What About Blackberries? Options for the Northeast

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U.S. Census of Agriculture Reports from 1997 and 2007 showed that blackberry acreage across the U.S. increased from 8,300 acres to 10,717 acres, a 29% increase. In the Northeast, while acreage is comparatively very low, the upward trend is much more marked. In the Mid-Atlantic region (PA, NJ, MD, WV, and DE), acreage increased from 120 to 276 acres during this same time period, a 130% increase. For other Northeast states including New York and states northward, acreage increased from 122 to 392 acres, a whopping 221% increase. While some of this acreage could have shown up due to better tracking, or a better response rate of blackberry producers in later years, the fact remains that blackberry acreage is increasing greatly, an unusual trend for commodities in general. Northeastern growers who are able to produce blackberries indicate a strong demand and good price for the berries, but production can be very variable from year-to-year, with nearly complete crop losses for individual growers following winters conducive to winter injury. However, some options do exist that could allow more reliable production, and some of them could be used in combination to make consistent blackberry production possible. However, we recommend that you try any new crops or production techniques on limited acreage first to determine potential in your operation.

The first option often considered when looking for cold-tolerance in blackberries is variety selection. It has generally been assumed that plants that produce a summer crop reliably are truly more cold-hardy. It's also has been stated that thorny cultivars are generally more cold-hardy than thornless ones. While both statements are logical conclusions given what we've observed, they are over-simplifications of what is actually taking place. First, in the matter of being truly cold-hardy, one important mechanism that has been overlooked has been the ability of individual cultivars to compensate for winter injury. In a study conducted in southeastern PA in 2008 and 2009, primary, secondary and additional buds were examined for winter injury. While there were differences among cultivars in injury to buds over the winter, the cultivar 'Illini Hardy', frequently cited for its cold-hardiness, was found to have primary buds that were injured to similar extents as for many other cultivars. However, this cultivar did have a noticeable ability to produce a tremendous number of secondary and tertiary buds that produced fruit clusters, and percentage of cane length completely killed over the winter was low. Secondary buds are typically differentiated in the spring, after injurious weather events have taken place, and thus 'Illini Hardy' has the ability to reliably produce a crop to a greater extent than other cultivars, as long as temperatures are not sufficiently cold to completely kill the plants. Thorny cultivars were not always more cold-hardy. In fact, the cultivars with the next lowest winter injury ratings after 'Illini Hardy' were in order, Apache (thornless), Chickasaw (thorny), and Chester (thornless). Apache, however, compensated for damaged primary buds very little. Chester did moreso than most other varieties, so again, a combination of hardiness and ability to compensate for damaged buds may be the key to consistent crop production.

A second option that allows production of blackberries in cold areas is the use of high tunnels. Research in this area is limited, and only a few cultivars have been trialed in tunnels. In central PA on a site where blackberries typically are killed to the ground each winter, 'Triple Crown' performed extremely well in single-bay high tunnels that were kept closed for the winter. Based on casual observation, there may be differences in cultivar survival in tunnels, but only limited blackberry trialing has been conducted in high tunnels to date.

Another option for improving winter survival is use of the rotatable cross-arm trellis. With this trellis, canes are rotated to nearly ground level for the winter, and then are covered with row cover for protection. Briefly described, while they are young, 3 to 4 new primocanes per plant are trained along a horizontal trellis wire that is near ground level. These primocanes are tipped when they reach the nearest plant, which causes lateral buds to break and grow upward. The laterals are tied to a vertical series of horizontal wires as they grow upward. In late fall, the system is twisted to bring the canes down to ground level, and canes are covered with the row cover. In the spring, after fruiting laterals have broken and grown upward, the system is twisted back beyond the original vertical position, so that the fruit hangs downward where it can be easily picked. Commercialization of the trellis product using fiberglass components rather than metal is expected to reduce the cost of the trellis considerably. Simply covering canes with a row cover - if grown as usual without this trellis - appears not to offer sufficient protection.

The final and perhaps most exciting development is the release of primocane-fruiting blackberry cultivars from the University of Arkansas breeding program. Because canes of these plants are mowed to the ground in late winter or early spring during pruning, the degree of winter injury to the canes, which can be significant, has no bearing on the following season's productivity. The first cultivars to be released were 'Prime-Jim®' and 'Prime-Jan®'. Shortcomings of these cultivars were relatively low yields, small fruit, seediness, and lateness of harvest. Later advanced selections are much improved, and a more recent release, Prime-Ark® 45, shows very good potential in size, sweetness, and yields. Harvest, however, is still very late, which brings the ability of the plants to mature the fruit before the end of the growing season into question, if plants are grown in the field in a cold climate. Thus, these selections were also grown in high tunnels, which allowed a large portion of the crop to mature, and resulted in other improvements in quality attributed to high tunnels such as increased yields, fruit size, and decreased gray mold incidence.

While production of blackberries in the Northeast is still limited, changes in production methods and improvements in varieties should allow consistency of production to improve over time, allowing growers to meet the strong consumer demand for this crop.

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