

The Future of Bees

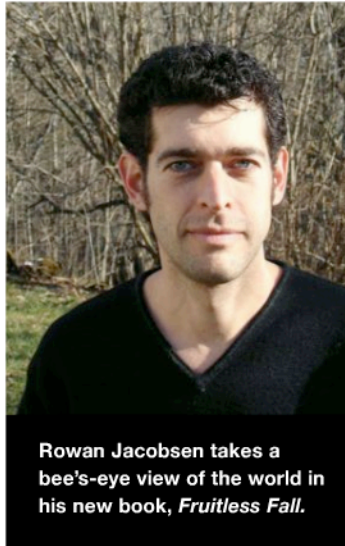
Author Rowan Jacobsen explains how the disappearance of the world's honeybee population puts the food we eat at risk—and what we can do to help. **By Lorraine Dusky**

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Your morning cup of coffee? That apple you're planning to have after lunch? The zucchini you'll have for dinner? We owe all of these simple pleasures to one of the hardest-working fellas in the food chain: the honeybee. Take away the bees and we'd be left with a pretty modest palate of flavors, largely grains that are pollinated by the wind. Oats, yes. Beans, peas, corn, yes. No apples, melons, squash, coffee. Blueberries, cherries, nuts, cucumbers? *Fubgeddaboutit!*

A healthy hive of honeybees can cross-pollinate 25 million flowers in a single day. Without those tireless buzzers flitting from flower to flower, the food chain would be in quite a fix. And this is why the seemingly mysterious die-off of bees, which started getting prime-time attention in 2006, is a disaster of major proportions. Beekeepers from Florida to France, from China to the Carolinas were alarmed as they went to their hives—rectangular boxes built to house thousands of bees—only to find them, in some cases, nearly empty. Any surviving bees were dazed and listless. Colony Collapse Disorder, or CCD, was not simply a catastrophe for beekeepers; it foretold a coming calamity for our dinner plate.

Industrial beekeepers scratched their heads in wonderment because CCD seemed to have no obvious cause, making it all the more mysterious. *But hold on!* says Rowan Jacobsen, a writer who specializes in the intersection of food and the environment. In his 2008 book, *Fruitless Fall*, he theorizes that by look-



Rowan Jacobsen takes a bee's-eye view of the world in his new book, *Fruitless Fall*.

ing at how far we have taken bees from their natural environment—where they eat a varied diet and thrive—to the huge monocropped fields of industrial farming today—where they struggle and die—we find the seeds of CCD.

Colony Collapse Disorder is one facet of what Jacobsen calls “industrial agriculture disease,” the effects of farming vast chemically fertilized fields of single crops: no biodiversity, no local pollinators, no curbs on diseases that can be spread across the country through industrial packing and shipping. In the process, the bees are not given their due respect. “Honeybees are pushed pretty hard,” he observes. “Not only are they trucked around the country in semis to do their pollination duties, the stressors are then piled on: viral infections, mites, chemicals to kill the mites, exotic pathogens, antibiotics, and on and on. Not surprisingly, you get CCD.”

Newspaper stories about CCD have

often included pictures of beekeepers feeding corn syrup to the hives. Bees have been fed corn syrup for decades, says Jacobsen, so they would produce more honey—and more bees. But corn syrup is junk food for bees, as it lacks the nutrients of natural nectar. “Giving them corn syrup is like us living on nothing but soda when we are sick,” he says.

Yet that is what most of the big industrial beekeepers who truck their bees from Florida to South Dakota to California in semis have been doing for decades. Migrant labor, bee style. One job to the next, no vacations, and lousy food to boot.

A Worldwide Problem

“If the bees lived a life that they evolved for—staying in one place, having a variety of flowers to visit, which would give them the different nutrients they need—the corn syrup addition might be okay.” But when a cheap diet of sucrose comes at the end of a long list of stressors, you get a tipping point and... CCD. *Fruitless Fall* explains what happens: Royal jelly is no longer plentiful. Instead of living for a couple of years, the queens die in six months. The baby bees are weak and subject to all sorts of viruses. The forager bees are listless and exhausted. Mites overwhelm them all, including the young. Not surprisingly, the once normal “winter die-off” becomes catastrophic. Most bees have died somewhere in the fields.

While it's unclear whether or not Europe's bees are suffering the same

stressors, what is known is that bees there, as well as in Canada, Asia, and South America, are in trouble. In China, where harsh pesticides were enthusiastically used until a few years ago, the situation is so dire that there are simply no bees in some regions. China's absurd solution is made possible by the country's inexhaustible population of cheap labor: women and children meticulously pollinate apple and pear orchards—*by hand*.

That's the bad news. The good news is that the solution is obvious: take away the stressors, repopulate the hives with bees that managed to kill their natural enemy (the varroa mite) and survive, and you will get a healthy bee population, which produces healthy young'uns in turn.

Back to Nature

One of the heroes of the bee world is a Buddhist beekeeper in Vermont, Kirk Webster. "When the mites hit the bees

big-time in the nineties, and people started putting chemicals in the hives, Webster decided that wasn't the way to go," says Jacobsen. "He let most of his bees die, and he took the survivors, bred them with each other, and introduced hardy Russian bees into the hive. But to do this he went without an income for a decade. He lives simply. And he developed bees largely resistant to mites."

Webster, known as the Bee Mystic, sees the mite problem as nature's way to root out the weaker bees—think survival of the fittest. But letting nature take its course as Webster did requires patience, something industrial beekeepers lack. Their mantra is profits; patience is costly.

Treat the bees with respect, however, and you get prosperous, healthy hives, and lots of nutrient-rich honey. Which is what Jacobsen himself is doing on his few acres of undeveloped land in Vermont. He got some bees from Webster and let them do their

bees: a wall of plywood around the tree with nails sticking out of the top.

A To-Do List for Bee's Needs

Many of us don't have hives in our backyard, but there are still ways those of us with any type of yard or garden can make bees welcome. Jacobsen includes a handy list in *Fruitless Fall*. For starters, plant vegetation that needs bees. Plant big single-color masses, not mixed colors, because it's easier for the bees to spot the blossoms; go native; plant simple single blossoms rather than newfangled doubles (they aren't bred for their nectar but their looks); provide a variety of flowers so the bees get complete nutrition; avoid pesticides of all kinds. That means fungicides, herbicides, and insecticides—if the label says it will kill one type of bug, it will kill most of them. Replace as much lawn as possible with bushes, flowers, and vegetables—insect-friendly flora.

"If there is a silver lining in the cloud of Colony Collapse Disorder, it's that many people now understand that agriculture depends on honeybees," Jacobsen writes. "That's a big improvement over our naiveté of just a few years ago." Small organic farms, community farms, backyard gardens, all a world away from Big Agra, is what will save the honeybee—and the nutritional biodiversity we humans crave, and need, for survival.

As I was finishing up this piece, my local farmers' market in Sag Harbor on Long Island was in full swing, and so I raced over to check out the honey. Even the brand name was hopeful: Bees' Needs. And yep, the bees came from the Bee Mystic, and were not trucked anywhere, dosed with chemicals, fed antibiotics, or given that nasty corn syrup slush. Not only could I choose from honey flavored by three different kinds of blossoms, I could also buy a share in the company, for it is a community-supported apiculture. I asked if Bees' Needs had ever been struck with CCD.

But you already know the answer, right? ■

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own thing, starting with building their own hives, which are not the rectangular boxes that the industrial apiaries use, but V-shaped. Organic. Not stackable. Not conducive to being trucked around the country.

Jacobsen's eight old apple trees were, ahem, a beehive of activity during apple blossom time, he reports, and this summer he had a bounty in fruit. The only disaster was a honey-seeking bear who had struck a few nights before we talked and knocked one of his two hives off the tree. Jacobsen was hoping the bees would regroup, and to keep future intruders at bay, he was going to build a low-tech "iron maiden" for the

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