



It's Happening Right In Your Backyard.

Codling moth is the number one pest of the tree fruit industry in B.C. interior valleys. To control it, fruit growers have traditionally applied large amounts of pesticides each year. But the Okanagan-Kootenay Sterile Insect Release Program is working hard to change that.

In 1994, the SIR Program began building alternatives for codling moth management in our fruit growing regions. Today, we coordinate control methods such as sterile moth release, sanitation, mating disruption and minimal pesticide application in orchards, public lands, First Nations lands, as well as "right in your backyard".

With the help and cooperation of growers and property owners, we have succeeded in reducing codling moth populations to undetectable levels in most commercial orchards and backyards of the Similkameen and South Okanagan Valleys. In urban areas where options are limited, monitoring and action to reduce populations stop the spread of codling moth into "clean" properties

and orchards. Thousands of infested or unwanted trees have been removed in support of local growers and the SIR Program. Through these efforts, over 90% of all orchards and residential properties in Zone 1 are now free of wild codling moth, and organophosphate pesticide use has been cut in half.

With continued effort over the next five years, comparable results will be achieved in orchards and surrounding areas in Zones 2 and 3. This will allow us to secure the benefits of reduced codling moth populations throughout the Okanagan, Similkameen, Creston and Shuswap Valleys.

An area-wide control program such as ours minimizes the use of pesticide sprays, and that means a cleaner, healthier environment for all residents. However, everyone must do their part. Property owners who grow codling moth host trees in commercial fruit growing regions must maintain their trees free of codling moth each season.

How Can You Help?

Step 1: Know The SIR Policies in Your Area.

The SIR treatment area is broken into three zones:

Zone 1: the South Okanagan, Similkameen, and Creston Valleys

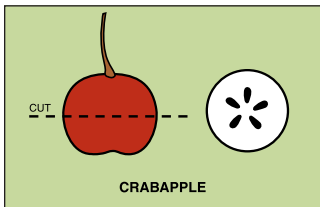
Zone 2: the Central Okanagan Valley

Zone 3: the North Okanagan and Shuswap Valleys

In Zones 1 and 2 homeowners must maintain their trees free of codling moth to comply with SIR policies. In Zone 3 SIR staff will begin cleanup activities and introduce SIR policies to the general public in 2000.

Step 2: Know Your Host Trees.

Please ensure you correctly identify all apple, pear, crabapple and quince trees on your property. Ornamental or flowering crabapple trees can be difficult to identify and may be confused with flowering plum, hawthorn or other trees. One of the easiest ways to confirm whether or not your tree is a crabapple is to cut the fruit in half to see if the seeds form a star-shaped pattern (see drawing). The fruit from plum and hawthorn trees do not have this characteristic pattern. If in doubt, call us to have one of our monitors stop by and assist you.



If cut in half, the seeds of a crabapple will form a star-shaped pattern.

The Crabapple Problem.

Crabapples have proven to be the biggest problem in urban areas, for the following reasons:

- All crabapples, even ornamental varieties, are hosts of codling moth.

- Crabapples are frequently misidentified, and therefore are not monitored for codling moth.
- Codling moth infestations are extremely difficult to detect on crabapples and impossible to control by removing only infested fruit.
- The application of pesticides is often unsuccessful in controlling codling moth on crabapples - even when carried out by experienced professionals.

Step 3: Know How To Identify Codling Moth Injury.



Codling moth injury.

Look for damage anywhere on the skin surface and at the calyx end (opposite stem end) of the fruit. As the larvae feed and develop inside the fruit they push crumbly brown frass, or excrement, from entry holes. Codling moth larvae attack only fruit, and do not feed on leaves.

Don't Be Fooled!

Codling moth larvae feed on the fruit of host trees (apples, pears, crabapples and quince). They do not build webs. What you see at the right is not codling moth, but an infestation of another common pest, fall webworm.



THIS IS FALL WEBWORM, NOT CODLING MOTH!

Step 4: Know Your Options.

Option #1: Remove All Fruit.

The preferred method of controlling codling moth is to remove all host fruit (apples, pears, crabapples and quince) by June 30. This option is recommended for trees with a history of codling moth infestation, as well as for trees close to apple and pear orchards.

Fruit removal is the preferred method of control because it is 100% effective. Without fruit to feed on, codling moth larvae cannot develop. Once your trees are stripped, do not compost the fruit unless you are sure no codling moth larvae are inside. Always crush the fruit first, or submerge it in water for several days to be sure any larvae are destroyed before composting.

**50% OFF
REPLACEMENT
APPLES & PEARS**

Homeowners who remove the fruit from all their host trees by June 30 will receive a 50% discount on up to 150 lbs. of apples and pears, as available at local packing-houses. Call us for details.

Option #2: Remove Your Tree.

Consider removing apple, pear, crabapple or quince trees entirely. This is encouraged for people who do not want to maintain their trees, and for ornamental crabapples.

Eliminating codling moth on flowering crabapples cannot usually be achieved with pesticides alone, and stripping fruit is often impossible. There are many excellent alternatives to codling moth host trees, including flowering trees that are well suited to our climate. If you are unable to properly maintain your trees, support commercial fruit growers by removing all your hosts and replanting with ornamental trees that will not adversely impact growers.

**GIFT
Certificate**

The SIR Program, in cooperation with participating retailers, offer homeowners who remove a host tree, a gift certificate that can be used towards the purchase of plant material, merchandise or fruit

Option #3: Maintain Your Trees Codling Moth Free.

Those who have only a few trees or whose trees are small may choose to remove only infested fruit. This is acceptable for trees with little or no codling moth infestation in the past. However, property owners must inspect all fruit on their host trees and remove and dispose of infested fruit at least once a week for the growing season.

Do not leave infested fruit on the ground as larvae can complete their development in fallen fruit. All fruit, including windfalls, should be thoroughly crushed, submerged in water for several days, or sealed in plastic bags and disposed of. Do not compost fruit unless all larvae have been destroyed. Failure to maintain the fruit moth free may result in a posting for complete fruit removal at the owner's expense. Homeowners must

therefore be confident they can recognize codling moth damage, even in its earliest stage. Implementing the following controls will minimize codling moth infestations.

Chemical Control of Codling Moth.

Pesticide application may enhance control of codling moth. Homeowners planning to use chemicals are encouraged to hire a professional pest control company to implement a regular spray program.

Repeat applications are required throughout the season in order to maintain coverage, particularly in areas of high moth populations. Timing of spray applications is critical. Generally, the first spray should be applied 3 weeks after petal fall. Even when applications are well timed they are seldom 100% effective, and must be combined with regular inspections of the fruit.

Pesticide applications and removal of infested fruit are not recommended for ornamental crabapple trees. **Instead, property owners with crabapples are encouraged to consider tree removal or removal of all of the fruit in the spring.**

Organic Control of Codling Moth.

Few stand-alone organic control methods are available to the home gardener. Integrating a combination of techniques will yield the best results.

Good garden sanitation is the key to maximizing control. Regularly inspect for and remove infested fruit, dispose of all windfalls, harvest all fruit in the fall, scrape loose bark from the trunk and remove debris and leaf litter from under the tree. Any wooden structures such as woodpiles, compost bins and sheds should be located away from your trees. Do not bring in firewood cut from host trees from other areas, as the bark may shelter mature larvae.

Some control may be achieved by applying and removing cardboard bands to the trunk on a ten-day rotation during the growing season. Thinning the canopy, reducing the height of the tree, and thinning fruit to one per cluster will also help. Occasionally people employ bagging fruit and screening trees with some success.

For additional information on controlling codling moth, please contact SIR staff.



A mature codling moth larva or "the worm in the apple".

For further information or assistance...

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