

New Jersey Blueberry Growers: 2021 & 2022 Trial Data



Rutgers University R&D Trials

Blueberry anthracnose, *Colletotrichum acutatum*, is the most damaging disease pathogen in eastern highbush blueberry production.

Rutgers University's Specialty Crop Research and Extension Center and PE Marucci Blueberry Cranberry Research & Extension Center, a leading, grower-trusted research center in the US Northeast, conducted trials on the BVT system in 2021 (Year 1) and 2022 (Year 2). Trials for both years were conducted on blueberry crops in three New Jersey locations, and assessed the efficacy of the BVT system against this disease under local conditions.

The Rutgers research team collected data from established blueberry fields where BVT's proprietary biofungicide, Vectorite™ with CR-7, was bee vectored via commercially-managed honeybees. The team also collected data from the same field beyond the vectored range where a grower standard program was applied. In the grower standard locations, some growers sprayed six applications of chemical fungicides while other sites received up to 12 applications of chemical fungicides.

“We are pleased to have had the opportunity to study this new technology. Our experience over the past season shows that the technology has promise, and could be instrumental in reducing disease occurrence while maintaining bee health.”

- **Dean Polk** (Retired in 2022)
Fruit IPM Agent (Professor)
and Interim Director at Rutgers
University Specialty Crop
Research and Extension Center

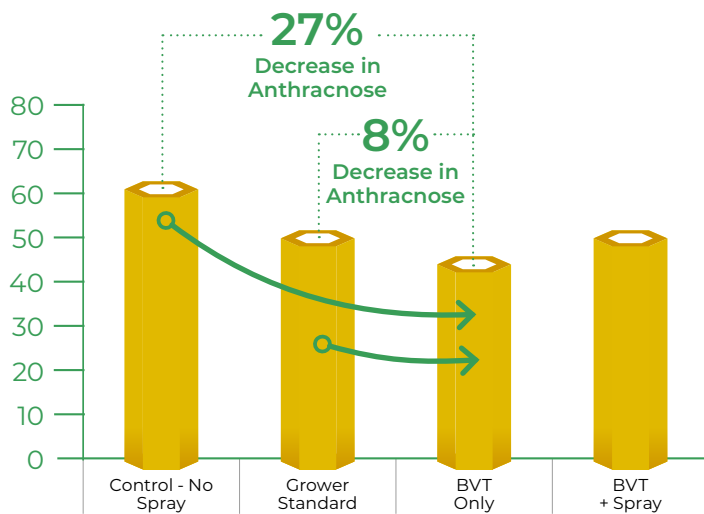
YEAR 1 TRIAL RESULTS FROM 2021:

Reduced Fungal Disease and More Marketable, Healthy Berries at Postharvest

RESULT 1: 8-27% Decrease in Anthracnose Disease

The BVT system alone reduced Anthracnose infection in postharvest berries by 27% compared to the control (no spray) and 8% compared to the grower standard. This indicates the BVT system alone had better disease control than the current grower standard.

Total Average Anthracnose Infected Berries (%) After 10 Days of Incubation (BVT Honeybee System)

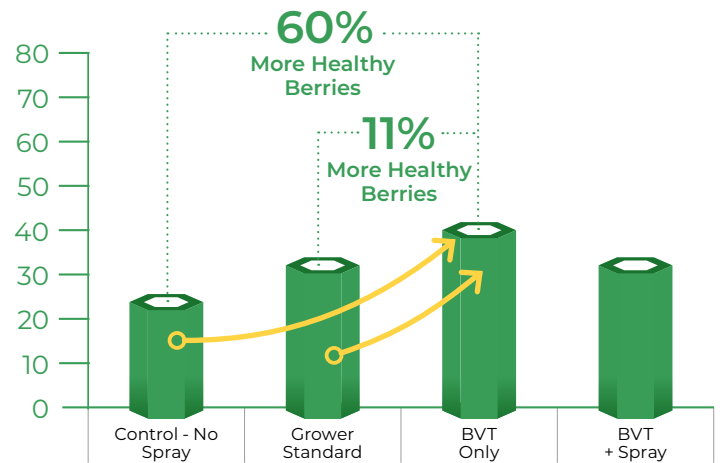


RESULT 2: 11-60% More Marketable, Healthy Berries at Postharvest

The BVT system used alone had more healthy berries 10 days after harvest than a standard program by 11% and 60% more than the control.

Note: Post-harvest data was collected 10 days after storage, and analyzed by Rutgers researchers.

Total Average Healthy Berries (%) After 10 Days of Incubation (BVT Honeybee System)



>> In both cases (Results 1 & 2), BVT's biological fungicide Vectorite with CR-7 used alone showed higher biological efficacy than the conventional (chemical) fungicides.



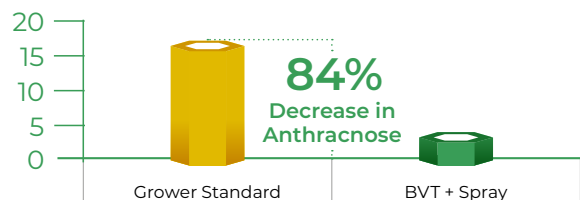
Rutgers University Conventional Grower Demo in New Jersey

Rutgers University also conducted a grower demonstration on a conventional blueberry farm in New Jersey using the BVT bumblebee system.

RESULT: 84% Decrease in Anthracnose Disease

There were much fewer anthracnose infected berries reported with the BVT system used with the standard program, approximately 84% reduction in anthracnose, than just using the conventional standard spray program alone.

Anthracnose Infected Berries (%) After 10 Days of Incubation (BVT Bumblebee System)



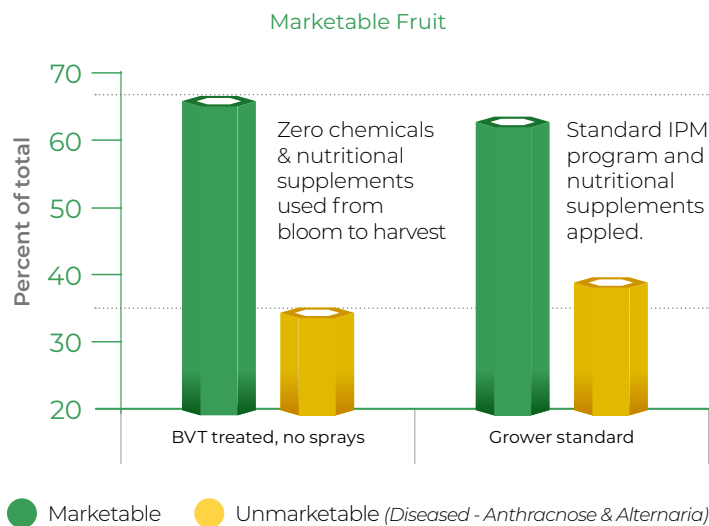
YEAR 2 TRIAL RESULTS FROM 2022:

Reduced Fungal Disease and Better Bee Health

Rutgers' year 2 trial results remain consistent with year 1, showing that the BVT system is equivalent for disease control, and sometimes better than a standard spray program using chemical fungicides that can be harmful to plants, soil, water, pollinators and workers in the fields.

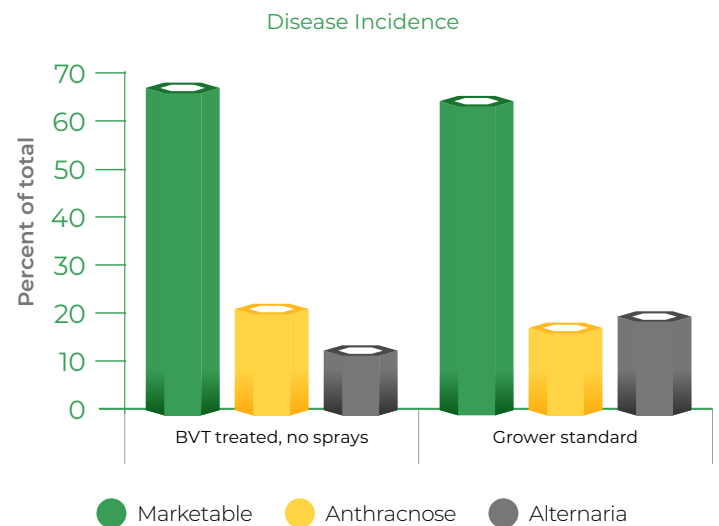
RESULT 1: Get More Marketable Fruit with BVT over Grower Standard at Postharvest

BVT's honeybee system and biofungicide kept **66% of harvested berries healthy and marketable** after seven days of incubation, which is comparable to the grower standard's value of 64% under the same conditions.



RESULT 2: BVT is Effective in Controlling Anthracnose and Alternaria Diseases Compared to Grower Standard

The BVT system alone was statistically equivalent to the grower standard in controlling Anthracnose disease infections postharvest and outperformed the grower standard in controlling Alternaria disease infections postharvest.



BVT is a sustainable alternative to chemical fungicides with improved results.

✓ Get increased shelf-life

✓ Protect your yield and profits/life

“These results continue to indicate that the BVT technology concretely helps to consistently reduce fungal disease occurrence.”

- **Chelsea Abegg**

Technician and PhD student at Rutgers University Specialty Crop Research and Extension Center



Improve Fruit Quality: Connect with BVT for data on how the quality of your fruit can be improved substantially through bee vectoring.

BEE HEALTH RESULTS:

Healthier Honeybees with BVT applied over Grower Standard

In the 2022 trial Rutgers also tracked and evaluated bee health. Trial results show that commercial honeybees being used with the BVT system were healthier than those in fields with a traditional fungicide spray program (the control group).



BETTER WEIGHT INCREASES: hives used with the BVT system had a significant increase in hive weight.



LESS BROOD REDUCTION: hives used with the BVT system experienced significantly lower reductions in brood.



BETTER COLONY HEALTH INDICES: hives used with the BVT system showed significantly better health (Health indices is a set of parameters beyond traditional weight and brood measurements).

About BVT

Bee vectoring delivers continuous protection directly to flowers. BVT's VectorHive™ system uses commercial bees to deliver Vectorite™ with CR-7, a biological fungicide for the control of common fungal diseases including *Colletotrichum* (anthracnose), *Botrytis* (gray mold), *Monilinia* (mummy berry) and *Alternaria*.

“These trial results are particularly notable because honeybees are pivotal to crop production, food security and the economy. Over the years, beekeepers and growers have experienced a significant increase in colony losses. Therefore, it is a significant benefit when hives are healthier after crop pollination.”

“Certain commonly used fungicides cause neurological problems for bees. These trial results are promising in that they demonstrate that the BVT system has less impact on bees than traditional spray programs. The hives were heavier at the end of season, with more brood coverage, and had a higher colony health index score as compared to hives without the BVT system installed.”

- **Chelsea Abegg**

Technician and PhD student at Rutgers University Specialty Crop Research and Extension Center



GET THE BUZZ ON PRECISION BEE VECTORING. CONTACT US TODAY!

Ian Collinson, Sales Manager

647-298-8927 | icollinson@beevt.com | www.VectoriteBVT.com/rutgers