

## **WHERE DO “BUGS” GO IN THE WINTER?**

Where do bugs go in the winter? How do they endure the cold and live till spring? Doesn't anything kill these things? These are the kinds of questions you may be wondering when you're wiping ants off your kitchen countertop or spraying wasps that have accumulated in your window screen during a warm spell in the winter.

For many insects, changes in temperature are a matter of life and death. Some have adapted to endure temperature extremes as the season grows cold; while others have developed instinctual strategies to keep their species thriving when the weather takes its toll on an individual bug. Whether they sneak inside your house or have a different way to keep warm; insects are survivors and understanding their cold tolerance levels can help your control efforts .

When seasons change from summer to fall, it is noticeable that the change in temperature affects insects in some way, but how? And do different insects react to cold temperatures in different ways? Let's explore.

### **Migration/ Let's go South**

There are some insects that go to warmer climates as the winter season approaches. Perhaps we are most familiar with is the Monarch butterfly. Did you know they fly up to 2,000 miles to spend their winter in Mexico? There are many other butterflies and moths that migrate such as the Painted lady butterfly, and the Black cutworm moth. The Green darner dragonfly also migrates as well.

### **Colonies:**

Honey bees huddle together as the temperatures drop. They use the clustering of bodies to keep themselves warm. Most of these insects only care about one thing when cold weather strikes – protecting their queens.

Ladybug beetles gather in protected places – under rocks or leaf litter or in hedge rows- during the cold spells. Ants head below the frost line where their large numbers and stored food keep them comfortable until springtime arrives.

### **Please..... let me come inside!**

Some insects like to seek shelter in our warm cozy homes when cold weather approaches. In the fall our homes can be invaded by the Asian multicolored lady beetles, box elder bugs, and the dreaded brown marmorated stink bug. They typically do not cause any damage to the indoors, but they can cause a foul smelling substance when they are removed. They like to seek out quiet places in your home including your attic, crawl spaces, or wall voids. Then emerge during warm spells.

House flies rarely survive the winter unless they are inside and have food sources. Many people confuse cluster flies for the more common house fly. Cluster flies overwinter in a protected location such as a wall void in your home, and emerge on warm days. They are often slow-moving and lethargic. Those are the ones you see buzzing around the lights or windows.

Most wasps die in the fall, but a few , the newly mated overwintering queens, will move into protected spots to ride out the winter. In the spring, these queens will emerge to start a new nest. they can hide out in wall voids, or in the attic, where they go dormant until the spring.

Spiders don't come inside because of freezing temperatures. The ones you see in your house have been there all year long! These spiders occupy your home thanks to egg sacs that are involuntarily brought into your home. Normally, they avoid you. In fact, those spiders you do see are usually males looking for mates. There are some outdoor spiders that are cold-tolerant and hide from predators before going dormant through the winter. A spider variety such as the garden orb weavers only live one season. They will die in winter, leaving behind their egg sac for the next season.

### **When it gets cold, rest! Diapause**

Diapause is a long-term state of suspension. Diapause synchronizes the insect's life cycle with seasonal changes in its environment, including winter conditions. A few examples of insects that rest to continue the life cycle: Praying mantises survive the winter as the brown and spongy egg cases that are found in many bushes; they then emerge in the spring. Some other examples of insects that spend the winter in immature stages are the eggs of the bagworm. The eggs hang out inside a spindle shaped bag found on a variety of trees and plants. The Woolly bear caterpillar curls up in thick layers of leaf litter for winter. In the spring when they emerge, they spin their cocoons. Black swallowtails spend winter as chrysalis. When warm weather returns they emerge as butterflies. Mourning cloak butterflies hibernate as adults for the winter. They hide themselves behind the loose bark or in tree cavities. Cicadas and June beetles survive as larvae underground.

The lifespan of a male mosquito is no longer than 10 days, as it dies after mating. So males never make it past the fall. The female mosquitoes spend the colder months inactive in protected places, such as hollow logs or animal

burrows. It is fair to say the mosquito enters a period of dormancy, similar to a bear or squirrel hibernating for the winter.

### **When it gets cold, lower your freezing point. (Antifreeze)**

Many insects get ready for the cold by making their own antifreeze.

Throughout the fall some insects manufacture glycerol that is found in their circulatory system. Glycerol gives the insect body super cooling ability, allowing body fluids to drop below freezing points without causing ice damage. This makes insects more cold-tolerant, and protects tissues and cells from damage during icy conditions in the environment. Glycerol levels drop when spring arrives. Some insects, like the European corn borer, have managed to annoy farmers and intrigue entomologists by finding ways to live above ground in the winter. This corn pest boasts an extreme tolerance for cold, even more so than hibernating species. Studies have found that borer larvae can even endure being super cooled to -40 degrees F. The borer balls up within corn stalks or corn cobs, and is able to survive even when the water inside its body (though not within its cells) freezes.

Insects, like us, are wrapping up their outdoor lifestyles and heading indoors or going off to a warmer climate. As we nestle in, stocking up on hearty soups, richer vegetables and firewood, insects are also taking steps to survive the elements.

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