Approximately 80 food crops in Virginia rely primarily on honeybees for pollination.

Don't let their tiny size fool you. Each day, billions of honeybees perform the big job of pollinating the agricultural crops that end up on our dining room tables.

According to the U.S. Department of Agriculture, the pollination efforts of the nation's honeybees are valued at $15 billion. The shiny, red apple in your child's lunch, the cucumber sliced up in your salad and the pack of sunflower seeds you munched on for a snack are all made possible because of the many honeybees skipping across farmers' fields.

"Every third bite of food is somehow related to honeybee pollination," says Sean Kenny, vice president of the Norfolk Beekeepers Association. "The diet we've evolved to in this country is highly linked to honeybee pollination."

Unfortunately, honeybees are facing both natural and manmade threats. In Virginia, about one-third of honeybee hives die off each year. Nationally, the number is up to 40 percent, says Kenny.

If honeybee populations continue to decline, it could have a very real impact on the foods that make it onto grocery store shelves.

"We won't have food as we know it," Kenny says. "We won't have the apples, we won't have the melons, we won't have the squashes. We'll have lots of wheat, and we'll have lots of corn. A lot of things we've depended on for daily sustenance won't be present."

Mighty mites

The single biggest threat to honeybees is the parasitic varroa mite. It attacks on two fronts: by feeding on the blood of the bees within the hive and by weakening the hive as a whole, making it more susceptible to viruses and other parasites. Varroa mites are the top reason hives die off each year.

Colony collapse disorder (CCD) is another threat, and is mostly found in the commercial beekeeping industry.

"You go into a colony, and there's thirty, forty, fifty thousand insects, and the next day, there's just a fraction of that," describes Pete Ostrowski, a Gloucester County beekeeper. "There's just the queen and some attendant bees. Most of the adult workforce is gone, and they don't know why."

A study published in January in the American Chemical Society's *Environmental Science & Technology* journal speculates that CCD may be caused by neonicotinoid insecticides that are widely used on agricultural crops.

"There are lots of theories out there, but no definite proof that we know what it is," Kenny says.

Bringing back the bees

To help offset of loss of colonies each year, local beekeeping groups, like the Tidewater and Colonial beekeepers associations hold training programs to encourage new beekeepers. The Tidewater group held a seminar in January. Fifty participants had the opportunity to take part in Tidewater's "Bee Yard Sweat Equity" program, in which aspiring beekeepers train alongside experienced beekeepers in learning how to care for hives. Graduates receive a beehive of their own at the conclusion of the training.

There also are efforts to educate the general public on the plight of the honeybee and its importance to the environment. Frank Walker, president of the Virginia State Beekeepers Association, has made it his mission to teach the public what to do if they encounter a swarm of bees.

Each spring, healthy colonies instinctually swarm, meaning the queen and about half of the colony will leave the hive to start a new colony. They cluster on a tree, fence, mailbox or other structure as they wait for scout bees to find a new home.

Many scared homeowners' first reaction is to grab a can of insect killer and start spraying. Beekeepers heartily say, "Don't!"

"The unfortunate fact [is] the bees they killed were those bees that had the right genetic makeup to swarm in the spring," says Kenny. "They were strong enough to survive the winter, and they are the bees we want because they show some resistance to the varroa mite. Losing them to a panicked homeowner is tragic."

Walker regularly speaks to civic groups and distributes fliers, asking the public to call a local beekeeping group if they see a swarm. Most groups have members who will come out and collect the swarm for free. Those swarms are then given to other beekeepers to manage.

Staying b-u-z-z-y

After watching his father-in-law work with bees, Paul Hodge became fascinated with the intricacies of life in the beehive. During the summer, a hive can grow to more than 60,000 bees. Female worker bees take on a series of roles during their lifetime, moving from housekeeper to construction worker, grocer, undertaker, guard, and finally, becoming foragers. Foragers collect the nectar and pollen for the hive and are the only bees most people ever see.

"You realize that there's a sense of order in [the hive]," says Hodge, president of the Ashland Beekeepers Association. "The bees that are out there gathering nectar today are only going to live another four weeks, and

How You Can Help the Bees

1. Minimize the use of pesticides in your yard. Bees can mistake wet pesticides for dew or Sevin dust for pollen. When pesticides are carried back to the hive, they can lead to massive die-offs. The best advice is to not use pesticides at all. If you have to use a pesticide, apply it as the sun goes down, so it will dry or dissipate by daybreak when bees return to collect pollen.

2. Provide a food source for bees by growing pollinating plants in your yard. Fruit trees, sunflowers, blueberries, raspberries, herbs, cucumbers and wildflowers are all good choices.

3. Don't kill spring swarms. Don't spray it with bug killer or try to remove it yourself! Instead, call a local beekeeper to collect it. A list of local beekeeper groups is available at the Virginia State Beekeepers Association website, virginiabeekeepers.org.

4. Buy local. Support local beekeepers by purchasing local honey and other bee products. Many beekeepers use their earnings to reinvest in their hives.

Honey bees were brought to North America by early European settlers.