

Pebbles Lacross
10.1.2018

Due:

2.2.4 Solution Proposals

Problem Statement: Does Colony Collapse Disorder exist and how can we prevent it?

Background Information: According to VanEngelsdorp et al over the past two winters unexplained losses of managed honey bees has occurred, which we know of as Colony Collapse Disorder. Last year my bee mentor and I lost a total of three hives over the winter and this summer a total of two. Overwintering bee hives is a huge concern for many bee keepers in the Northern US and Canada. There appears to be a direct correlation between CCD and pathogens or other stress factors. This is not a new issue and since 1891 bee keepers have been dealing with this sudden loss. What could the potential solutions to colony collapse disorder be?

Proposed Solution: I propose conducting surveys of bee keepers to determine how many have lost their bees in the winter, those who have not determine what they are doing to reduce the potential of loss including; keeping Africanized bees, feeding bees, fighting mites or increasing bee numbers and how they are doing so.

List of Needs for the solution:

*Computer access *Group of bee keepers to take the survey
*Survey Money / Survey

Procedures:

- Conduct research on what potential can cause CCD
- Write your survey based on your research
- Give survey to the State bee inspector and ladies on Women in Bee Keeping on Facebook
- Gather Data and Compile results
- Review and conduct more research

Data Analysis and Expected Results

*I expect to give surveys the week of October 15th, 2018, with first asking permission of the facebook group I hope to post it on but also the state bee inspector to determine if he has any data (I have already done this via e-mail)

* I am not sure what the surveys will tell me. Colony collapse disorder appears to be something that just happens with really no reasoning behind it. I am curious to see what will information I may gather.

Conclusion:

I conclude that I will attempt to determine what the cause of colony collapse disorder is, if there is one and what bee keepers are doing to help reduce the potential for CCD. I propose that I will conduct surveys of bee keepers to determine how many have lost bees in the winter from potentially CCD and what they are doing to reduce this potential.

Literature Review / Sources Cited

B. (2013, May 24). Honey Bee Colony Collapse Disorder: A Literature Review. Retrieved from <https://www.biofortified.org/2008/11/honey-bee-colony-collapse-disorder-a-literature-review/>

According to Anastasia Bodnar and Biology Fortified CCD is characterized as a mysterious loss of worker bees in the hive. It appears again that CCD is far from explained and there is NOT one factor.

Spivak, M. (n.d.). Retrieved September 30, 2018, from

https://www.ted.com/talks/marla_spivak_why_bees_are_disappearing

People are paid to do the business of pollination by hand with a paintbrush. This is incredible common because bees are not always available where the crops are needed. Spivak goes on to talk about how the colony can be considered as super organism with no central authority. She also goes to say that their natural defenses have been around for 50,000 years and now all of the sudden they are dying 7 years ago. Something is radically wrong and the cause is multifaceted; disease parasites, monoculture, lack of flowers and pesticides.

VanEngelsdorp, D., Evans, J. D., Saegerman, C., Mullin, C., Haubruge, E., Nguyen, B. K., . . .

Pettis, J. S. (n.d.). Colony Collapse Disorder: A Descriptive Study. Retrieved from

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0006481>

VanEngelsdorp et al. Discusses how there is not one most-likely cause of CCD but rather it would be again a variety. The largest potential was mite load.

Winston, M. (2014, July 15). Our Bees, Ourselves. Retrieved from

<https://www.nytimes.com/2014/07/15/opinion/bees-and-colony-collapse.html>

Winston in his article *Our Bees, Ourselves* discusses the phenomenon of honeybee colonies are dying in huge numbers and how as a society humans need to listen. He also goes into how there is not one cause but rather so many potentials including; pesticides applied to fields, bacteria, fungus, pests and disease, etc.