

# CYD-X<sup>®</sup> HP

BIOLOGICAL INSECTICIDE

A NATURALLY OCCURRING VIRUS  
THAT INFECTS AND KILLS LARVAE  
OF THE CODLING MOTH.



## PRODUCT HIGHLIGHTS

Not harmful to beneficial insects, fish, wildlife, livestock, workers, or the food supply.

Provides better population control of codling moths at lower rates than competitive products.

Easily integrates with existing insecticide programs in reducing populations, increasing effectiveness, and managing resistance.

Can be tank mixed with fungicides, foliar nutrients, and insecticides.

Has a 4 hour REI, 0 day PHI, and is exempt from residue tolerances.



Always carefully read and follow label instructions.

**CERTIS USA**  
Leading Biopesticides ●●●

1.800.250.5024 [www.CertisUSA.com](http://www.CertisUSA.com)

## HOW IT WORKS

CYD-X® HP contains *Cydia pomonella* granulovirus, or CpGV, naturally microencapsulated within protein occlusion bodies (OB). OBs must be ingested by a codling moth larva to be effective. The highly alkaline environment of the larval digestive tract dissolves the OB, releasing the virus to infect the cells lining the larval gut.



Photo: BBA, Darmstadt

Granulovirus OBs

- 1 Once inside the host cell, the viral DNA "hijacks" the replication mechanisms within the nucleus causing it to replicate more virus. Within a few days the infected larva stops feeding, becoming sluggish and discolored.
- 2 Upon death the larva "melts", disintegrating to release the liquefied remains of its internal organs, containing billions of new virus OBs.
- 3 The OBs released from virus-killed larvae are capable of initiating new infections if ingested by other codling moth larva feeding at that site or wherever the OBs have been deposited by raindrops, gravity, or spraying CYD-X HP.

## HOW TO APPLY

CYD-X HP should be applied in sufficient volume of water to obtain thorough coverage of the orchard canopy without excessive runoff, which could carry the virus off the tree. Actual application volume will depend on the type of spray equipment used, but concentrated sprays are usually more effective for applying CYD-X HP than diluted sprays.

### TANK MIXING

Water used for mixing the spray should be at or near neutral pH (7) before adding CYD-X HP. Highly alkaline conditions (pH > 9) will prematurely degrade the protein occlusion body, reducing bioactivity and stability of the virus. Buffer the water in the spray tank if pH is above 9 or below 5, or if it contains materials such as lime sulfur or foliar fertilizers that may create pH extremes.

Spray CYD-X HP as soon as possible after mixing. Do not delay more than a few hours between mixing and spraying, especially if pH is not neutral. Use higher label rates of CYD-X HP if tank mixing with copper fungicides cannot be avoided.

### TIMING & BEST PRACTICES

CYD-X HP sprays should be timed so that young larvae will become contaminated with the virus as they search for feeding sites. If using temperature models to predict codling moth development:

- Initial spray against the first larval generation should be applied around 250 degree days after codling moth biofix, targeting 3-5% egg hatch.
- Second application should target peak egg hatch.

Otherwise, apply CYD-X HP in the first and second cover sprays.

If targeting the second generation, start at approximately 1100-1200 DD (4th or 5th cover sprays, depending on weather).

**This is a best practices statement as it relates to organic growers:**

Make at least two (2) applications of CYD-X® HP per codling moth larval generation. Target small larvae early in their life cycle. Repeat as necessary to maintain control. CYD-X® HP breaks down under direct exposure to sunlight. If codling moth eggs are hatching **reapply after 7-8 sunny days**.

### RECOMMENDED RATE

conventional (0.5fl oz/a)  
organic systems (1.5fl oz/a)

### PHI/REI

4 hr REI; 0 day PHI



### ACTIVE INGREDIENT

*Cydia pomonella* granulovirus

### PEST CONTROLLED

Codling moth

### MAIN CROPS

Apples  
Pears  
Plums  
Walnuts

### USE WITH OTHER TREATMENTS

CYD-X HP can be used in combination with codling moth mating disruption as a means of overall population management.

### STORAGE

Bioactivity of CYD-X® HP may decrease if exposed to temperatures above 86° F for more than 3 months. For best results, keep the product refrigerated or frozen when not in use.

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