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A Cold Winter Means Fewer Insects, Right?

AGRI-VIEWS

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There is a long held belief that a good hard winter is essential to killing overwintering insects, thereby reducing the number of insects that will be present to bother us the following spring and summer. While the theory sounds good and to a limited extent is true, in reality it just doesn't hold up. Sorry!

How insects survive, so they are around from one year to the next, is complex and fascinating. Some do overwinter as adults. This would include species like box elder bugs, lady beetles and mosquitoes, to name a few. Other insects overwinter as a pupae or a cocoon such as many butterflies and moths and many beetle species. Others, like the wheel bug and grasshoppers, overwinter as eggs.

Amazingly, some species can only overwinter in warmer climates to the south. They repopulate by moving back in as winged adults once the weather warms in the spring or even summer. Monarch butterflies are a classic example. They migrate south in the fall, overwintering in remote mountain areas of Mexico, and fly back north in the spring, some as far north as Canada. Several species of dragonflies also migrate south. Several aphid species don't migrate, but those that are this far north freeze out over winter and have to fly or be blown back in from southern areas. How quick these species repopulate in the spring depends on how far south the cold weather killed them back the previous winter.

Species that overwinter as eggs are usually very winter hardy. The eggs exist in tough shells, often in egg clusters. Grasshopper eggs are laid in the ground and if the ground is undisturbed, they can freeze over winter and still hatch out just fine. We know that fall tillage, that breaks up these egg cases and exposes them to weather and predators, can be effective in reducing their population. Praying mantids lay very tough and resilient egg cases on tree bark, sides of buildings, almost anywhere that they can. If left alone, these will survive just fine to hatch in spring. An early warm spell can trigger these eggs to start to hatch earlier than normal thereby making the eggs or young insects very vulnerable to a late cold snap.

Likewise, insects that overwinter as a cocoon or pupae are also very tough. They have excellent internal antifreeze and seem to come through our winters in excellent shape. Insects that are designed to overwinter in our climates aren't really negatively affected by a long cold winter. They go dormant, they stay dormant, they come out of dormancy, or emerge from the pupae, and are ready to go.

Where these insects can run into trouble is when we have a variable winter. Regular warm ups, which have been few this winter, cause the insects to start to come out of hibernation. This uses up body food reserves. When it cools back down, they go back into hibernation. Then it warms up again and they start to come out of hibernation, using up even more food reserves. If this warming and cooling continues through several cycles, the insects can use up all their food reserves and ultimately die before it warms up for good in the spring. It doesn't appear that this is going to happen this year!

A cold winter is a good thing in several ways. It does insure that insects that shouldn't over winter here, don't. But unfortunately, a long cold winter doesn't usually reduce insect populations as much as we wish it would.

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