

Decimation of honey bees catastrophic for producers

"I would say in Ontario the mortality rate is unusual, but locally it is unprecedented." – Jim Anderson of Tanglewood Honey.

By Debbi Christinck
Staff Writer

Eganville – The decimation of honey bee hives this winter has been devastating for honey producers, with far-reaching impacts for other crops which rely on the bees for pollination and a mystery as to what has caused these overwhelming losses reaching as high as 100 percent for some beekeepers.

"I would say in Ontario the mortality rate is unusual, but locally it is unprecedented," Jim Anderson of Tanglewood Honey said. "The average mortality rate in Ontario is around 45 percent. If you put this in perspective with other agricultural industries and they faced a mortality rate that high, you see the impact."

With over four decades of experience as an inspector in the industry, he is known for his expertise in beekeeping, and has taught many of the local beekeepers their trade. Now semi-retired, he continues to teach courses and keep hives, although not as many as when the business was in full operation. With close ties to the industry, he said it appears the worst hit areas are Western Quebec and Eastern Ontario.

In his 70s, he said it seemed to him the winter was unusually long and cold and that may have been a factor locally in the losses. However, the weakening of the hives began in late summer; he believes when the varroa destructor mite got out of hand. This parasitic mite can decimate a colony quite quickly.

"I was trying to remember what was unusual about last summer," he said. "The mites built up in late July-early August."

Many bees died early in the winter, which is unusual, he added.

"They were infested and weakened," he said.

While beekeepers would treat their bees for the mite in September, the bees need to be strong to get into the winter.

"This last summer the mites got away from us, so we had this severe mortality," he said. "Not only is the mite itself a problem, but the activity of the mite."

The mite is a vector for viruses and the weakened bees can't fight them off.



Jim Anderson of Tanglewood Honey outside Eganville has over four decades of experience as an inspector in the industry and is well known in the area for his honey. He said the losses in the local area are unprecedented this year. In some of his hives the bees had totally absconded, he noted. He knew he was in trouble when he noticed no bees flying in winter. He said in a normal winter they can be seen on warmer days.

"And it was a very cold winter which is not normally a problem for the bees unless it is long periods of cold," he said. "It means the bees can't break the cluster."

The bees overwinter in the protected hive where they keep a core temperature of about 80F which melts the honey so they can eat it and keep up their strength. On slightly warmer winter days, they can break the cluster and fly around, he explained.

"You need to see bees flying in winter," he said. "When I didn't, I knew we were in trouble."

Mr. Anderson, who used to run 350

hives at the peak of his operation, still keeps a smaller number of hives and had catastrophic losses this year. He was surprised at what he encountered in some of the hives when he examined them.

"There were no bees left in the hive at all," he said. "They basically absconded because of the mites in early winter."

Importance of Pollinators

While the honey production of the bees is basically the gravy for the beekeepers, there is also an acknowledgement of the important role bees play in the food production system.

"The pollination they provide for practically everything is invaluable," he said. "It will be severely missed. We will probably see poorer fruit crops and it will be harder to get a crop from the veggie garden."

He also wonders what effect the loss of the honeybees will have on native pollinators. Honeybees are an introduced species, he noted.

"We just hope the other species will have survived," he said.

Bees fly around a radius of four kilometres, so their impact is widespread. Mr. Anderson said some of the larger producers still can't access all their hives because of winter conditions and spring thaw, so just how bad the decimation is for them is still unknown. He expects more information will be forthcoming through the Ontario Beekeepers Association.

The impact on small beekeepers from this will be challenging, he noted.

"There are a lot more hobby beekeepers now," he said. "The large-scale beekeepers in this area are a thing of the past."

Catastrophic Losses

Paul Hamilton of Whispering Pines Honey has been developing his apiary for the last five years and this winter he lost all of his hives.

"It is catastrophic," he said. "As a young man he worked for a beekeeper and always had an idea of coming back to it. Following his retirement from the finance industry which saw him working all over Canada, he bought a property on Grist Mill Road in North Algona Wilberforce Township and bought some hives."

"I always wanted to have a bee farm," he said. "Until this winter, it was going fine. I had a five-year plan, and I was ahead. Now I have been set back about two years."

He had grown his business to 54 hives. Now they are all gone. Fortunately, he saw what was happening in the fall and ordered 30 hives to replace his anticipated losses.

"I think I was lucky enough to realize there was a problem in November," he said.

Some of his colonies were dying off and he could not figure out why. He had done his mite treatment and was feeling confident the hives were healthy.

"Then when it was time to cover them up for winter, I discovered I had a problem and it was a very big problem," he said. "Several colonies had piles of dead bees in the front."

While it is expected to have dead bees in front of the colony in spring, this is not the case in the fall. The hive needs to have thousands of bees to keep the warmth for the honey and

to survive the winter. The loss of some bees for the hive would not allow this to happen.

"I thought it was poisoning," he noted.

In doing some autopsies on the bees, he saw many had their tongues out and this shows they died from poisoning. As well, in some of the hives the bees had simply absconded and left the queen behind, so he knew those were expected losses.

"But my strong hives were chock full of bees, so I was confident about them, but I was worried," he said. "That is why I ordered 20 hives and then two weeks later I ordered 10 more."

Now he is glad he did order the hives when he did because obtaining them now without pre-ordering would be impossible.

"And there are beekeepers that lost hundreds of hives and they can't replace them now," he said.

Canadian regulations restrict the importation of bees from the United

States, so the market is limited, he added.

In January he usually looks at the hives very briefly on a warm day. He started with his strongest hives, expecting to find the bees well.

"It was devastating. They were dead all the way through," he said.

The bees were in the frames or laying at the bottom of the hives. With about 60,000 to 80,000 bees per hive, it was a tremendous loss.

"And I have around 2,000 pounds of honey which should have been eaten by the bees sitting in the hives," he said.

For about a month he thought about quitting but has decided to clean up and prepare for the arrival of his new bees. It will be a two-year rebuilding process if nothing goes wrong.

Insecticide Impact

Mr. Hamilton is concerned about the impact of neonicotinoids – a group of insecticides used widely on farms – which can be toxic to bees. Seeds of some crops are infused with this insecticide which is made from tobacco leaves and then the plant grows and is infused with the insecticide.

"The bees collect the pollen and bring it back to the hive and use the nectar to feed the larva," he said. "They are poisoning their hive."

When a debate about the use of neonicotinoids was held in Europe, the European Parliament banned the use in five days.

"Canada gave them five years, so that is where we are at," he said.

Now he is disposing of the dead bees and anticipating the arrival of his new crop. Fortunately, last year he had a bumper crop of honey, so he still has lots to sell. His honey, which is from the pollen of area wildflowers, has proven to be quite popular in the area.

"Even my Mennonite neighbours like my honey," he said. "They come in and buy it by the five-gallon pail."

Worst Winter Since 1979

Murray Borer of Oak Grove Honey came to the Ottawa Valley in 1979 specifically to build up an apiary and produce honey.

"When we moved here, we were told the Upper Ottawa Valley was the best place in Ontario for beekeeping," he recalled. "And we are still one of the best areas."

The farming in the area was a great source of pollen for bees, he explained. While farming has changed, the abundance of pollen for bees still is available locally. In his heyday he produced between 30,000 and 65,000 pounds of honey a year but pushing 70 he has slowed down to more of a hobby operation and focused more on selling bees.

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Paul Hamilton knew he was in trouble last fall with his hives. He has been building up Whispering Pines Honey for the last five years and lost all his hives this winter.



Jim Anderson is still unsure what was the cause of the devastating losses experienced locally. He said the winter was unusually cold, but the issue with varroa destructor mites began last July. The mites can be a vector for viruses infecting the bees.

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Total loss at some local apiaries

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"We have never seen a winter like this one," he said. "I think it is a virus. It is funny how a virus can change things," Mr. Borer said.

In the winter of 2020-2021, they overwintered 64 hives and didn't lose a single one. They sold off 40 hives to other beekeepers and it was a great year, so the remaining hives multiplied to have 57 in the fall.

"Now we have two left out of 57," he said.

Concerned about mites last summer, he treated his bees two weeks earlier than usual, but he thinks the bees had already been infected with a virus introduced by the mites.

"If it was just the mites, it would not be a problem," he said. "It was the virus."

While there is a concern about pesticides, Mr. Borer said it is an issue, but it cannot be the cause of the widespread problems this year.

"The farming industry is reducing the use of pesticides and doing best practices," he said.

As far as his own hives are concerned, he is lucky one of the hobby beekeepers he sold hives to is selling hers back to him.

"So, we have six now," he said with a laugh. "And if you have a good year, it is not hard to turn one hive into four."

However, honey production will be sacrificed to make the hives strong, he said.

Mr. Borer said it will be interesting to see when the total bee losses in Ontario are tabulated. He thinks it might be 60 percent of the hives lost. Alberta, which is the largest honey producing province in Canada, is reporting losses of about 50 percent.

When the Dandelions are Out

Sheldon Berndt of Golden Lake has been beekeeping for about five years and since he is down with an injury, he has not been to check on all his bee yards yet, but he is optimistic.

"My daughter has seen some bees flying around, so that is good," he said.

In the one bee yard, he lost four out of his six hives. He still has to check the other two bee yards. He went into the winter with 20 hives.

"In the one yard we lost some and we will see when we open the hives up, probably next week," he said.

Like other beekeepers he treated the hives and got to them early to deal with the mites. The mites are an issue when things appear to be going very well, he added, passing on a bit of a folklore saying.

"If you have a healthy yard, you have healthy mites," he noted. "And the bees were doing well, bringing in a lot of honey. So, the mites in the yard were healthy too."

With the weather being on and off cold, he said he will check soon to see the state of all his hives.

"It is all a learning curve," he said. "I want to stay at it and keep going."

Looking out the window, he said it is nice to see everything greening up which is just what the bees need when they appear from their winter homes. The old folk sayings about bees also hold true, he added.

"When the dandelions are out the beehives are safe," he said. "They have food."

People should leave the dandelions for the bees, he added.



Murray Borer said he believes a virus brought in by the mites was the issue which decimated so many hives in Renfrew County this winter. Although he has drastically reduced the number of hives he has in recent years, he also saw great losses. In 2020, he overwintered 65 hives and 64 survived. In 2021, he overwintered 57 and only two survived.



Paul Hamilton of Whispering Pines Honey and some of the 2021 crop.



Murray Borer of Oak Grove Honey came to the Ottawa Valley in 1979 to start an apiary. The area was known as the best place in Ontario for honey production and still is excellent, he said.



Paul Hamilton had 54 hives in his yard and he lost them all. He is concerned about the impact insecticides are having on the bees. Although he considered quitting the business, he is going to give it another go this year and is anticipating the arrival of 30 hives.

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