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Outcomes of the Thriving Hives Beginning Beekeeping Extension Education

Andree' Walker Bravo

Abstract

The Thriving Hives Beginning Beekeeping Education program caters to novice beekeepers to promote best practices, confidence in beekeeping skills, and healthy apiaries around the state. A major objective of the program is to educate participants on the management of Varroa mites in their hives.

Introduction

In recent years, beekeepers have experienced a 20-30% increase in hive losses statewide according to the Utah Department of Agriculture and Food Apiary program. New beekeepers often face challenges in keeping their hives healthy and alive overwinter. According to the Utah Department of Agriculture and Food Apiary (UDAF, 2022), “Varroa mites and the diseases they carry represent the single biggest challenge facing honey bees in most areas of the world.” In Utah, the majority of hive deaths are due to Varroa mite infestations caused by poor hive management. Therefore, proper Varroa mite management should be the top priority for beekeepers. Beekeepers must regularly monitor their hives for this parasite and treat their colonies with an effective Varroicide when mite levels are too high. While there are many educational resources available on Varroa mites, the amount of information can be overwhelming for new beekeepers.

Response and Target Audience

The Utah State University (USU) Extension Thriving Hives program was developed in 2016 to provide educational hands-on experiences to novice and advanced beekeepers. The program initially focused on advanced beekeeping workshops. However, due to the increased demand by new beekeepers for educational opportunities, the program transitioned to facilitate beginning beekeeper classes. In Salt Lake County, the Thriving Hive Beginning Beekeeping program is a season-long (February through October) workshop series offered to individuals who are interested in beekeeping but do not have bees and are new to apiculture.

The Thriving Hive series includes lecture and hands-on learning components and is taught by both USU faculty and guest speakers. The hands-on portion of the Thriving Hive program is facilitated at Wheeler Historic Farm in Murray where USU Extension maintains a 10-15 hive apiary. In small groups, participants are assigned a hive to maintain throughout the season, and they are responsible for the management and decision-making of the hives with assistance from the facilitators.

The Thriving Hive Beginning Beekeeping Series is advertised through the USU Extension statewide calendar (<https://extension.usu.edu/calendar>), the local county beekeeping associations, and social media sites such as Backyard Homesteading, and USU Garden Experts. The series has a cap of 30 participants to allow for individualized hands-on time in the hives. Youth are

permitted in the course with a participating adult. Youth and adult participants usually enter the program with limited knowledge of beekeeping. Table 1 provides a summary of attendance to the 2022 Thriving Hive Beginning Beekeeping program sessions.

Table 1: The Thriving Hive Beginning Beekeeping Series Classes in 2022.

Date	Topic	Number of Attendees
February 15	Beginning Beekeeping Overview	27
March 1	Bee Biology	24
March 15	Apiary Workday	21
April 5	Bee Nutrition and Feeding	21
April 19	Native Bees	21
April 25	Beehive Installation	20
May 3	Bee Pests and Diseases	20
May 5	Queen Release Check	8
May 12	Optional Feeding	4
May 17	Apiary Workday/Mite Check	19
May 27	Optional Feeding	4
June 7	Planting for Pollinators	21
June 21	Apiary Workday/Mite Check	20
July 5	Apiary Workday/Mite Check	15
July 19	Apiary Workday/Mite Check	17
August 2	Optional Honey Harvest	1
August 16	Honey Extraction	22
August 23	Selling Honey Laws and Regulations	12
August 30	Making Products with Honey and Wax	20
September 13	Optional Bee Survey Help	1
September 20	Prepping for Winter	16
September 23	Apiary Workday/Mite Check	4
October 4	Winter Prep/Course Wrap-Up	18

Outcomes

A total of 28 individuals participated in the 2022 series, and attendance varied throughout the season (see Table 1). Attrition throughout the year was expected since the course is long and requires commitment from participants. Based on retrospective evaluation results shown in Table 2 ($n = 13$), no participants entered the series with above-average or excellent knowledge of the topics. However, results showed a major improvement in participants' knowledge of all topics, specifically Varroa mites and the services performed by the county bee inspector, after the series.

Table 2. Percent change of Participant Knowledge Rating on Honey Bee Pest Topics

Topic	n	Frequency (%): Above Average and Excellent Knowledge	
		Before	After
Honey bee diseases	13	0	61.5
Varroa mite biology	13	0	69.2
Varroa mite control options	13	0	61.6
Services of the County Bee Inspector	13	0	100

From Table 3, evaluation results also indicated 100% of respondents strongly agreed that the series increased their comfort level in working with bees, increased their confidence in being a beekeeper, helped them be a more successful beekeeper, and gave them the confidence to start keeping bees. While participants rarely monitored and treated for Varroa mites before the series, Table 3 shows after the series, participants had strong intentions to implement Varroa mite management practices.

Table 3. Percent change of Participant intention on Honey Bee Pest Management Practices

Behavior	n	Frequency (%): Usually and Always	
		Past Behavior	Future Intentions
I use Varroa mite monitoring methods	6	0	92.3
I treat for Varroa mite when appropriate	6	0	100
I use the services provided by the county inspector	6	0	69.2

The evaluation gathered open-ended data from participants. Most participants (92%) indicated that they would implement skills learned in these classes. One participant said they would monitor colonies for pests and disease, utilize hive inspection services, and prepare for successful overwintering. They also said, “seeing the insect specimens and photos were very helpful”. Another said, “when I get a hive I plan to do routine checks. Especially in the spring to check that the queen bee is laying eggs, any signs of disease like American/European Foulbrood and will continue to follow the handouts to monitor the lifecycle of the bees. I also plan on checking for mites using either the powder or alcohol method as well as using the resources provided to treat for mites properly.”

When asked about the value of the Thriving Hive Beginning Beekeeping program, one participant said, “This class is instrumental in helping educate novice beekeepers as well as those interested in learning more about helping to support honey bees. The wealth of resources provided helps educate and prevent disease spread and ensures proper bee-keeping techniques are used.” Another said, “The class emphasized how to be better stewards of bees, and the responsibilities to our neighborhood and community, especially when it came to the varroa population. I am amazed each time I learn more about bees, bee behavior, and bee biology. The class also highlighted the partnership that should exist between the local beekeeper and the bee inspector. Because of the class, we called out our local inspector to ensure that we

were on the right path as new beekeepers. I wish that they offered a follow-up class in between "newbees" and the master class!"

Public Value and Next Steps

Outcome results of the Thriving Hive Beginning Beekeeping program in Salt Lake County indicated participants experienced an increase in their knowledge of beekeeping and intended to properly monitor for and treat Varroa mites. With close collaboration with the Utah Department of Agriculture and Foods Apiary program, the Thriving Hive program effectively responded to the apiculture needs in Utah. Moving forward, the Thriving Hive Beginning Beekeeping program will continue to deliver hands-on experiential education to novice beekeepers in Utah. With positive evaluation results and increased demand for hands-on programming, a coordinator will be hired for the 2023 series to increase the program's capacity to provide individualized learning opportunities for participants.

References

UDAF (2022). Apiary Inspection and Beekeeping. Utah. <https://ag.utah.gov/farmers/plants-industry/apiary-inspection-and-beekeeping>