid on trunk. First hatch occurs about 9 days after first trap catch. Peak egg hatch occurs about 20 days after peak catch. |
| **Apple maggot** (especially in northern Ohio) | early June until mid-August = about 2.5 months | For 3 traps per orchard:<br>• 3 red ball traps<br>• 1 can or tube of Tanglefoot<br>• optional: 3 fruit volatile lures (one per trap per year)<br>Place trap 5-6 feet above ground. | First catch in mid-June.<br>One generation per year. | Spray immediately when the following threshold number of apple maggot flies are trapped (average of 3 traps):<br>• 5 flies per trap, if fruit volatile lures are used<br>• 1 fly per trap, if fruit volatile lures are <u>not</u> used<br>Note: these are *cumulative* not per-week catches.<br>10-14 days after spray, start cumulative count again. |

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