

Varroa mites central driver of uptick in overwinter honeybee colony losses according to 2018-2019 survey, worrying entomologists

Beekeepers across the United States lost 40.7% of their honey bee colonies from April 2018 to April 2019, according to preliminary results of the [latest annual nationwide](#) survey conducted by the University of Maryland-led nonprofit Bee Informed Partnership. Honey bees pollinate \$15 billion worth of food crops in the United States each year.

The survey results show, the annual loss of 40.7% [in 2018] represents a slight increase over the annual average of 38.7%. However winter losses of 37.7%, were the highest winter loss reported since the survey began 13 years ago and 8.9 percentage points higher than the survey average.

“These results are very concerning, as high winter losses hit an industry already suffering from a decade of high winter losses,” said [Dennis vanEngelsdorp](#), associate professor of [entomology](#) at the University of Maryland and president for the Bee Informed Partnership.

During the 2018 summer season, beekeepers lost 20.5% of their colonies, which is slightly above the previous year’s summer loss rate of 17.1%, but about equal to the average loss rate since the summer of 2011. Overall, the annual loss of 40.7% this last year represents a slight increase over the annual average of 38.7%.

Just looking at the overall picture and the 10-year trends, it’s disconcerting that we’re still seeing elevated losses after over a decade of survey and quite intense work to try to understand and reduce colony loss,” adds [Geoffrey Williams](#), assistant professor of entomology at Auburn University and co-author of the survey. “We don’t seem to be making particularly great progress to reduce overall losses.”

Since beekeepers began noticing dramatic losses in their colonies, state and federal agricultural agencies, university researchers, and the beekeeping industry have been working together to understand the cause and develop Best Management Practices to reduce losses. The annual colony loss survey, which has been conducted since 2006, has been an integral part of that effort.

The survey asks commercial and backyard beekeeping operations to track the survival rates of their honey bee colonies. Nearly 4,700 beekeepers managing 319,787 colonies from all 50 states and the District of Columbia responded to this year’s survey, representing about 12% of the nation’s estimated 2.69 million managed colonies.

The Bee Informed Partnership team said multiple factors are likely responsible for persistently high annual loss rates and this year’s jump in winter losses. They say a multi-pronged approach—research, extension services & education, and best management practices—is needed to combat the problem.

The number one concern among beekeepers and a leading contributor to winter colony losses is varroa mites, lethal parasites that can readily spread from colony to colony. These mites have been decimating colonies for years, with institutions like the University of Maryland actively researching ways to combat

them. “We are increasingly concerned about varroa mites and the viruses they spread, said vanEngelsdorp. “Last year, many beekeepers reported poor treatment efficacy, and limited field tests showed that products that once removed 90% of mites or more are now removing far fewer. Since these products are no longer working as well, the mite problem seems to be getting worse.”

“But mites are not the only problem,” continues vanEngelsdorp. “Land use changes have led to a lack of nutrition-rich pollen sources for bees, causing poor nutrition. Pesticide exposures, environmental factors, and beekeeping practices all play some role as well.”

Karen Rennich, executive director for the Bee Informed Partnership and senior faculty specialist at the University of Maryland, elaborated on land use and environmental factors that may be significant in bee colony loss, including increases in extreme weather.

“The tools that used to work for beekeepers seem to be failing, and that may be evident in this year’s high losses. A persistent worry among beekeepers nationwide is that there are fewer and fewer favorable places for bees to land, and that is putting increased pressure on beekeepers who are already stretched to their limits to keep their bees alive,” said Rennich. “We also think that extreme weather conditions we have seen this past year demand investigation, such as wildfires that ravage the landscape and remove already limited forage, and floods that destroy crops causing losses for the farmer, for the beekeeper, and for the public.”

According to Rennich and Williams, more research is needed to understand what role climate change and variable weather patterns play in honey bee colony losses.

Original article: U.S. Beekeepers Suffered Higher than Average Colony Loss Last Year, with Winter Losses the Highest Recorded, According to UMD-Led Annual Survey