

House fly mortality by artificial sweetener: Starvation, not toxicity

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Close-up of the head of *Calliphora vomitoria*. Credit: Wikipedia.

While recent headlines have noted the potential insecticidal properties of common artificial sweeteners, don't go sprinkling Truvia around your home just yet. A new study on house flies suggests insects likely aren't poisoned by sweeteners—they just die of malnutrition.

A team of researchers at North Carolina State University tested survival rates of house flies (*Musca domestica*), on erythritol—the main ingredient in Truvia—compared to natural [sugar](#), agar, and water alone. They found that the flies both strongly preferred high-calorie natural sugar when presented with the choice and, when fed only erythritol, they died no faster than when fed only water or agar.

"Based on our results, erythritol does not appear to have insecticidal properties on house flies in the traditional sense, and would not be a candidate for adult control," says Michael Fisher, BCE, lead author on the study and a [doctoral candidate](#) at NC State.

Fisher and colleagues also tested mannitol, xylitol, and sorbitol, and found only the sorbitol to have any nutritive value for flies. They identify several possible reasons for the flies' inability to survive on artificial sweeteners, including an inability to digest them, a negative interaction with flies' gut microbes, or digestive blockage caused by the sweeteners. But, while the sweeteners led to high mortality in a lab setting, real-world applications would face practical challenges.

"In nature, and your backyard or livestock operation for that matter, there would be a number of competing food sources," says Fisher. "Ideally, if some type of attractive toxic sugar bait could be developed for house flies or other filth flies, it is important to address attraction, preference, and stimulation of feeding to achieve effective control."

More information: "Survival of the House Fly (Diptera: Muscidae) on Truvia and Other Sweeteners," by Michael L. Fisher, Fallon E. Fowler, Steven S. Denning, and David W. Watson, will be published online on April 5 in the *Journal of Medical Entomology*. [DOI: 10.1093/jme/tjw241](https://doi.org/10.1093/jme/tjw241)

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