Abstract:

Thorn contamination, particularly of old leaf petioles, can be a problem in machine harvested 'Marion' blackberry. The objectives of this study were to determine whether various pre-harvest treatments could reduce thorn contamination of machine harvested 'Marion' fruit. We evaluated eight treatments: 0.6% copper chelate (Cu EDTA) applied on Nov. 2, 1999 or Dec. 3, 1999; ethephon (Nov. 2, 1999); 1.2% copper chelate (Jan. 26, 2000); a Littau mechanical harvester with standard rotary heads followed by a Littau harvester equipped with brushing heads (Feb. 4, 2000); a harvester with brushing heads (Feb. 4, 2000); 0.6% copper chelate (Nov. 2, 1999) + a harvester with brushing heads (Feb. 4, 2000); and an untreated control. The study was done in an every year (EY) and an alternate year (AY, in the fruiting year) mature 'Marion' field. The rotary harvester followed by brushing removed 2.8 and 0.8 kg debris per plot in the AY and EY systems, respectively. Brushing alone removed 0.7 kg/plot in both the EY and AY systems. The winter treatments had no significant effect on yield per plot, percent bud break or fruit/lateral the following season. There was no treatment effect on the thorn contamination in harvested fruit. This was likely a reflection of the number and quality of the sorters this grower had on the machine. When we evaluated treatments for reduction of total contaminants (harvested fruit + sorted out or cull fruit), the machine harvester followed by brushing treatment reduced petioles/plot by 66% compared to the untreated control in the AY field. The amount of petiole contaminants was lower in the EY field, but there was no treatment effect. Winter removal of debris using a rotary harvester followed by brushing shows promise for subsequent reduction of petiole thorn contaminants in 'Marion', particularly in AY fields.