

Overwintering Pests Technical Guide

STOPPING WINTER PEST INVASIONS IN HOMES!

Insect Winter Survival Strategies

Insects are well adapted to survive varying climates, wide shifts in temperature, and periods of adverse environmental conditions. Insects use both behavioral and physiological adaptations to combat freezing temperatures and increase their chances of overwinter survival.

Many insects maintain a low level of activity during winter months while others enter diapause, a type of dormancy. Freeze susceptible or freeze avoidant insects produce many antifreeze compounds to reduce the lethal freezing temperature of their bodies, such as alcohols, sugars and ethylene glycol (the same compound found in car antifreeze). They exhibit behavioral shifts and seek out dry, protected overwintering areas such as behind tree bark, burrowing into the ground and inside refuse piles, etc. Freeze tolerant insects do not freeze entirely, but instead internal fluids freeze which draws moisture out of living cells to reduce their lethal freezing temperature. Insects are predominantly freeze avoidant in cool to mildly cold areas, and freeze tolerant in really cold areas.

Insects aid in winter survival through partial dehydration and reduced feeding, which reduces the chances that excess water within their cells or guts will freeze. Some insects survive winter at a specific stage of growth that is more protected from the elements, such as eggs in a protective egg sac or pupae encased in a hard cocoon, which do not require food or water.

Why Are Overwintering Insects Attracted To Homes?

Insects are attracted to homes because bricks, wood siding, landscaping timbers, mulch beds and wood piles imitate the natural areas they seek out to avoid freezing. Lights, warm surfaces and warm air currents coming from homes are also highly attractive to many insects late in the fall.

Overwintering Pest Management Involves a 3 Part Solution:

1) Inspection & Pest Proofing

Perform a thorough inspection to determine where insects may enter the home and where they may overwinter once inside the structure. A large percentage of insects enter through areas of easy access; overhang vents, loose chimney flashing, missing sealant, missing or worn doors seals and window screens, cracks in the foundation, and openings around utility and electrical lines. If feasible, seal any cracks, gaps or holes found during the inspection to prevent entry.

- Insects generally travel up. Start your inspections and treatments by standing at the foundation and looking up.
- Insects seek out areas on the warmest side of the house (the side receiving the most sunlight) and find cracks and crevices with warm air currents to enter the structure. An IR (infrared) camera or thermometer may be useful to find warmer areas.
- Most overwintering insects are attracted to light, so reducing exterior lights and reducing light transmission from interior lights will greatly aid in reducing unwanted insect guests.
- Provide the homeowner with a list of maintenance items that can further protect their home, including cutting back vegetation to 1-2 feet from the exterior, keeping firewood at least 20 feet from the house and elevated if possible, repairing/replacing window screens, door seals, etc.

2) Exterior Treatments: Repelling Insects

During mid to late fall, exterior service should be performed with a repellent insecticide. If pest proofing is planned, all cracks and crevices should be treated prior to sealing, in case insects have already started to invade. EcoVia EC is a repellent, highly effective broad spectrum botanical insecticide without pyrethroid label restrictions. Micro-encapsulated pyrethroids such as LambdaStar UltraCap or FenvaStar EcoCap will provide extended residual. Note pyrethroid label restrictions. The greatest longevity and strongest repellency is obtained when tank mixing EcoVia EC at 1 oz/gal with a microcap pyrethroid. Another option is to apply EcoVia WD, a versatile botanical wettable dust insecticide without pyrethroid label restrictions. Apply as a dust in cracks and crevices and as a liquid suspension on exterior surfaces. Apply liquid around the foundation and any areas where overwintering pests congregate or stage along the structure. Like other wettable powders and water-dispersible granules, a light film may be visible after the spray dries. For severe infestations, LambdaStar UltraCap, a microencapsulated lambda-cyhalothrin pesticide, can be used to gain fast control of the infestation.

To control overwintering pests before they enter the structure, treat exterior surfaces of buildings, foundations and the band of soil or other substrate around the structure at the first sign of pest movement into structures. Pay special attention to window frames, eaves, cracks and crevices, porches, decks, gazebos, patios, carports, garages, and other areas where pests are active. Be sure to find and treat areas such as false shutters, window wells, underneath siding, around exterior light fixtures, and underneath dense bushes or shrubs.

To control cluster flies, it is important to find areas where they land and rest prior to entering the structure. Focus treatments on the upper levels of the home. Treat any resting/staging areas with a tank mix of FenvaStar EcoCap and EcoVia EC (1 oz/gal of each) for ultimate repellency and killing efficacy. If flies have entered the structure apply EcoVia WD or CimeXa insecticide dust in cracks, crevices and voids for a rapid kill and protection against further infestation. Apply CimeXa as a liquid suspension around windows and other interior areas where flies congregate. Apply LambdaStar Ultra Cap when populations are excessive.

3) Interior Treatments: Overwinter Control

Once insects enter diapause, their reduced metabolism and restricted movements limit contact with pesticides making control more difficult.

CimeXa is an excellent product for overwinter killing on the interior of structures. CimeXa is an odorless, non-repellent, amorphous silica. Insects do not avoid CimeXa and will continue to reside in treated areas. Insects that contact CimeXa will die even if they do not move over the winter months due to rapid dehydration.

- Apply interior treatments of CimeXa in attics near eaves and overhangs.
- Apply CimeXa as a dust or liquid suspension (4 oz/gal) in areas where the floor joist, rim joist and sill plate meet, under or behind any exposed insulation, around garage doors, etc. Note CimeXa will leave a fine white film of dust once the liquid dries.
- On homes with exterior vinyl, steel, or aluminum siding, apply CimeXa under siding through any accessible trim pieces or overlapped siding using a handheld or electric duster.

Rockwell Labs: Product Application Rates

EcoVia EC	1-8oz per gallon per 1000 sq ft (Use higher rates for heavier infestations)
EcoVia WD (as a dust)	2 oz per 100 sq ft
EcoVia WD (in liquid suspension)	1-2 cups per gallon per 1000 sq ft
Fenvastar EcoCap	1-2 oz per gallon per 1000 sq ft
Lambda Star UltraCap	0.2-0.4 oz per gallon per 1000 sq ft (0.8 oz per gallon for heavy infestations)
CimeXa Insecticide Dust (as a dust)	2 oz per 100 sq ft
CimeXa Insecticide Dust (in liquid suspension)	4-6 oz per gallon per 1000 sq ft

When combining EcoVia EC and FenvaStar EcoCap, follow the label with the highest degree of application restrictions.

Following these prevention tips and pest control measures will help to limit insect access to structures, deter pests from entering structures, and ensure that your client's home is the last home they will ever invade if they dare to cross the line.

Most Common Overwintering Pests



Boxelder Bugs

During the fall, boxelder bugs become a major nuisance as they congregate and enter homes by the thousands. Boxelder bugs primarily crawl into structures from the ground level but also fly to higher elevations. Their primary route of entry includes gaps in soffits and chimneys, electrical wiring cutouts, garage doors, poorly sealed windows, and especially underneath siding and trim pieces along siding. They will congregate in warm places in a home. Although Boxelder bugs enter a state of diapause, they can quickly become active even in the dead of winter on mildly warm days.



Asian Lady Beetles

Asian lady beetles are native to eastern Asia and considered an invasive species in the US that is an increasing threat to native species. Asian lady beetles produce an unpleasant odor when frightened or crushed and have a tendency to stain surfaces. They have also been known to bite humans. Asian lady beetles enter homes in winter months by the thousands through every imaginable crack, crevice, and opening, and gather in warm places once inside.



Stink Bugs

Stink bugs are pests of fruits and vegetables, which use their piercing sucking mouthparts to damage crops. Stink bugs such as the brown marmorated stink bug are highly attracted to light. External and interior lights should be reduced during times of heavy stink bug movement. They start the search for overwintering in late summer and can become a severe nuisance inside homes. They will congregate in warm places once inside a home. Stink bugs are difficult to control due to their size and large numbers.



Cluster Flies

Cluster flies are strictly parasites of earthworms and do not present any known human health hazards. These slow moving flies become pests as they hatch in late summer and early fall. Cluster flies may be present in very large numbers and are difficult to eradicate once inside the structure. These flies are often located in areas that are difficult to access for treatment such as attics, wall and roof cavities, window frames and soffits. Cluster flies are especially prevalent in homes with multiple stories, attic spaces with windows, and gaps around windows, doors, and chimneys.

Always read and follow directions.

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