PEST PROBLEMS? CALL A VETERINARY ENTOMOLOGIST

By R. Scott Nolen

Among the many disciplines that make up the area of one health is veterinary entomology, a field dealing with blood-sucking insects that feed on livestock, pets, and wildlife and are vectors for infectious and parasitic diseases.

Jerry Hogsette, PhD, is a scientist with the Center for Medical, Agriculture, and Veterinary Entomology, part of the U.S. Department of Agriculture's Agricultural Research Service. "When I tell people I'm a veterinary entomologist, they think I'm a veterinarian who cares for insects, which is obviously not the case," Dr. Hogsette said.

The stable fly is a blood-feeding insect with a painful bite and a taste for animals as well as humans. (Photo by Stephen Ausmus)

Focused as he is on insects that jeopardize animal health—primarily ticks and a variety of flies—Dr. Hogsette helps livestock producers and zoos with their pest problems. That entails identifying and removing places in the environment where the bugs can breed and deploying traps and chemical repellents that don't involve pesticides.

Innovative solutions are used as well. Dr. Hogsette described one such measure targeting the horn fly, a blood feeder with a painful bite. Horn flies swarm and pester cattle, which spend a great deal of energy defending themselves. Taking advantage of the fact that adult horn flies must remain on a cow host to live, a company created a vacuum that can be placed around a lane that cows are walked through. As the cows pass through, the vacuum sucks up the horn flies.

Horn flies and stable flies together are a bane of the cattle industry and a major cause of reduced productivity. "These critters cause cattle producers lost revenue every year, and they are a perennial problem," Dr. Hogsette said.

Another persistent pest problem is cattle fever ticks. Two species of tick carry the bovine babesiosis parasites responsible for a severe and potentially fatal disease for which no vaccine is available. Once common throughout the South and Southwest, cattle fever ticks today exist in a buffer zone in South Texas along the border with Mexico. The USDA has maintained a cattle fever tick eradication program for several decades, at great expense, to keep these ticks mostly south of the border.

Dr. Hogsette said the USDA's successful campaign to eliminate the screwworm fly in North and Central America during the 1990s was made possible by the contributions of veterinary entomologists. "The screwworm lays eggs in an open wound, and the larvae feed on the flesh, essentially eating the animal to death," he said.

For the past several years, Dr. Hogsette has worked with the National Zoo in Washington, D.C., and the Brookfield Zoo near Chicago on their stable fly problems. Like the horn fly, stable flies are blood feeders and target humans and animals.

The zoos are not creating the flies. So where are they coming from? "Everything is super clean," he explained. "We do a walk-through, and we can't find any evidence to justify the numbers of flies we're seeing on the animals or we're seeing in our traps."

Turns out the flies are breeding in compost piles in urban areas. Stable flies thrive in course straw or grass. "People make compost piles, and that's a very good thing, but if they're not kept at the proper temperature, they can produce flies. This is a problem nationwide," Dr. Hogsette explained.

"These are the sorts of things I deal with," he added. "It's a fun job and keeps me busy."

CORRECTION

The articles "New forensic programs investigate deaths of unclaimed dogs and cats" and "ASPCA opens Veterinary Forensic Science Center" in the Feb. 15, 2021, issue of *JAVMA* News, pages 342 and 343, respectively, incorrectly named several organizations as creators of guidelines on postmortem examinations. The International Veterinary Forensic Sciences Association alone created the guidelines. The American Society for the Prevention of Cruelty to Animals, in collaboration with Florida International University and Tufts University, created separate clinical standards and best practices for veterinary forensic sciences. Also, the first article gave the wrong year for when A Dog Has No Name and A Cat Has No Name started. The programs started in 2019.