

Production systems for extended season fresh blackberries

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The flowering morphology of the erect, thorny primocane-fruiting blackberry cultivars Prime-Jan and Prime-Jim were studied in 2005 at the NWREC. Primocanes that were “soft-tipped” in early summer to 1 m were compared to un-tipped primocanes and floricanes. On average, tipped primocanes for both cultivars developed five branches, whereas un-tipped primocanes developed two branches. Tipped canes developed almost twice the number of flowers than un-tipped canes. ‘Prime-Jan’ and ‘Prime-Jim’ began blooming on the branches of tipped canes in mid-July. Un-tipped primocanes began to bloom in late July. Within a primocane inflorescence, the terminal flower was always the first to open, followed by terminal blooms from axes located on the basal portion of the inflorescence. Blooms then opened acropetally from the base to the apex of the inflorescence. In contrast to primocanes, floricanes developed two types of floral structures: 1) short axial floral structures: over-wintered, unopened primocane-developed floral buds that generally lacked compound leaves; and 2) long axial floral structures: floricanes-developed structures on current season’s growth that always developed compound leaves. Both long and short axial floral structures developed below the spent primocane-fruiting apex of the un-tipped cane. Blooms on short floral structures began to open in early April while blooms on long floral structures began to open in mid-May. Days from anthesis to black fruit for soft-tipped and un-tipped primocanes averaged 46 to 52 days, depending on cultivar, and 57 days on floricanes.

‘Prime-Jan’ and ‘Prime-Jim’ were studied in a field planting established in June 2003 at the NWREC. Primocane management treatments studied were: 1) primocane-only cropping with no manipulation [un-tipped]; 2) double cropping with no primocane manipulation [primocane + floricane crop]; 3) primocanes “soft-tipped” at 1 m to encourage branching; and 4) rowcovers used in late-winter to early-spring to advance primocane growth; treatments 1, 3, and 4 were a primocane crop only. On average, the un-tipped primocanes of ‘Prime-Jan’ were shorter than those of ‘Prime-Jim’. Primocanes that grew in the presence of floricanes were significantly longer (2.5 m) than un-tipped canes (2.1 m) in both cultivars. On 14 July 2004, primocanes in most treatments were just starting to flower and fruit harvest began on 16 Aug. The 50% yield date was 7—14 Sept. for ‘Prime-Jim’, depending on treatment and 14 Sept. for ‘Prime-Jan’. Primocanes in the double-cropping plots bloomed on 22 July 2005, 8 days later than un-tipped canes. Use of rowcovers in 2005, advanced bloom (24 June) compared to un-tipped canes. We stopped picking in mid-Oct. due to poor weather, but at that time there were still flower buds, flowers, and un-ripe fruit present on most treatments. In 2004, ‘Prime-Jim’ soft-tipped canes had three fold the yield of un-tipped canes (5.2 vs. 1.8 t/ha). In 2005, soft-tipping increased yield compared to un-tipped primocanes in both cultivars (5.7 vs. 2.2 t/ha, on average). Rowcovers increased yield, compared to un-tipped non-covered plots, particularly in ‘Prime-Jan’. Primocanes that grew in the presence of floricanes did not have a reduced yield in either cultivar even though these fruited later. In 2005, ‘Prime-Jan’ had a significantly higher floricane yield than ‘Prime-Jim’ (6.1 vs. 4.0 t/ha), but a smaller berry size (4.0 vs. 4.6 g).

In 2005 we were successful in establishing new plantings in a tunnel and an adjacent field. The plantings are doing very well. It was apparent that no fruit could be collected in 2005 (the planting year). Thus, first data collection will be in 2006.