ALABAMA COOPERATIVE Extension SYSTEM
Alabama A&M and Auburn Universities

HORTICULTURE SERIES

TIMELY INFORMATION
Agriculture & Natural Resources

Choosing a Fruit Crop for High Tunnel Production

When considering what would be the best fruit crop to grow in your high tunnel system, think of the benefits of growing high-value fruit crops under high tunnels(HT):

- Extending the season of fruit production, providing longer marketing period for the crop beyond cultivar selection;
- Protected production, including a reduced risk of weather damage to the crop (hail, rain, frosts, sunburn, etc.;
- Reducing the risk of pest and disease damage to the crop – reduced pesticide need, growing the commodities out of the normal cycle of the pest;
- Potential for sustainable and organic production;
- Potential to increase farm profitability: price premiums, supply the market demand for locally grown food by capitalizing on high consumer interest and low product availability in early and late season markets.

Although no obvious potential for growing apples and grapes in HT is evident, because the tunnels will not alter the harvest season of these crops significantly, the HT system still could provide protection from hail, minimize diseases and reduce the potential of spring frost damages.

Figure 1. Sweet cherries grown under HT

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

Brambles, especially primocane blackberries and raspberries, have shown a great potential for extended fall berry production in HT (Figure 2). They 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. HT bramble production has shown tremendous yield increases over field production, with primocane-bearing raspberries producing a fall crop 2 to 3 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 three weeks later than that normally expected for field production.

Figure 2. Primocane blackberries grown in Chilton REC, AL

Figure 3. Florida Elyana strawberry - a new cultivar released especially for production under protected structures.

Due to the differences in open-field and protected cultivation systems, it is necessary to select cultivars adapted to each type of production. The Florida Elyana strawberry (Figure 3) is a new cultivar released especially for production under protected structures like high tunnels or greenhouses. Elyana is a short-day plant that produces flavorful fruit. Strawberries grown in high tunnels will produce fruit about 3 to 4 weeks earlier in the spring compared to plasticulture production in the field, with a 25% to 71% yield increase. HT strawberry research in Chilton REC, Clanton, AL has shown up to 50% yield increase in the protected strawberry production system.

Figure 4. Southern highbush blueberries grown under HT in GA.

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 yeild increase, and considerably higher returns to the growers are observed in the hight tunnel blueberry production system.

Prepared by Dr. Elina Coneva, Extension Horticulturist, Alabama Cooperative Extension System, June 2010