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On Mosquito Control - by Nancy Tatum

Summer time in Indiana and mosquitos – an all too familiar and irksome couplet. Not surprising, then, that a number of companies in Indiana have decided to go into the business of spraying yards with pesticides to get rid of them. Likely it's not just the mosquitos that are dying, since insecticides are broad spectrum varieties. These also kill critters that we want in our native plant gardens – pollinators, fireflies, spiders, earthworms, and more. The sprays can drift and, even if you don't do this in your own yard, your garden and yard may have these chemicals.

The fogging company may argue that pyrethroid-based products are safe. Those in current usage are synthesized rather than from natural sources and more resistant to breakdown and more toxic to insects. The jury is still out as to how dangerous they may be to humans and animals, but caution is advised while further research takes place (Hoyńska-Iwan & Szewczyk-Golec. 2020). Then too, the American Academy of Pediatrics (AAP-CEH 2012) has identified “landscaping chemicals” (and includes pyrethroids on their list) as important contributors to childhood illness.

Mosquito control should begin with the appreciation that not all mosquitos are bad or irksome. They are an important part of the food web for many vertebrates, including hummingbirds and bats. Their role in pollination is understudied, due to their predilection of being most active at dusk. But they clearly do visit some orchid species (most notably a northern bog species, *Platanthera obtusata*).

Dealing with mosquitos in your yard and neighborhood should begin with larval control, rather than control of the adult stage. Doug Tallamy, Professor of Entomology and Wildlife Ecology at the University of Delaware, recommends creating mosquito traps. Put out five gallon buckets of water in a sunny spot and add a handful of hay or straw. This concoction will result in an irresistible brew to egg-filled female mosquitos who will lay their eggs there, after which the buckets can be dumped and the eggs/larvae destroyed. Some recommend adding a commercially available mosquito dunk tablet that contains Bt to water-filled buckets. Others argue, however, that this still does harm to non-biting insects, such as midges, whose abundance in wetlands make them a major food source for aquatic animals, birds, and bats (Xerces Society 2023).

Other ways to control mosquitos and the larva are to frequently dump bird baths and refill. Keep downspouts clear of standing water. Even a bottle cap filled with water can hold dozens of eggs. Use aerators in backyard ponds. Mosquitos do not like moving water – females will only lay eggs in still water. Kiddie pools can be a mecca for egg laying. Note that eggs can stick to the sides of buckets, water filled gutters, and any

water holding container. Finally, encourage natural enemies in your yard, such as damselflies, bats, and birds.

If you have neighbors that hired a company that sprays for mosquitos, you can have your plants checked to see if there is pesticide drift. One can make drift complaints through the Office of Indiana State Chemist, OISC at: www.oisc.purdue.edu or contact Joe Becovitz at becovitz@purdue.edu. It would be best to file the form on the day of the application so that you can get an investigator to come out as soon as possible. I was surprised to know that Indiana even has an Indiana Pesticide Review Board. As noted by the Xerces Society, the more complaints that are filed against mosquito spraying, the more power we have over our own property and pollinator gardens.

I spoke with Amanda Smith, Superintendent of Natural Resources and Education for Hamilton County Parks. She suggests that when you are outdoors, personal protection is number one. Wear long sleeves and long pants. The Thermacell Cartridge, which is worn on clothes and can be hooked on a belt, pocket, or waistband, actually works and there is no odor! When at home, burn citronella candles or torches; but here is something I did not know, plug in a box fan and set it on your deck or porch. Mosquitos do NOT fly in the wind.

The all too automatic response of controlling pests by using insecticides kills beneficial insects. Instead of looking at the leaf that is chewed in your garden and assuming it is a "pest," take time to learn more about the insect or caterpillar. It really could be something good.

Mosquitos truly can be pests. They have been known to carry deadly diseases. Make yourself comfortable and mosquito free by following some of the suggestions and have a happy outdoor experience!

Nancy Tatum, VP of the Central Chapter of INPS, promotes an awareness of how hard it is to be a beneficial insect in this human-dominated world.

References

AAP-CEH (American Academy of Pediatrics, Council on Environmental Health). 2012. Pesticide exposure in children. *Pediatrics*:130-e1757-e1763 (Available at publications.aap.org/pediatrics/article/130/6/e1757/30399).

Hoyńska-Iwan, I. & K. Szewczyk-Golec. 2020. Pyrethroids: How they affect human and animal health? *Medicina (Kaunas)* 56:582 (available at [ncbi.nlm.nih.gov/pmc/articles/PMC7692614](https://pubmed.ncbi.nlm.nih.gov/pmc/articles/PMC7692614/)).

Xerces Society for Invertebrate Conservation 2023. (Search mosquito control at xerces.org for several helpful articles).