

Choosing a Fruit Crop for High Tunnel Production

► High tunnels can offer advantages for fruit crop growers. Learn about growing seasons, marketing periods, protection, and more.

There are numerous benefits to growing high-value fruit crops under high tunnels, including the following:

- Extended season of fruit production
- Longer marketing period for the crop beyond cultivar selection
- Protected production, including a reduced risk of weather damage to the crop
- Reduced risk of pest and disease damage to the crop as pesticide need is reduced and fruit can be grown out of the normal cycle of the pest
- Increased potential for sustainable and organic production
- Increased profitability by capitalizing on high consumer interest and low product availability in early and late season markets

Fruit crops such as peaches, plums, and cherries (figure 1) have the potential for out-of-season production and organic production when grown in high tunnel, especially when dwarfing rootstocks are being used in the production system.



Figure 2. Blackberries grown under a high tunnel.



Figure 1. Peaches grown under a high tunnel. (Photo credit: Desmond Layne, Auburn University)

Brambles, especially primocane blackberries and raspberries, have shown a great potential for extended fall berry production in high tunnel (figure 2 and 3). Primocane blackberries produce fruit in the autumn on canes formed during the current season. In warmer climates, to overcome the high summer temperatures during flowering and fruit set, pruning of canes is applied to manage flowering and delay bloom until September. High tunnel bramble production has shown yield increases over field production, with primocane-bearing raspberries producing a fall crop two to three times as great as that expected from field production in addition to production of a summer crop. Harvest in the fall has been extended at least 3 weeks later than that normally expected for field production.

Blackberry production in high tunnels is gaining in popularity in some states. There can be a significant price premium for the large-sized fruit produced in high tunnels in metro areas. However, in rural communities, blackberries are found on most acreages and homesteads, driving down demand and therefore



Figure 3. Primocane blackberries grown in Chilton Research and Extension Center.

price. Input costs are high for blackberries because they require a trellis and unique management practices. It is best to dedicate the entire tunnel to blackberry production as there is an increase in yield due to a longer production season and increased fruit size. Blackberries are a perennial crop and thus occupy the high tunnel all year long but are only productive for a few months. It is very difficult to use the space between rows to further extract value from a high tunnel of blackberries. They share many of the same diseases as tomatoes and peppers; therefore, those crops should not be introduced into a tunnel of blackberries to minimize disease pressure. Also, the tall canopy greatly limits airflow and light to crops grown between rows, which is detrimental to both crops. It has been observed that a single high tunnel of brambles cannot generate a living wage as a tunnel of vegetables would and should be considered supplemental income only.



Figure 4. Southern highbush blueberries grown under high tunnel. (Photo credit: Reza Rafie and Christopher Mullis, Virginia State University)

Blueberries receive a high price on the market but their price does fluctuate throughout the year due to variations in supply. High tunnel technology is currently being explored for the feasibility to induce early flowering in blueberries (figure 4). A profuse fruit set almost doubled yield increase, and considerably higher returns to the growers are observed in the high tunnel blueberry production system.

Although tunnels will not alter the harvest season of apple and grape crops significantly, the high tunnel system still could provide protection from hail, minimize diseases, and reduce the potential of spring frost damages.



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New March 2021, ANR-2730

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