

Colony Collapse Disorder Recent Loss of Hives a Mystery

In the fall of 2006, a beekeeper in Pennsylvania reported he had unexpectedly lost 70 percent of his hives. Soon, other beekeepers from other states reported they had lost hives. While colony losses often occur during the winter, the magnitude and rapidity of loss suffered by some beekeepers was highly unusual.

This phenomenon was termed "Colony Collapse Disorder" (CCD). The main symptom of CCD is no or low numbers of adult honey bees present but with a live queen and no dead honey bees in the hive. Often there is still honey in the hive and immature bees (brood) are present.

Because honey bees are responsible for pollinating berries, fruits and vegetables valued at \$15 billion, bee researchers mobilized and started working together to discover the cause(s) of CCD. Some of the theories included:

- Pesticides having unexpected negative effects on honey bees.
- A new parasite or pathogen may be attacking honey bees.
- Existing stresses may have unexpectedly weakened colonies leading to collapse. These



European honey bee with a varroa mite on its back. Israeli acute paralysis virus (IAPV) can be transmitted by the varroa mite.

Scott Bauer, USDA Agricultural Research Service, Bugwood.org

was the Israeli acute paralysis virus (IAPV), a virus that can be transmitted by the varroa mite.

This was the first report of IAPV in the United States. IAPV was initially identified in honey bee colonies in Israel in 2002, where the honey bees exhibited unusual

stresses could include high levels of infection by the varroa mite (a parasite that feeds on bee blood and transmits bee viruses); poor nutrition and exposure to limited or contaminated water supplies.

One early theory bandied about had to do with cell phones towers, but researchers have discounted this having anything to do with disappearing hives.

Early Research Results

In September 2007, a research team published the results of an intensive disease screening of CCD-affected honey bee colonies and non-CCD-affected hives.

Researchers found a foreign virus in a high percentage of samples from honey bee colonies with CCD, but not in non-CCD colonies. This pathogen

behavior, such as twitching wings outside the hive and a loss of worker bee populations.

The study also found significant levels of *Nosema ceranae* and *Nosema apis*, single-celled parasites of honey bees, in CCD-affected colonies.

Current research efforts are underway to determine the interaction of various stresses and these pathogens in causing CCD. Researchers across the U.S. have divided this problem to avoid duplicating efforts. UNL Department of Entomology faculty, Marion Ellis, bee specialist, and Blair Siegfried, insect toxicologist, will be examining if pesticides used to control pests and diseases in the hive may contribute to colony collapse disorder.

Sources: USDA-ARS, Dr. Marion Ellis, UNL Department of Entomology

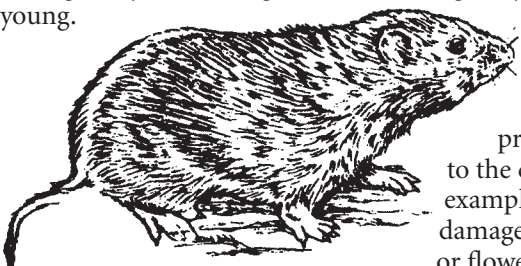
Voles

Soni Cochran
UNL Extension Associate

Voles are small rodents found in Nebraska. They have short tails (about one inch long), stocky build and small eyes. Voles can cause problems by damaging lawns, gardens, trees, field crops and other plants.

Prairie voles and meadow voles are common statewide. Pine voles live in the woodlands of extreme southeast Nebraska.

Voles are an important food source for many predators, including snakes, hawks, owls, coyotes, weasels, foxes, mink and badgers. In the wild, they may not live longer than two months and few live longer than 16 months, but they breed rapidly. Prairie and meadow voles normally have five to 10 litters per year and average three to five young per litter. The gestation period is about 21 days. One meadow vole held in captivity had 17 litters during one year, totaling 83 young.



Damage

One clue you may have prairie and meadow voles in an area is by finding their surface runways. The voles make runways by clipping off grass and plants making a path about one to two inches wide.

Typically, homeowners call the extension office in late winter and early spring when they discover these paths after the snow melts.

The voles damage woody plants during late-fall through early-spring when it is hard to find green vegetation. Voles tunnel through snow and may gnaw on trees and shrubs up to the height the snow accumulates during winter.

Control

If you discover voles, it doesn't mean you have major damage to your plants. Before you decide to control voles, consider the extent of the problem in relation to the cost of control. For example, a few voles could damage a highly valued tree or flower bed and warrant



Surface runway system of the prairie vole.

control. At other times, you may not even notice the voles or find damage, making control unnecessary.

It is best to try to prevent possible vole damage. Most problems in urban and backyard areas probably involve small vole populations that can be controlled with habitat modifications, fencing or exclusion, mouse traps and repellents. In rural areas, vole damage situations may involve larger vole populations over greater areas, and can be dealt with by habitat modifications, repellents and toxic baits, when necessary.

FOR MORE INFORMATION

UNL Extension NebGuide G-887 "Controlling Vole Damage" is available at the extension office or online at <http://lanaster.unl.edu/pest>

Beginning Beekeeping 2-Day Workshop



Saturday, March 8, 9 a.m.–5 p.m.
Lancaster Extension Education Center,
444 Cherrycreek Road, Lincoln

Saturday, April 12, 10 a.m.–2 p.m.
Apiculture lab, Agricultural Research and
Development Center (ARDC), near Mead

On March 8, you will learn to:

- manage honey bees by understanding their biology and behavior
- identify the best Nebraska honey plants
- locate hives for best survival and production
 - manage honey bee diseases

On April 12, you will learn to:

- install packaged bees
 - assemble a hive
- harvest honey and beeswax
- prepare your crop for market

Registration fee: \$20 per family (family to include parents and siblings living at home). Registration includes refreshments, one workbook and one lunch. Lunch for each additional family member is \$10.

Please pre-register by calling 441-7180.

Drain Flies

Barb Ogg
UNL Extension Educator

We have had several phone calls about small fly/gnat infestations in kitchen and bathroom areas. The name "drain fly" refers to several species of small flies whose larvae develop in the gelatinous gunk that accumulates inside plumbing pipes. These flies will also breed on food debris in a dirty garbage disposal, dirty garbage cans and in saucers and pans under potted plants.

Inside, these tiny flies seem to appear suddenly and mysteriously, but the original breeding flies most likely entered the house from outside. In nature, these flies breed in polluted, shallow water, septic tanks and moist compost. They can also be found in dirty garbage cans, rain barrels and tree holes.

To solve the fly problem, first locate where the adult flies are coming from. Place a clear glass or plastic cup over a drain or sink outflow. Plug the overflow hole, if there is one and leave undisturbed overnight. If the flies are coming from the drain, they will be found resting on the inside of the cup. Another method is to place duct tape or masking tape over the drain opening. Leave a small opening in the tape to allow air movement for the flies to follow. If flies are exiting the openings, some of them will become stuck to the tape.

Treatment for drain flies involves eliminating the

breeding area, which usually means cleaning the inside of the pipes to get rid of the goo that lines the pipes. There are several common mistakes people make in their attempt to control drain flies. Bleach and drain uncloggers will not penetrate and dissolve the gelatinous material which



Highly magnified view of adult drain fly.

lines the drains. Never put insecticides down drains. Pouring insecticides down the drain won't kill the drain fly maggots that are protected inside the gelatinous goo. It is

also not good for the environment and is a violation of the insecticide label.

We recommend cleaning pipes and traps with a good, stiff, long-handled brush or a plumber's "snake" to remove all the slimy organic material. Don't forget to clean the garbage disposal. After cleaning, it may take a few days to a week for the flies to die a natural death, so be patient.

Pest control operators have DF 5000 Gel available as a professional product. This is not an insecticide. It is a gel of active beneficial bacteria that destroy the gelatinous gunk inside pipes. Multiple treatments are required, so treatment with this product may not work immediately. DF 5000 Gel can be purchased over the internet.

There are a number of other locations inside a home that will produce infestations of tiny flies. Breeding locations are nearly always associated with moist organic matter. Once you find the source of the infestation, you've won half the battle.