

## **Crop Genetics: From Field to Lab Table**

Meet Ed. Ed was a great host, and an even better storyteller. Recently, we spent a day on Sundance Family Farms, which is run by Ed and his family. He gave us a tour of the farm, starting near the peanut field and working our way through different fields of peppers, tomatoes, squash, beans, and animals. The rigorousness of organic farming was explained, including some of the requirements needed to keep that title. There are the obvious ones such as no chemicals used, instead, Ed uses pesticides which are derived from soil bacteria. But there are also requirements such as the wood used in fencing or trellises must also be organic, or it could void a large area of his farm from that organic title. By having the experience to tour the farm, we were able to see how much work goes into organic farming. We learned that it takes patience when farming on organic farms. He shared with us that he learned how to perfect his farm through trial error, which initially reminded me of research. During the tour there were so many crops that Ed showed us, and we got to hear about how he keeps predators such as deer away from his crops. This is one of the biggest problems of organic farming because there is only so much, he can do to protect his crops from animals. One way he protects his crops is by his dogs. They were very friendly but were ready to protect the farm whenever they needed to.

At the end of our tour with Ed, he asked us if we'd assist in weeding the peanut field. So, we did. We sat for about an hour and a half and picked through the field. Weeding the peanut field was something I was happy to do. We ended up helping Ed save his peanuts. Weeding the peanuts was a tedious task, but it was worth it. Ed even let us try some peanuts that were not regular peanuts. We ran into different weeds and different insects; Ed would explain what they were doing there and whether they needed to be removed. One of these insects was the Cucumber Beetle, an insect that I've seen the effects of firsthand this year.

My research this summer was primarily with squash and disease resistance. I had seen the effects of these cucumber beetles firsthand, how they can bring disease to the cucumbers, squash, and melons on the farm. The cultivars have a certain amount of resistance to these diseases, but they certainly can fall short. Wild cucumbers, melons, and squash have a much higher natural resistance to these bugs and diseases.