

## Plum Curculio

Types of Fruit Targeted: Plums, Apples, Peaches, and to a lesser degree, Cherries  
Doesn't attack pears much.

Most important time to monitor for damage to fruit is from **bloom** until 2 weeks after **petal fall**

### Ideas for organic management

- Plum as a “Trap tree”, to save other trees from damage. Only works if you spray to plum to kill the Curculio, or have chickens under the plum tree, or combine with nematodes.
- Chickens allowed to forage under trees. The chickens will eat the larva inside damaged fruit that falls to the ground. Pigs and/or ducks will also serve the same function.
- From time of petal fall until fruit is nickel-sized: Spread a tarp on the ground around the tree. Shake tree vigorously, collect up fallen fruit and destroy. Do this treatment three times a week until the end of June. (About 3 or 4 weeks)
- Hang a store-bought Granny Smith apple in the tree in early spring to monitor for presence. Plum Curculio adults will bite into fruit to lay their eggs. So get out your magnifying glass to look for damage! (you probably won't see the adults)
- Toads eat Curculio. What can we do to support toad populations?
- Silhouette trap painted black, leaning against the tree trunk. See internet for ideas on how to build. Commercial version is made by AgBio, Inc, and called “Dead Inn Pyramid Trap”.  
[www.agbio-inc.com](http://www.agbio-inc.com)

Sprays:

- **Surround kaolin clay (works for many other pest species as well, by serving as a physical barrier. When you pick the fruit, simply wash the white-colored clay off)**
- ***Beauveria bassiana***. (A bacteria that attacks insects) available from Arbico Organics,

<https://www.arbico-organics.com/category/beauveria-bassiana-beneficial-fungal-insect-control>  
Would need to apply at the time that Curculio larva are dropping from the tree to the ground.

- ***Steinernema riobrave*** (A nematode (a type of microscopic worm) that attacks insects)

<https://www.arbico-organics.com/product/beneficial-nematodes-steinernema-riobrave/organic-lawn-care>

**Also controls Japanese Beetles!!! Similar in application to Beauveria, above.**

## Apple Maggot Flies

- A minor pest in southern states, but more severe from Pennsylvania northwards.
- Red Delicious apple from the store, covered with Tangletrap sticky, and hung in tree. One to six apples per tree, for apples and cherries. Hung mid-June through August. Same hanging directions as the “BioCare” trap, below.
- Or, a synthetic version called a “BioCare” trap can be purchased. A red sphere that looks like a red apple, bisected with a yellow sticky trap. Baited with butyl hexanoate. Hung at shoulder height or higher, 18 inches inside of canopy, nearby to developing apples. Clean and renew sticky every 2 weeks until end of August. Sold by Arbico Organics under the name “BioCare Apple Maggot Trap.”

## **Codling Moth**

Attacks Apples.

- Mating disruption lures – overpowering fragrance confuses males. Sold by Arbico Organics under name “NoMate CM Spirals”.
- Arbico Organics also sells traps, called “BioCare Codling Moth Trap”. Use at a rate of 1 trap per every 2 trees.
- Codling Moth Granulosis virus
- Botanical insecticides, like Neem.
- Pheromone traps to determine first mating  
Spray at 243 degree-days, again at 465 degree-days.  
A degree day is 1 degree above 50 degrees. So 2 days that are 60 degrees, would accumulate 20 degree-days.
- Corrugated cardboard wrapped around base of tree trunk, another layer below first scaffold branches. Put on at time of blossom, check frequently and destroy 3 weeks later. Codling moth seek cover on tree trunks and go into hibernation under bark.
- Bottle traps with molasses and cider vinegar.
- Old-timers hung a kerosene lamp over a pan of sweetened water.

## **Apple Borers**

Attack young trees by chewing and girdling stems. Round-Headed Apple Borer works at ground level, while other borers work higher up.

Look for sap, gummy and sticky mess at ground level, sawdust, reddish-brown poop pellets.

- Paint young trees with diluted white latex paint, to a height of 2 feet.
- Keep grass and debris away from trunks. Mulch with pea gravel 12 inches out from trunk.
- Use a piece of wire or a knife to probe holes and kill grub.
- Use fine mesh screen, 1/8 inch or less, with foam ring at top to keep borers away from trunk.  
Only recommended if you have had borer damage in the past.
- Always dig up dead trees and do an autopsy.
- Once tree gets larger, borers are not a problem.

## **Peach Tree Borer**

Attacks peaches, cherries, plums, apricots, and nectarines.

- Eggs laid in cracks in bark at base of tree. Target any sprays to this zone in late winter/early spring to kill adults that are emerging.
- Diatomaceous Earth mixed into full strength white latex paint, and painted onto trunks helps deter them.
- Synthetic traps available from Arbico Organics.

## **Cherry Fruit Fly**

- Sticky traps hung out late May, to track if they are present and catch a few.
- Paint plastic soda bottle caps bright yellow, coat with sticky. Hang above jars covered in screen mesh, filled with a mixture of equal parts ammonia and water. Clean traps weekly, apply new sticky, fill jars with new ammonia solution.

## **Oriental Fruit Moth**

Attacks shoot tips of peaches. Later in season, can attach peach fruit.

- Molasses – vinegar bottle traps.
- Synthetic lures and traps, available from Arbico Organics.
- Bt – an organic insecticide.

## Other Pests

### Voles

- Chew bark at ground level, girdling and killing young trees. Damage usually happens in winter, to young trees.
- Not to be confused with moles or shrews – which don't bother trees.
- Spiral plastic guards on tree trunks helps. Be sure to remove guards in summer, otherwise they can girdle the trunk too.

### Birds

- Can peck large fruit, and entirely eat small fruit like blueberries and cherries.
- Moving Owl statues, many other types of deterrents.
- Nets keep out 90% of birds. Mockingbirds seem to have a knack for sneaking under nets, but they rarely cause widespread damage.

### Deer

- Extremely destructive
- An 8-foot tall fence is the ONLY proven strategy, but a 5-foot fence is very effective, especially if combined with other scare tactics.
- Electric fence with peanut-butter on aluminum foil gets good results.
- Dogs are an effective deterrent – if they are outside constantly.

### Bears

- Yes, we have bears in Culpeper.
- Break branches while trying to eat fruit.
- Standard-size trees resist breakage better than dwarf trees.
- A big dog in the orchard in harvest season is a good deterrent.

### Hornets

- Major pest of apples, asian pears, and figs.
- Hornet traps work great. Place them out early, a month before fruit is ripe. Be vigilant and refresh traps weekly and possibly biweekly if traps are full.
- A 2 liter soda bottle with one-way trap mechanism. Easy to find online. Trap mechanism goes in side wall of bottle. Bait with juice, soda or sugar water. Will catch many kinds of flies, wasps, bees, and hornets. Regular Honeybees don't seem to be attracted to it.

### Japanese Beetles

- Especially drawn to raspberries (fruit and leaves), cherries (leaves), peaches (leaves), grapes (leaves, does not bother Muscadine Grapes), and a few apple varieties (leaves).
- Milky Spore can be applied to the ground for large-scale applications to kill the grub in the ground.
- Use a bucket of soapy water, collect the beetles in the early morning and let them drown in the bucket.
- Ducks are known to eat the adults that drop to the ground. They may also eat the larva. It would take an enormous number of ducks to control beetles on a 1-acre property.
- Consider “Trap Crops” that are especially attractive to the beetles. These would be sprayed (either organically or not) at regular intervals, to kill the adults.

## Sanitation

- Sterilize pruners between each cut. Bleach or Ethyl Alcohol.
- Prune out and destroy (burn or landfill) diseased branches. Cut 6 inches behind visible damage.
- Removing insect-damaged fruit when you thin the extra fruit.
- Picking up dropped fruit in June. Biweekly. Helps control Apple Maggot Fly, Codling Moth, Plum Curculio.
- Raking up leaves in fall, burn them. Put down lime. Then put down fresh layer of wood chips. Helps control Apple Scab.

## Beneficial Insects and Plants

“Wild” planted garden beds, not manicured grass. Beneficial insects cannot find food or shelter in grass. Avoid chemical pesticides and “heavy” organics like pyrethrins and rotenones. There are thousands of beneficial species, some attack pest insects while others (like our native mason bees and sweat bees) provide pollination.

### **Plants that attract or provide food/shelter for beneficial insects:**

Bee Balm (Monarda)  
Borage  
Chamomile  
Chives  
Echinacea (Coneflower)  
Elderberry  
Lemon Balm  
Marigolds  
Milkweed  
Mint (Peppermint is best)  
Oregano  
Queen Ann's Lace  
Quince  
Rhubarb  
Sunflowers  
Thyme  
Yarrow (Achillea)