

Smokey House Blueberry Production Study Report



Blueberries are Vermont's most important berry crop with 289 commercial producers reported in the 2017 Agriculture Census. Thousands of Vermont landowners also raise their own blueberries. Since 2011, spotted wing drosophila has been a serious pest in Vermont blueberry production. The fly infests commercial blueberry patches where it cuts into the blueberries and lays its eggs. This leaves the blueberries soft and full of small maggots which renders them unmarketable. Economic loss due to spotted wing drosophila blueberry damage in Vermont is significant but the extent is unknown (a 2020 study conducted on Maine's wild blueberry industry estimated that an annual loss of \$6.8 million could occur). While not a new pest, bird predation on blueberries can also result in significant economic loss to berry producers.

During the summer of 2024 Smokey House Center launched a pilot research study focused on pest management and production in its historic u-pick blueberry patch. The program focused on studying the impacts of different netting techniques on management of two of the most significant blueberry pests: birds and drosophila flies. In keeping true to the long-held legacy of Smokey House Center, the program also provided hands-on work and learning opportunities to two local high school students who oversaw the study.

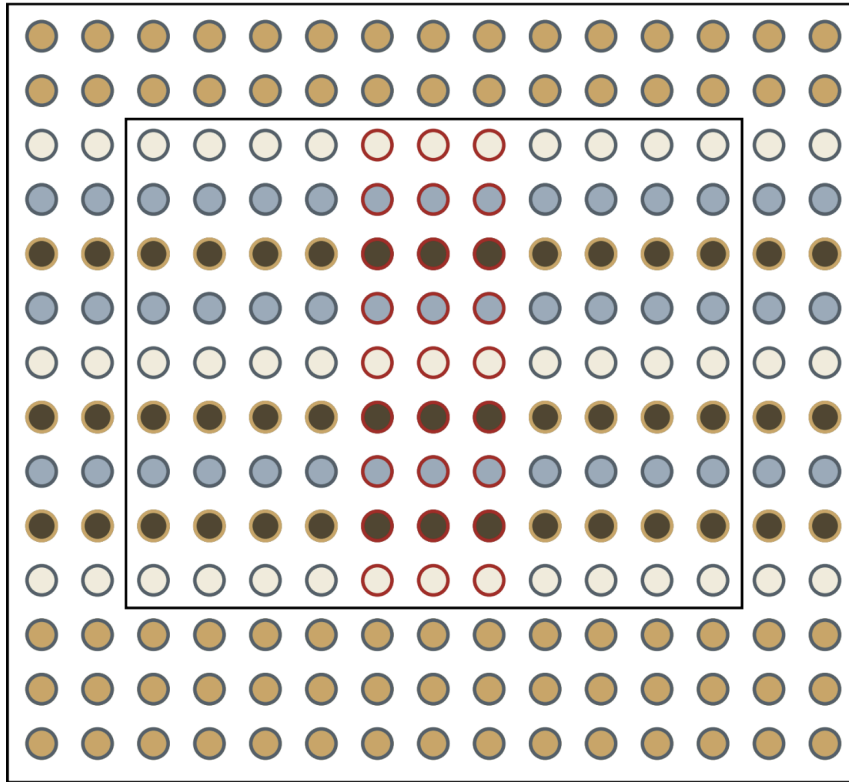
Jasmine McFadden and Rylan Toner spent their summer at Smokey House as our Summer Blueberry and Farm Assistants, where they worked alongside Smokey House staff to oversee the research project in addition to helping with other farm projects and property maintenance efforts. Together, they helped set up the three different netting treatments (no netting, bird netting, and specialized fine mesh netting) within the selected research block and collected data on a weekly basis.

This included harvesting and weighing berries from the three different treatments as well as monitoring pest traps for drosophila fly populations. By the end of the summer, Jasmine and Rylan had collected a total of 132 lbs of blueberries from the research block. The data showed major differences between the production of the three treatments; the no netting treatment produced the lowest harvestable yield of berries with the bird netting treatment showing a 45% increase in production and the specialized fine mesh netting showing a 60% increase comparatively.

Observationally, it was a particularly intense year for bird pressure on the farm; a large flock of starlings spent most of the summer living near the blueberry patch and visiting often. We did run into a number of challenges conducting the project including scheduling conflicts with our interns, flaws in netting design for our fine mesh netting treatment, and a delayed delivery of pest monitoring traps. However, the findings from the summer show the importance of these pest control measures on blueberry production. We will take our findings and lessons learned from the 2024 growing season and set up a more rigorous study with our interns during the growing season of 2025.



Intern Rylan Toner tabling at the blueberry patch during Smokey House Center's annual open house.



Blueberry Production and Health Study

- No netting
- Bird netting
- Drosophila netting
- Untreated
- Sampled

Weekly Tasks:

1. Pick treatments
2. Record weight and volume
3. Float test 100 berry samples
4. Freeze gallon bag samples (1 per treatment)
5. Catalog pest traps

Supported by a grant from City Market.

Study design for the project showing the randomized block design of the three different netting treatments within the existing blueberry patch.



Jasmine and Rylan harvesting blueberries from a bird netting treatment row. Berries from each treatment were harvested weekly and weighed throughout the season.



A day's harvest of blueberries. Rylan and Jasmine harvested 132 lbs of blueberries from the study block, all of which were sold in Smokey House Center's farm store or distributed to Vermont Farmer Food Center's Farmacy Program.