



Bees Make a Comeback, Beekeepers Look To the Future

Timely research, robust communications, and new products have helped Alberta bee populations recover in recent years. At critical moments, Growing Forward 2 funding was there.

In one way, agriculture in Alberta is all about scale: millions of head of livestock, millions of acres of canola, billions of dollars each year in economic impact.

In another way, the smallest participants more than pull their weight. Alberta's bees, raised and managed by 1,000, mainly small-scale beekeepers, play an indispensable role in crop pollination and make a thriving honey industry possible too.

The good news is, Alberta's bees are currently strong and healthy. The deeper story is just how close the province came to losing this priceless resource.

Medhat Nasr, Provincial Apiculturist with Alberta Agriculture and Forestry (AF), has been closely involved in the challenges and comeback of the province's bees in recent years.

"Over the past 25 years, average winterkill of bees across the province has been 15 percent to 18 percent," says Nasr. "Starting in 2006-07, we saw a few years where winterkill was up to 40 percent per year. We started looking at what had failed in terms of management practices to cause this level of winterkill."

A Perfect Storm for Bee Mortality

With funding from *Growing Forward 2* and others, Nasr began the apicultural detective work of finding the causes behind this dramatic increase in winterkill. Time was certainly a factor. If annual winterkill losses continued to be 40 percent, the province's bee population could reach a tipping point from which recovery would be very difficult. Beekeepers were understandably worried. Over the next few years, Nasr fielded 1,500 phone calls from producers trying to cope with these challenges.

While similar dynamics were playing out across North America, Nasr studied the question with specific reference to Alberta. One major contributing factor was that the varroa mite, a pest that affects hives and bees, had developed resistance to the chemical products used to manage it.

"We started working on alternative products to bring to the industry," says Nasr. "We found a product in France known as Apivar that had no cross-resistance to other products around the world. The active ingredient was about to be deregistered here on the grounds that it had no use in Canada. Within eight months, we were able to secure Apivar for Canada."

By using Apivar, and implementing new management practices to enhance bee health, hive numbers in Alberta began to recover. By 2015, Alberta had 295,000 hives, even higher than the last pre-crisis year, 2006, when the province had 250,000 hives. Aided by mild temperatures,



Careful management, and good varroa mite control, the winter of 2014-15 saw Alberta's lowest-ever bee winterkill at just 10 percent.

Back From the Brink

To guard against the development of Apivar resistance, Nasr helped shepherd another control product known as Hopguard to registration. In 2015, with funding from *Growing Forward 2*, he led development of the first bee health app in Canada, called Honey Bee Health. The app, which helps beekeepers implement health management practices, has been downloaded more than 3,000 times by beekeepers all over the world.

As Nasr looks back, he's proud of his role in the comeback of Alberta bee populations, and glad *Growing Forward 2* funding was available. All things considered, it was a close call.

"Thirty or forty percent winterkill year after year; if you add that up, we should not have an industry," says Nasr. "Our program was built on finding causes, giving producers new tools, and communicating better management practices. That is how we came out of the dark days to where we are today."

Growing Forward 2 is a federal – provincial – territorial initiative.