

Impacts of Temperature on Node Formation and Bloom Date of Primocane-fruited Blackberry Genotype APF-52 under High Tunnel and Ambient Conditions and Multiple Mowing Treatments

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Temperature-based plant growth unit (PGU) models are used to predict bloom and harvest of many perennial fruit crops. This study was implemented to determine whether PGU models developed for floricanes-fruited blackberries were more accurate in primocane-fruited (PF) blackberry than the simpler method of counting days after cane emergence. A secondary objective of the study was to determine whether nodes are an effective measure of development toward flowering. Plantings of PF genotype APF-52 under high tunnels and ambient conditions were observed in 2008 and 2009. In 2008, three harvest delay treatments were applied: 1) mowing on 15 May; 2) mowing on 15 May and again on 10 June; and 3) mowing on 15 May, 10 June, and 2 July. Because the 2008 treatments that were mowed multiple times appeared to have negative effects on growth, 2009 treatments were modified to be mowed only once per treatment. In 2009, three different treatments were applied: 1) a control with no harvest delay treatment; 2) mowing on 15 May; and 3) mowing on 10 June. Nodes were counted weekly and bloom dates were observed. Temperatures were logged every half hour under high tunnels and ambient conditions to calculate PGUs. Different models were compared by comparing coefficients of variation. Results indicated

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that none of the temperature-based models were more effective than counting days. Mowing treatments did affect total time or PGU accumulation at bloom. There was a significant correlation between total PGU accumulation and total, but the correlation was weak ($R^2 > 0.29$).