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For more information, contact James Coover
Crop Production Agent, Wildcat Extension District
jcoover@ksu.edu, (620) 724-8233

Where the Bugs Sleep During Winter

Have you ever thought it, just where all the bugs go during the winter? All the ladybugs are happily hibernating in my attic, but what about all the others? Turns out bugs have a number of different methods of survival to get through even the coldest of winter months. In this article, we will focus on the annoying ones and the pretty ones that people tend to ask about and notice the most; flies, wasps, ticks, mosquitoes, butterflies, and moths.

There are a lot of different types of flies, house flies, those great big slow flies, the shiny green flies, and for you cattle people, face flies and stable flies. As the name suggests, most house flies spend much of winter in people's houses. You might not see them because they hide in the attic, in cracks, and under the siding, and then go into a state of hibernation. Out in pasture, they find places to hide as well. Anthony Zukoff, K-State Extension Entomologist, states "Adult flies migrate into Kansas every spring to begin reproducing. The vast majority of stable flies die once winter hits; however, it is possible for some stable flies to overwinter as maggots by burrowing deep into piles of manure." Flies, like lots of insects that overwinter as adults, produce a type of antifreeze called glycol in their cells. Even if they freeze, they can thaw out again and survive. Wasps can be pretty similar to flies, except for one caveat. While the queen wasps survive during the winter by hibernating and hiding in houses, all the less important wasps die off. This includes the workers, the males, and some of the less important queens. Some more solitary wasp species, like the mud dauber, overwinter as full-grown larvae in their mud nests.

While some mosquito species can overwinter as adults, our most common ones survive only as eggs. Two new common invasive species, the Asian Tiger mosquito (*Aedes albopictus*) and the Yellow Fever mosquito (*Aedes aegypti*), both overwinter as eggs in wet areas. Our common house mosquito (*Culex tarsalis*) can overwinter as mated females hiding in cellars, wells, or other places that don't get too cold during the winter.

Ticks are especially capable of surviving winter. In fact, in this area, they don't even stay dormant for long. Anytime temperatures are above forty degrees, ticks can be out hunting for their next meal. During the coldest periods, they fill their cells with glycol antifreeze and hide in leaf litter. It has to get below 10 degrees before they start to die off, and some will survive even as temperatures get below zero. Of course, that's not temperatures at the weather station, but where they are in the forest and tall grasses, hiding under leaves and against the earth. These areas are much better protected from the cold.

Sometimes people will ask if an incredible cold period during winter will have the ‘silver lining,’ reducing bug populations, usually referring to ticks, flies, and mosquitos. The answer...is no. “I get asked a lot when we have extremely cold winters if that means there will be fewer insects next year. That usually is not the case. The insects that overwinter are designed to survive even extreme weather. A few may die if they are not in the most suitable locations, but a majority will be just fine,” says Zukoff. They are hiding in our houses, under the ground, and have powerful physical capabilities to survive the cold. Really mild winters that cycle cold and warm again are more likely to catch some insects off guard and unprotected. I will say that the two invasive more topical mosquitos mentioned earlier, the Asian Tiger and Yellow Fever mosquito can be reduced by our coldest temperatures, but it is not slowing them down much. As our winters get warmer, they are spreading farther north quickly.

Many of our more colorful insects, butterflies and moths, survive by overwintering in cocoons (moths) or chrysalis (butterflies). Chrysalis can usually be found hanging on patches of grasses and weeds. Cocoons are often hiding under leaves or even underground. There are also a great number of species that survive by migration. The Monarch is the most well-known, spending winters in Mexico before flying back in multiple generations in spring, but plenty of other species, like the common Painted Lady butterfly can move hundreds of miles between generations as well. Some species, like the black cutworm that feeds on wheat during the winter and young corn plants in the spring, live as larvae here in winter and feed anytime it is above freezing. They do the opposite of the summer migrators and migrate away during the hot summer months.

Even in the coldest of winter months, all the bugs are out there, simply hiding and waiting for spring. If you have any entomology-related questions, please give us a call at your local extension office.

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