

Southern Farmer

From citrus to blueberries and squash to snap beans, key southern fruit and vegetable crops depend on honey bees for pollination. Now, bee health problems like colony collapse disorder (CCD) and the competition for hives from other parts of the country are raising concerns for southeastern farmers: When I need the bees, will they be there?

Some of the numbers from Jerry Hayes, Florida's chief apiary inspector, are worrisome.

"There are about 2.4 million honey bee colonies in the United States, and California's almond industry needs two million colonies to get their crop pollinated. If there's a delay moving those bees back east, it can be a problem."

Wild hives used to provide a back-up until they were wiped out by the varroa mite. Now growers across Alabama, Georgia, and Florida rely on commercial sources for bees, but with CCD losses running at a steady 30% per year, Hayes isn't sure how long the supply of bees will be adequate.

"What is the tipping point for bee health? At what point is there not enough," he asks. "It's only because of honey bee biology allowing us to replace colonies by splitting hives that we have enough bees now."

One response to pollination concerns is a renewed interest in promoting native bees either as a back-up or on some farms as the primary pollinator.

"Honey bees have been the standard pollinator in the U.S.; using native bees in commercial situations has been under-investigated," says Dr. Jamie Ellis, assistant professor of entomology at the University of Florida.

"Now, with the honey bee crisis, many people are investigating the use of native pollinators, though research in this area has a long way to go," Ellis says.

One major challenge is that bee science isn't a "one size fits all" situation. A bee that works well in one environment may not be suited to another region or style of production.

For example, native bees that are effective pollinating smaller apple orchards in the varied terrain of upstate New York don't do well in eastern Washington's huge tracts of apple monoculture.

In the South, native bees that perform well on Mississippi blueberries may not thrive in Florida if the timing between blueberry flowering and bee emergence is different.

"We are pushing for research on three key questions," Ellis reports. "First, we must know what native pollinators are present on target crops.

"Second, we should know something about each pollinator's contributions to the pollination of that crop. Finally, if a bee species is delivering the pollination services the crop needs, we can study if or how the bee can be managed effectively, especially since native pollinators usually cannot be moved from crop to crop like honey bees."

Dr. Keith Delaplane, director of the University of Georgia's honey bee program, also supports native bee research. His lab is studying native squash bees (*Peponapis pruinosa*), which have already proved themselves as effective pollinators in some western states.

How critical is this work?

A recent tally in Florida alone found more than \$1.4 billion worth of annual crops that depend on insect pollination. In addition to farm-gate value, those crops support 48,135 jobs and have a total economic impact of almost \$3.4 billion.

“For years we’ve assumed there would be pollinators when we need them,” says Hayes. “Now this is an issue growers should keep on their radar screens.”

For farmers who want to learn more about native bees, increasing array of information resources is available, from the internet to the local office of USDA’s Natural Resources Conservation Service (NRCS), which has grant money available to help farmers institute pollinator programs.

One good starting point is the Xerces Society’s interactive map at www.xerces.org/pollinator-resource-center. There growers can click on any state to find region-specific native bee, plant and pesticide guides.

Plant- and region-specific information is also at <http://about.extension.org/>, a website where land grant universities share information. Fruit growers can check out the Southern Regional Small Fruits Consortium at www.smallfruits.org, and their local extension service. For example, the Georgia cooperative extension has guidelines on how to improve land to encourage native bees.

Additional information is available at the Native Pollinators in Agriculture Work Group (www.agpollinators.org), the Pollinator Partnership (www.pollinator.org) or in USDA publications at (www.nrcs.usda.gov/technical/ECS/database/technotes.html).

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