PLUM CURCULIO (PCC)

Conotrachelus nenuphar

Description:

Adults:

Dark brown mottled body with short snout that is about 1/3 long as body. Wing covers have four bumps and grayish-white patches.

Eggs:

White elliptical eggs are deposited under the skin of the fruit in a crescent-shaped slit where they are protected as the fruit develops and expands.

Larvae:

Yellowish-white larvae are legless, have a C-shaped body with a brown thoracic shield and brown head. Larvae can be found inside infested fruits.

Pupae:

Pupal stage is spent underground. Whitish or cream in color, approximately 0.24 in (6.4 mm) long, and looks like a mummified adult with appendages free from the body.

Hosts:

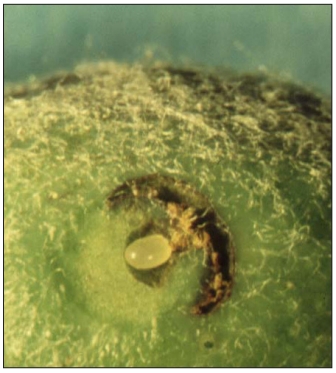
Plums, peaches, apricots, nectarines, cherries, apples, pears, quince and blueberries.

Damage:

- Crescent-shaped scars on fruit that are caused by egg laying activity.
- Feeding injury by adults causes bumps that protrude from the fruit and may appear knobby or scarred at harvest.
- Internal injury is caused by larvae tunneling throughout the fruit. Most damaged fruit will drop to the ground by June.
- Feeding punctures are made by adult beetles in the fall prior to overwintering. Punctures are characterized by small holes in the skin of the fruit and may have a hollowed-out cavity extending into the flesh.

Phenology:

- Annual variations in life cycle depend on climatic conditions.
- Overwinters as adults in protected areas such as woodlands and underneath ground debris or forest leaf litter.
- Northern strain has one generation per year and southern strain has the potential for multiple generations per year.
- Emerges in spring when mean temperatures reach 50°F to 60°F for three to four days, and begin migrating towards trees (orchards) when maximum temperature reaches 70°F for two or more days. They feed on foliage and flowers until small fruits form.
- Second generation larvae complete development and emerge as adults between June and August. They join first generation adults in feeding until the onset of cold weather, at which time individuals from both generations seek out hibernation site.



Left: PCC adult (source: Peter Jentsch), Center: fruit cut open to reveal PCC egg (source: Alan Eaton), and Right: PCC larva (source: NY State Ag Experiment Station).

Left: crescent-shaped oviposition scars on fruit (source: Cornell Tree Fruit IPM). Right: late season fruit scarring by plum curculio (source: Ric Bessin, UK Entomology).

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PLUM CURCULIO (PCC), *Conotrachelus nenuphar*

Life Stages/Degree-Days:

Life Stage	*Average D°F*	*Average D°C*
Adults	Spring when temperatures exceed 60°F or 15.5°C Late July to hibernation (temperatures below 60°F or 15.5°C)	In orchard adjacent to hedgerow. Feeding wounds are frequently the first sign of adult presence
Eggs	Petal fall and 30 days thereafter	On developing fruit within crescent-shaped oviposition wounds
Larvae	Early June through mid-July	Within injured, dropped fruit
Pupae	Mid-July through mid-August	In soil within 1 in. (25 mm) of surface

Lure Type and Maintenance:

- PHEROCON® Plum Essence lure.
- Replace lures every 4 weeks.

Lure Storage:

- Store in unopened factory sealed packages in a cool place (< 74° F or 24° C maximum) for short periods until used or refrigerate longer term.
- Refrigerate or freeze unopened packages to carry over for annual storage.

Trap Design:

- Circle trunk trap or pyramid trap.

Placement Time:

- Crucial period for monitoring is during the first few days of warm weather following petal fall, when maximum temperatures remain around 70° F (21° C).
- Between bloom and two weeks following petal fall, prior to fruit set.

Placement Pattern:

- Place traps in critical areas such as border rows of an orchard.

Trap Density:

Number of traps	*Acres*	*Hectares*
Minimum of 2	< 10	< 4
1 per 10 acres (4 hectares)	11-100	4-40
Minimum of 2	> 100	> 40

Trap Maintenance:

- Check traps weekly.
- Remove captured insects when checking traps.

Recommendations:

Apples:

- Usually two or three sprays are directed at PCC.
- First application at petal fall, second application 7-10 days following petal fall and third application 10-14 days after second application.

Peaches:

- Usually two or three sprays are directed at PCC.
- First application at petal fall, second application at shuck split and third application 10-14 days following second application.
- Second generation PCC may infest mid- and late season peach cultivars in infested orchards. It may be necessary to apply insecticide at six, four, and two weeks before harvest.

Source: Recommendations and certain other sections were sourced from Cornell Tree Fruit IPM for plum curculio, University of Kentucky Cooperative Extension, University of New Hampshire Extension, and Michigan State University IPM for Plum curculio.

Note, always:

- Use only one lure per trap.
- Count and record captures as recommended.
- Change trap as needed.
- Discard lures in trash far from the area of use and remove trash afterwards.
- Follow recommendations.
- Contact local extension authorities and consultants for regional advice.

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