

New ISU Apiary and ISU Honey Production

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Introduction

In spring 2020, ISU unveiled a new honey bee apiary to produce ISU-branded honey. The project was funded by a mini-grant from the office of the Dean of the College of Agriculture and Life Sciences. The apiary was sited at the ISU Horticulture Research Station, Ames, Iowa, with 20 hives. The Station provides on-site support to the apiary. Iowa State University has had several apiaries in the past reserved specifically for research conducted by the labs of Amy Toth and Matt O'Neal. However, this is the first time honey has been produced, bottled, and sold through the university. In addition to honey production, the apiary also serves as a beekeeping demonstration site, a teaching space for undergraduate classes, and a space for collaborative beekeeping research.

Materials and Methods

New equipment was purchased in March 2020, and honey bee colonies were provided by the Toth and O'Neal labs. The hives were painted cardinal and gold and relocated to their new site at the Horticulture Research Station in April (Figure 1). Through the summer, the hives were maintained with support from research station staff with assistance in hive inspections and eventually honey harvesting. To support the hives, the Horticulture Research Station planted oats and clover to provide the bees with plenty of forage.

In August, the team began harvesting and extracting honey. A new 12-frame electric honey extractor was purchased to match the

scale of production. Honey bottle labels were designed working with Iowa State University Printing Services staff. In the first year of the apiary, over 700 lb of honey were harvested, bottled, and made available for sale. By December 2020, nearly every bottle had been sold.

In addition to honey production, the apiary is a site for extension and community engagement. Due to health and safety concerns, all extension activities were offered virtually in 2020, but the apiary was utilized in multiple online presentations for beekeepers, including a Beekeeper Fun Day in June in partnership with the University of Nebraska-Lincoln. The apiary's progress also was documented in social media via the [@iowastatebees Instagram account](#) to engage with beekeepers and answer hive management inquiries.

The apiary also provided ISU students with hands-on learning opportunities. Four hives were relocated to campus during the fall semester to make them more available to students in the ENT 358X course titled Bee Biology, Management, and Beekeeping taught by Amy Toth, associate professor, Department of Ecology, Evolution and Organismal Biology; and Randall Cass, bee extension specialist. Fifty students participated in class field days at the hives, many of them working with honey bees for the first time. As part of the course, students harvested honey during a field day held in the ISU Food Sciences Wet Processing Plant. Taking advantage of having hives centrally located on campus, the bees were visited by 20 veterinary medicine graduate students interested in learning more about beekeeping veterinary services as well as four biological and premedical illustration students who will develop outreach materials for the bee program as part of their internship.

Results and Discussion

The honey apiary is furthering ISU bee research efforts this winter as part of an overwintering experiment being conducted with colleagues at the University of Illinois Urbana-Champaign. In Iowa, extreme winter temperatures lead many beekeepers to insulate and wrap their hives with different materials to mitigate the cold. This experiment will explore the effectiveness of widely used overwintering strategies.

Plans are to expand the apiary in coming years to produce more honey. The team also is exploring the possibility of offering more honey products. The honey apiary will continue to be part of collaborative research and cross-departmental engagement as well as hands-on engagement through extension offerings. The beekeeping class will be offered again during the fall semester.



Figure 1. Hive inspections at the new apiary at the ISU Horticulture Research Station, Ames, Iowa



Figure 2. Over 700 lb of honey were produced in the apiary's first year. Bottles were sold online through the ISU Horticulture Research Station website and in the ISU Bookstore.