

Hathaway High Beekeeping Program

IDAF Beekeeping Grant 23-24

Beekeeping Curriculum:

1. Importance of honey bees, pollination, and economy
2. Breeds, anatomy, castes
3. Jobs performed by queen, workers, and drones
4. Hive building and maintenance
5. Managing bees in the hive: diseases, insects, what to look for, making splits, installing queens, making queens
6. Products received from the hive: honey, pollen, beeswax, propolis
7. Marketing the products
8. Careers in beekeeping

Hive Record Keeping Protocol:

- Hive Inspection is carried out by multiple classes multiple times each week during the spring and fall.
- Hive Inspection is done periodically during the summer and winter.
- All beekeeping materials (Suits, Tools, and Smokers) are kept in the classroom so that students can use them as needed. Materials are stored in labeled bins so they can be easily accessed but free of insect pests.

Hive Record Keeping Protocol:

- A spreadsheet that we adopted was used to record data about the hives.
- Students were broken into pairs and assigned hives to inspect. They were given specific instructions of what to look for and what to make note of.

Hive Record Keeping Protocol:

Example of the Hive
Inspection Sheet:

Hive Observation Log Blank ☆ 📄 ☁

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| | A | B | C | D |
|----|---|-------|-------|-------|
| 1 | Hive Number: | | | |
| 2 | Team Names: | Date: | Date: | Date: |
| 3 | What to look for: | | | |
| 4 | Hive temperament: (C)alm, (N)ervous, (A)ggressive | | | |
| 5 | Traffic at entrance: (H)ight, (M)edium, (L)ow | | | |
| 6 | Saw the Queen? (Y)es, (N)o | | | |
| 7 | Population: (H)eavy, (M)oderate, (L)ow | | | |
| 8 | Do bees appear crowded? (Y)es, (N)o | | | |
| 9 | Laying pattern? (U)niform and solid, or (R)andom | | | |
| 10 | See eggs? (Y)es, (N)o | | | |
| 11 | See Larvae? (Y)es, (N)o | | | |
| 12 | Signs of Disease? Hive (B)eatles, (M)ites | | | |
| 13 | Bees crawling on the ground? (Y)es, (N)o | | | |
| 14 | Queen cells? (Y)es, (N)o | | | |
| 15 | Done cells?: (Low, Average, High) | | | |
| 16 | Open nectar in cell?: (Yes or No) | | | |
| 17 | Bees bringing in pollen: (Yes or No) | | | |
| 18 | Honey Stores: (High, Average, Low) | | | |
| 19 | Need to feed hive: (Yes or No) | | | |
| 20 | | | | |
| 21 | Other Notes: | | | |
| 22 | | | | |
| 23 | | | | |

Quarter 2 (April-June) Report 2023:

1. All eight hives were installed in our bee yard the first week of May by the students and myself after the nucleus hives were dropped off to us by Mr. Wes Card.
2. The hives were observed once a week after the initial installation to look for potential problems.
3. Two weeks after the initial installation of the hives, medium boxes were added to five of the hives by the students for the production of honey.
4. At the end of May, medium boxes were added to the three remaining hives.
5. During the month of June, the hives were checked every other week to look for potential problems and observe the amount of honey being stored in the medium boxes. All of the hives are currently doing well even though it is very hot and dry. I have put a water source in the bee yard so that the bees will not have to travel far for water.
6. Three of my other hives have honey that will need to be extracted at the beginning of July. The extractor that was purchased through this grant will be used to complete that project. I will have students help me in that process when it is time. The honey will then be stored and later bottled for the students.
7. When school starts at the beginning of August, the students will do more regular inspections of the hives.

Quarter 3 (July - September) Report 2023:

1. My Agriscience 1 classes completed a unit on bees within the first four weeks of school. We covered three main areas: Bee Biology, Hive Maintenance, and Bee Products. Additional lessons will be taught in the future.
2. In addition to the lessons taught in the classroom, the hives are observed once a week by 3 of my classes to look for potential problems.
3. Hives have also been monitored for queen cells, drone cells, worker brood, open honey and capped honey. I also have students observe the amount of pollen that is deposited in the hive.
4. On August 11th, 2023, several students, several community members, and myself extracted 111 pounds of honey from the other existing hives in the bee yard. None of the hives from the grant had honey extracted from them. We have added one additional medium box to a strong hive in response to the goldenrod blooms and the bees bringing in pollen.
5. I am in the process of choosing individual apprentices for each of the hives. At this time, I am involving the entire class in the learning process. I have all of them making observations as we go through each of the hives.
6. I am currently waiting on bottles and labels for the honey that was extracted. When those materials arrive, I will teach the class how to properly bottle and label the honey for sale.
7. We are also currently in the process of feeding the hives sugar water. Mr. Wes Card has provided us with jars and the sugar solution. We are responsible for swapping out the jars as they are emptied and for maintaining the hive covers needed to use the jars.
8. With the cooler weather coming, we will begin closing up the screened bottoms of the hives so that the bees can maintain a constant temperature in the hives.

Quarter 4 (October - December) Report 2023:

1. We have been monitoring the hives as the weather allows.
2. I am still in the process of choosing individual apprentices for each of the hives. At this time, I am involving the entire class in the learning process. I have all of them making observations as we go through each of the hives. I hope to have the students chosen soon so they may begin recording data for this calendar year on their particular hives.
3. My Ag. Construction class will be building hive bottoms, hive covers, and nuc boxes soon so that we will be prepared for this upcoming spring. The nuc boxes will be used to make splits of the existing hives when the time is right.
4. I have received bottles and have purchased other materials needed to bottle honey. We are currently bottling it and labeling it as needed for sale.
5. We are also currently in the process of feeding the hives sugar water. Mr. Wes Card has provided us with jars and we are providing the sugar solution. We are swapping out the jars as they are emptied and maintaining the hive covers needed to use the jars.

Quarter 1 (January - March) Report 2024:

1. We have been monitoring the hives as the weather allows.
2. We have not begun adding boxes yet but we have been monitoring the boxes for growth. All boxes are showing signs of development
3. We have stopped feeding sugar water due to the increase in temperature and that bees have been observed bringing in pollen into the hives.
4. As we begin the busy season I have had some of my students going through boxes and frames and preparing them so that when we do start adding boxes, they will be ready.
5. All of last season's honey has been bottled and honey sales are still going strong.

Quarter 2 (April - June) Report 2024:

1. In April, my students and I checked the boxes at least once every other week and then that frequency changed to once a week in May.
2. In May, the students and I began adding medium and deep boxes to several of the hives.
3. The purchase of the medium frames came is very useful because I had medium boxes that were previously donated but did not have any frames for them. We need these frames and boxes for the 8 hives this spring.
4. I have been inspecting the boxes throughout the month of June to look for potential issues.
5. Later in July, the extraction equipment will be prepared for when the students return.
6. When the students return to school, I plan to pull frames and extract honey with them in class during the week.

Installation of New Hives:

Students were taught how to properly setup the new deep hive boxes provided by the LDAF Beekeeping Grant.



Installation of New Hives:

Students were then taught how to properly transfer frames from the nucleus hives into the new deep hive boxes provided by the LDAF Beekeeping Grant.



Installation of New Hives

Each frame was inspected as it was transferred from one hive to the other. Students were taught how to identify workers, drones, and the queen.



Installation of New Hives

The students are taking turns transferring frames from one hive to the other.



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Installation of New Hives

As the final frame was put into each hive, students were taught how to properly space the frames, install the inner cover and the outer cover. Proper use of the hive tool and smoker was constantly reviewed.



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Hive Observation

After the initial installation, I reviewed what we were looking for and why paying close attention to what was on the frames was important.



Hive Observation

Students inspected the hives after a few lessons of what to look for.



Hive Observation

Students participated in the hive observation process, then shared with each other what they observed as they went through each hive.



Hive Observation

Students looked at frames and differentiated brood frames from capped honey frames.



Pulling Frames From Existing Hives to be Extracted

Members from the Bayou Beekeeper's Beekeeping Club showed us which boxes and frames were ready for the harvesting process.



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Members from the Bayou Beekeeper's Beekeeping Club showed us which boxes and frames were ready for the harvesting process.



Using Our New Extractor to Extract Honey

We had both deep and medium frames ready for harvest this season as shown.



Using Our New Extractor to Extract Honey

Preparing to extract for the first time.



Using Our New Extractor to Extract Honey

Members from the Bayou Beekeeper's Beekeeping Club taught us about the honey extraction process.



Using Our New Extractor to Extract Honey

Students were excited to prepare the frames for extraction and to begin the process.



Using Our New Extractor to Extract Honey

Members from the Bayou Beekeeper's Beekeeping Club taught us how to properly uncap frames.



Using Our New Extractor to Extract Honey

Students uncapping frames and preparing them for extraction.



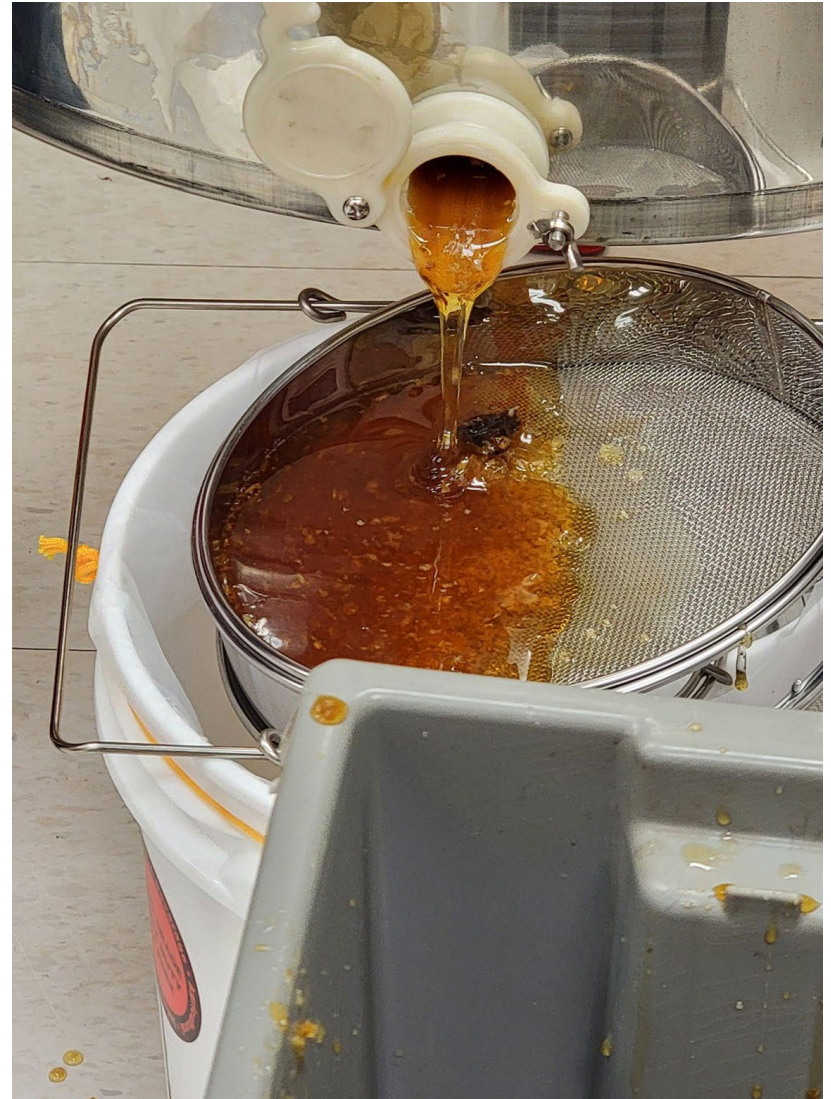
Using Our New Extractor to Extract Honey

Students uncapped frames and prepared them for extraction.



Using Our New Extractor to Extract Honey

The honey was passed through a double sieve as it was extracted.



Using Our New Extractor to Extract Honey

The honey was allowed to drip from the uncapping tank as we completed the harvesting process.



Using Our New Extractor to Extract Honey

We extracted 111 pounds of honey from our very first harvest.

Hopefully, we can triple this in our upcoming harvest.



Bottling Honey

Students bottled the honey into 12 ounce bottles and then labeled them.



Bottling Honey

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Bottling Honey

The final product!



Honey Extraction 2024

Students uncapped the frames and prepared them for extraction.



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Honey Extraction 2024

Students uncapped the frames and prepared them for extraction.



Honey Extraction 2024

Students placed frames in the extractor as Richard Metcalf monitored the extraction process.



Honey Extraction 2024

The extraction was a success!

341 Pounds!



Honey Extraction 2024

Students bottled the honey into 1 pound bottles and then labeled them.



Honey Extraction 2024

The final product ready to sell.



The Bee Vacuum

Removing bees from various schools and buildings of the Jefferson Davis Parish School System has allowed us to expand our bee yard. This a hive I removed from behind the Jeff Davis Parish Food Services Warehouse. The vacuum was extremely helpful in removing this hive and it allowed me to bring more bees back to our bee yard.



The Bee Vacuum in Use



Student Testimonials - Cameron G.

1.What bee lesson was the most interesting to you and why?

My favorite bee lesson is in the spring when the bees start to produce. I find a full hive really interesting and satisfying. Also extracting would be really cool. It would be interesting to see the honey extracted.

2.What did you find the most interesting about working in the bee yard?

I found the wax pretty interesting and how heavy honey is. The bee yard was really cool and I'm glad we got to experience it in my time. I hope it stays around because it's something different. It can also help make money for the shop.

3.What is the importance of bees in the agricultural industry?

The importance of bees in the agriculture industry is the pollination of plants and the production of honey. Bees help plants to grow and help the feed animals that we need to survive.

Student Testimonials - Dani T.

1.What bee lesson was the most interesting to you and why?

The bee lesson that was the most interesting to me was the honey making and extracting part. Learning how the bees collect nectar and pollen and transfer it to the comb was also interesting. To then see the capped honey go from the hive to the extractor to being bottled was really neat.

2.What did you find the most interesting about working in the bee yard?

I found looking at the complexity of the bees the most interesting part about working in the bee yard. I like looking for the queen and the drones as well as looking at the larva. Each time we went into the bee yard, there was a new lesson. I always learned something new about bees and the way they worked.

3.What is the importance of bees in the agricultural industry?

The importance of bees in the agricultural industry is to pollinate the crops. When collecting nectar, they also collect pollen. As they go flower to flower, they spread the collected pollen and pick more up. Therefore pollinating the crops that are harvested for food. They help to create the food we eat.

Student Testimonials - Logan L.

1.What bee lesson was the most interesting to you and why?

The most interesting bee lesson was how all the bees work together to make the honey and how they all do their jobs like gathering the products to make it. I also found it interesting how the bees are able to regulate the hive temperature.

2.What did you find the most interesting about working in the bee yard?

I think a very interesting thing about the bee yard is that if the whole hive is caught and the queen is not with them, the bees will do whatever it takes to get back to their queen. The size difference in the bees when comparing the queen to the drones and the workers was also interesting.

3.What is the importance of bees in the agricultural industry?

They are the cornerstone of most plants that need to be pollinated. Trees such as cherry and almond trees need bees to be pollinated. We need bees to pollinate many of the plants that we eat. The wind can pollinate some plants but bees take care of so many others.

Student Testimonials - Blaine C.

1.What bee lesson was the most interesting to you and why?

I found the lesson about honey the most interesting. I found this interesting because of how honey is made. Also, in the honey making process, how many bees are involved. I also found it interesting that honey color and taste depended on the seasonal vegetation found in our area.

2.What did you find the most interesting about working in the bee yard?

I found how bees built the comb and stored honey the most interesting. I was amazed at how they worked together to get the job done.

3.What is the importance of bees in the agricultural industry?

Bees are important because they pollinate plants and increase yields. The honey they produce is also an important aspect.

Student Testimonials - Nathan M.

1.What bee lesson was the most interesting to you and why?

The bee lesson I found the most interesting was when we learned how to extract honey. This was my favorite because it is the best way to make money off of bees.

2.What did you find the most interesting about working in the bee yard?

The most interesting aspect of the bee yard is that we got to see first hand comb being built and honey being created and stored as we inspected frames weekly.

3.What is the importance of bees in the agricultural industry?

Bees are important because of the pollination that they carry out for many crops.

Student Testimonials - Tristan M.

1.What bee lesson was the most interesting to you and why?

The bee lesson that interested me the most would have to be the lesson about the bees work and their main purpose. I've had the opportunity to see how the bees collect pollen and take it back to the hive. I've also learned how bees produce honey and how bees are born.

2.What did you find the most interesting about working in the bee yard?

What interested me the most about working in the bee yard was opening hives. I got to see how everything works inside a hive and how the bees operate. It's an opportunity that I'm glad I got to experience and it is something to look back on.

3.What is the importance of bees in the agricultural industry?

Bees produce honey and honey is used on a daily basis in many different ways.

Student Testimonials - Tristan H.

1.What bee lesson was the most interesting to you and why?

The bee lesson that was the most interesting is how bees work together to make honey.

2.What did you find the most interesting about working in the bee yard?

I think it is cool how the bees operate. I also like their honey.

3.What is the importance of bees in the agricultural industry?

The importance of bees in the agricultural industry is that they help crops by pollination.

Student Testimonials - Ethan G.

1.What bee lesson was the most interesting to you and why?

The extraction of honey was the most interesting lesson because the process of doing so is very intriguing.

2.What did you find the most interesting about working in the bee yard?

The most interesting thing about working in the bee yard was being able to hold the queen bee. I also liked being able to see honey built up in the wax comb of each frame.

3.What is the importance of bees in the agricultural industry?

The bees support all of the products made up of honey. They also pollinate many plants in our environment. They support the economy of agriculture.

Student Testimonials - Carson R.

1.What bee lesson was the most interesting to you and why?

The bee lesson that was the most interesting to me was bee anatomy. Reason being, it was interesting to have/gain the knowledge of knowing the different parts of the bee.

2.What did you find the most interesting about working in the bee yard?

The bee yard I find really interesting because not many people knew much about it, especially me. Watching the bees just work and watching their progress over the year has to be my favorite part.

3.What is the importance of bees in the agricultural industry?

The importance of bees in the agricultural industry is to pollinate plants. That process contributes to the growth of gardens, wildlife habitats, and other plants in nature.

Student Testimonials - Chase D.

1.What bee lesson was the most interesting to you and why?

The bee lesson that was the most interesting to me was how honey was made. I think it is because it all starts from a simple flower. The bees collect nectar and pollen and in very unique processes use it to make honey.

2.What did you find the most interesting about working in the bee yard?

What I found most interesting about working in the bee yard was seeing all the stuff that the bees would create, such as honey, wax, and comb. It was interesting to see how the hive was run. I also liked to find the queen and the drones.

3.What is the importance of bees in the agricultural industry?

There are many importances of bees in the agricultural industry. The most important use being pollination. Without bees, we would not have much to eat.

Thank You!

**From the
Hathaway High School Agriscience/FFA
Program**