



TRASK BEDORTHA

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Sujaya Rao –
OSU entomologist

which is sold under the name “Poncho.” While early evaluations ruled clothianidin safe, more recent accounts are casting doubt. A leaked EPA memo distributed in 2010 stated, “Acute toxicity studies to honey bees show that clothianidin is highly toxic on both a contact and an oral basis.” The National Honey Bee Advisory Board, the American Beekeeping Federation and the American Honey Producers Association all have called for new evaluations of the chemical that could be one of the greatest threats to their livelihoods.

Together, the varied causes of CCD are instigating a multi-continental die-off of honeybees. As the specter of colony collapse disorder hangs over the Pacific Northwest, entomologists are closely watching the rate of winter death. For now, CCD hasn't caused enough of a die-off to threaten the crops, but how will those crops survive if honeybees can't do the job?

“The bees that we have here cannot replace honeybees,” says OSU entomologist Sujaya Rao, who studies native pollinators. It isn't that native bees are nectar snobs who hate orchard trees. Rather, honeybees live in much larger swarms than native bees. “The numbers are good but not as high,” Rao says of the native bees.

Sagili says that even though most bees live in managed hives, “There are small things that everyone can do.” Adding plants like foxglove or lavender to your garden provides both honeybees and native pollinators with a continuous, diverse supply of nectar and pollen. And if you're looking for a challenging project, backyard beekeeping is as tough as ever. 🐝

BEES, BABY, BABY, BEES

Nonnatives make the world go round BY SHANNON FINNELL

Four hundred years ago, give or take, a nonnative species came to North America. Stop it. Don't guess white people. It's not that obvious. White people just brought them and their sticky goodness. What we're talking about are honeybees.

Some of the striped invaders escaped their hives and settled in the wild, but today 99 percent of honeybees live in managed colonies, according to Oregon State University entomologist Ramesh Sagili. They've been incorporated into the United States' complex system of agriculture; honeybees play an important role in the lives of people, pollinating crops like almonds, avocados, apples and cherries.

But since the winter of 2006, the honeybee populations that we depend on have dipped drastically across North America, Europe and Asia. Die-offs of honeybees aren't unprecedented: In the 1980s, invasive mites reached North America and hammered honeybee hives, and they're still a problem for beekeepers.

What's different now is that scientists can't identify a singular, specific cause of the bees' decline.

Usually we welcome getting rid of a nonnative species. Not so with honeybees. Entomologists started calling the mysterious drop in honeybee populations “Colony Collapse Disorder,” or CCD. Sagili says Oregon's honeybees are doing better than the national average, with a 26 percent winter death rate in Oregon's managed hives compared to 34 percent nationally. But the typical and acceptable winter loss is around ten percent.

While CCD is named as a single disorder, its origin is complex. “We still think there is no one cause that is responsible for the decline of bees,” Sagili says.

Pests and pathogens are traditional causes of large-scale bee death, and this continues to be the case with CCD. However, the USDA's CCD steering committee reported in June 2010 that post-collapse hives have provided evidence of

“an absence of damaging levels of the gut parasite nosema or parasitic varroa mites,” which are the usual bee-killing suspects.

Other pests and pathogens are still likely contributors to CCD, but humans are killing bees, too. Sometimes it's hard to avoid — like when beekeepers need to move their hives for the winter due to weather or nutrition needs.

Other human contributions to colony collapse are more difficult for beekeepers to manage because they're caused by outside factors. Malnutrition from monocultures (big farms that grow one crop) contributes to the problem. “We have restricted the diet of the honeybee,” Sagili says. “Instead of seven or eight kinds of pollen, there are only two or three.”

Pesticides and fungicides are also killers of these needed nonnative bees; their severity might be increasing because the different chemicals are mixing in what Sagili calls a “cocktail in the hive.” One of the most contentious pesticides is Bayer's clothianidin,