

Thornless Blackberry Production Systems for Control of Winter Injury and Cane Canker Disease 2007 Report

submitted to the 2007 Ohio IPM Grants Program
by the OSU Fruit Team, as represented by
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EXECUTIVE SUMMARY

We initially proposed developing thornless blackberry plantings at two locations that would evaluate the efficacy of various production systems in reducing winter injury, and blackberry cane blight disease that is associated with winter injury. Due to reduced funding from our initial proposal we have chosen to focus the work at the OSU South Centers in Piketon. We still have the potential in the future of establishing another location when funding and staffing issues allow. Production systems will include the current standard of open field planting and planting in high tunnels. Our hypothesis is that if we can reduce winter injury, blackberry cane blight can be prevented; thus, eliminating the use of fungicide for disease control. This may also allow us to diversify our recommend varieties to additional ones that we do not currently recommend due to winter injury potential. These plantings will also be available as demonstration plots, for variety evaluations, and other integrated crop management studies for a period of 8-12 years. This study will provide researchers and Extension Educators with information that will enable them to make sound, economically-based recommendations for the successful production of thornless blackberries in Ohio. These plantings will also be useful in providing high tunnel fruit production workshops.

In 2007 we received our funding. Major tasks for this year included soil sampling, field preparation, construction of the high tunnel, and ordering plants.

BACKGROUND AND JUSTIFICATION

There is more market demand for fresh, locally grown blackberries in Ohio than can currently be supplied because the Eastern thornless blackberry (*Rubus* subgenus *Rubus* Watson) is one of the least winter hardy small fruits in Ohio. ‘Chester Thornless’ is the standard variety grown throughout Ohio because it is more winter hardy than other commercially viable thornless varieties; however, it is not the preferred variety by consumers for fresh consumption. Other less winter hardy eastern thornless cultivars such as ‘Triple Crown’ are typically more preferred by consumers for fresh consumption because they have superior flavor compared to ‘Chester Thornless’. At present, growers are forced to select varieties that are less preferred by consumers, but more reliable due to greater winter hardiness. Even the most winter hardy varieties may suffer from cold injury however. Spring of 2007 illustrated the difficulty in producing blackberries in Ohio. Because blackberries are a low-chilling requirement plant, we had plants that had emerged from dormancy by Easter weekend when we had a hard freeze for 5 days.

Virtually all blackberries south of Interstate 70 were froze to the ground with no production for the year. North of I-70 where the plants were not as advanced, there was still major damage and limited production.

One way to minimize winter injury and development of cane blight is to encourage the adoption of effective crop protection strategies, such as high tunnels, row covers and wind barriers. These strategies are all low cost compared to greenhouse production and there are many anecdotal reports suggesting that these practices are highly effective. Strong, research-based data is very limited. Growers, Extension Educators, and researchers have all stressed the need for sound research-based information that will enable the growers to make informed decisions on the economic viability of various production strategies. Over 60 individuals attended the high tunnel workshop held in Wooster last year. When the post workshop evaluation was completed, one of the main topic that individuals requested more information on was fruit production including brambles.

This project will meet the national IPM roadmap focus in the following areas:

- 1) Improve benefit/cost ratios when adopting IPM practices in production agriculture by developing new more cost effective production systems.
- 2) Reduce potential human health risks from pests and related management strategies in production agriculture by reducing the pesticides required for optimum fruit production
- 3) To minimize adverse environmental effects from pests and related management strategies in production agriculture by reducing the potential for pesticide run-off associated with mixing, application, spraying, and rinsing.

Expenditures - unaudited

Onset Corp. (Hobo microstations, data loggers, sensors, shuttle) -	\$2123
FarmTek (Growers Supply High Tunnel, plastic lumber) -	\$2139.47
Total	\$4262.47
Awarded	\$4500.00
Unspent	\$ 237.53

Labor requirements -

Soil sampling 1@ 0.5 hours	= 0.5 man-hours
Field preparation 2@ 1.5 hours	= 3 man-hours
Construction of the high tunnel 4@ 16 hours	= 64 man hours

Tasks to be completed - Plant blackberries, cover high tunnel, continue funding search



High tunnel looking and field looking north.



High tunnel and field looking northeast