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**FEASIBILITY OF
SUMMER (FLORICANE) BRAMBLES
IN COLORADO**

Project Summary

Early season (late June or July) raspberries and blackberries are popular and in high demand in Colorado. Fruit at this time of year sells at a premium price compared to late season fruit, and has the potential to drive sales of other early season produce at farm stands and farmers markets. Further, early season fruit ripens before Spotted Wing Drosophila, a new and now key berry pest, is most active in the field. Development of economically viable early season berry production techniques would both increase farm revenues and reduce management costs and losses from this pest. Shifting the majority of berry production to earlier in the season has the potential to be an environmentally and economically sustainable production strategy.

The primary objective of this project was to determine if the added protection of high tunnels and active management of tunnel temperatures would allow for early season, organic, floricane raspberry and blackberry production in Colorado.



30-foot-by-60 foot high tunnel with roll-up siding for ventilation and temperature management.

Method

At Garden Sweet, located in Northern Colorado, a total of 98 Raspberry plants were planted in two management blocks – open field and protected by a high tunnel. In each of these treatment units seven replicates of seven varieties were established in a randomized block design. High tunnel temperatures were monitored and managed with a Hobo device. Each spring, the number of floricanes on each plant, in both the high tunnel and open field, were counted and leaf condition was visually assessed for pest damage.

Outcomes

Multiple varieties of floricanes fruiting brambles were well established in a high tunnel and replicated outside in the field. The plants proved to be vigorous and the canes overwintered. However, after 3 growing seasons, achieving a crop in the high tunnel brambles has been unsuccessful. Poor fruiting may be attributed by too much temperature fluctuation, a lack of chilling in the high tunnel, or not enough nighttime protection in the spring.

On average, bud break on high tunnel floricanes occurred 3 weeks earlier than those outside in the field. However, the high tunnel plants had very few flowers on floricanes, which may be due to late freezes. Additionally, pest pressure from Spotted Wing Drosophila appeared earlier than ever on the few fruits that were present in the high tunnel. Even with close monitoring of temperature, it has been concluded that there is no significant advantage to growing floricanes brambles in an un-heated high tunnel in Colorado. The high tunnel may even be counterproductive compared to outside growing.

Top Findings and Lessons Learned

- In Colorado, high tunnels provide no significant advantage over open field production for floricanes fruiting brambles.
- During Winter, temperatures fluctuate too much in the high tunnel. It is impossible to maintain moderate daytime temperatures and the tunnels are difficult to vent especially during windy days.
- In the spring, without supplemental nighttime heat, the fruit buds freeze.
- During the winter, increased daytime temperature in high tunnels interferes with achieving adequate chilling.
- Increased Spider Mite problems were seen on high tunnel brambles compared to field grown brambles.
- Growing floricanes brambles may be feasible if the high tunnel is supplemented with heat March-May and a dense shade cloth is used November-March to reduce winter daytime temperatures.

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