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Honey Bee Health

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In the words of Monty Python: "and now for something completely different..."

Sitting in East-Central Illinois, when we think agriculture, we think corn and soybeans. I wanted to draw attention to a small but vital portion of Illinois agriculture that is currently in tough straights. Folks worrying about being able to get a crop in the ground this wet spring can probably sympathize with their neighbors in the beekeeping industry who are also struggling against circumstances beyond their control. Many U.S. beekeepers lost an average of a third of their colonies over the past five winters. For some producers, these losses are much worse. While a quarter of commercial producers, defined as those with more than 500 colonies, have losses in the acceptable range of below 15%, another quarter have losses greater than 50% – a devastating cost. These losses not only affect the beekeepers themselves. Many crops that rely on pollination, like California almonds, have been struggling to find enough colonies to pollinate their crops. For those Illinois farmers who grow crops like pumpkins, bees and other pollinators are vital.

The specific culprits of these colony losses vary widely. Many people may have heard about colony collapse disorder (CCD) – the mysterious ailment where beekeepers find that a colony has completely disappeared, with no dead bees to indicate what happened. But often colonies die from more conventional pests, such as varroa mites and nosema, and bacterial diseases like American Foulbrood. While many producers use conventional treatments for these pests, beekeepers vary greatly in their pest management approaches, and we'd love to have a better idea about what works and where.

I was surprised how little data there on the U.S. beekeepers, their current pest management practices, and their economic well-being (no pun intended). To alleviate this, on Tuesday of this past week the USDA's National Institute of Food and Agriculture announced that is funding a five-year initiative called the [Bee Informed Partnership](#). The Partnership will work with beekeepers to find out what beekeepers are doing in the country and how well it appears to be working. We want to use these data to predict potential disease loads in different regions in different times and for different operations, and then determine the best management practices. What works for a back-yard beekeeper in Alabama might well not be what works for a commercial producer in Illinois.

The first thing we hope to get is information from beekeepers. Some of the surveys planned by the Partnership include the continuation of the colony winter loss survey, an annual survey of management practices and a survey of pollinator availability. Other surveys will focus on determining colony mortality, parasite loads and socioeconomic factors. The idea is to then use statistical tools common to

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Epidemiology and Economics to identify common management practices and develop best practices on a regional and operationally appropriate level. We will include many institutions already involved in pollinator work, but will also strive to include citizens involved in bee keeping or other aspects of the problem for data collection and integration.

Along with Agricultural Economists from the University of Illinois (aka yours truly), the group includes scientists from Penn State, the University of California, University of Georgia, University of Tennessee, University of Minnesota, North Carolina State University, Appalachian State University, Lincoln University, USDA-ARS and the Florida Department of Agriculture. Other collaborators include NASA and USDA-Animal and Plant Health Inspection Service. If you know are a beekeeper, or know of a beekeeper in your area, please point them to our website. With involvement and information we hope we can improve the economic situation for beekeepers and keep those bees out there pollinating crops.

Author's Comment

"The 2010/2011 winter loss survey results were released today, showing that the US lost around 30 percent of its bee colonies this past winter – approximately the same level seen over the 5 years the survey has been conducted. Particularly worrying, six out of every ten beekeepers are reporting losses higher than the level beekeepers feel are sustainable. More details on regional results to come." Along with the link to the ARS release [here](#).