Growing Brambles in High Tunnels

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Raspberries and blackberries rank among the high-value crops such as tomatoes, cucumbers and greens that have been successfully grown in high tunnels in northern climates. High tunnels are known to protect plants from cold temperatures, but with very perishable and sensitive berry crops, high tunnels also provide protection against wind, rain and dew. The quality of berries from tunnels far exceeds that from the open field, and yield differences can be dramatic. For example, blackberries have a difficult time surviving winters in the open. In high tunnels, however, survival can be 100% and yields can approach 40,000 lbs per planted acre. With fall raspberries, the season can be extended from 4 weeks to 10 weeks or longer, with yields exceeding those of the open field by several-fold. Economic analyses indicate that all start-up costs can be paid for after 5 years, which is remarkable for an agricultural enterprise.

In our experience, the bramble crops most responsive to high tunnels are summer blackberries, fall red raspberries, and fall blackberries. Benefits accrue to summer red raspberries and black raspberries as well, but the differences between open field and tunnels are smaller. New cultivars of fall-fruiting blackberries adapted to high tunnels in the Northeast are just now being developed, so there are not yet any that are suitable at this time. Therefore, the presentation will only consider summer blackberries and fall raspberries.

The tunnel environment favors high fruit quality, fewer diseases and better plant growth resulting in higher yields. But the main purpose of the tunnel is different for the two types. For blackberries, the tunnel allows the plants to overwinter in our harsh climate where they otherwise would die or be significantly damaged. For this reason, the tunnel has to be “four-seasons” and able to withstand snow loads in winter. This requires more durable construction. For fall raspberries, the main purpose is to extend the harvest season into fall. After the last harvest, the plastic can be removed (it is even desirable to do so). Since the tunnel will not have to withstand a snow load, a less durable tunnel is required. Regardless, the tunnels must accommodate growth that exceeds that which is observed in the field. Therefore, wide (30 ft) and tall (14 ft or higher with 4 ft sidewalls) tunnels are best.

Many details are involved with the construction, planting, training, harvest and pest management of tunneled brambles. Readers are encouraged to download our 50-page publication http://fruit.cornell.edu/berry/production/pdfs/hightunnelsrasp2012.pdf entitled “High Tunnel raspberries and Blackberries” for those details.