

Abstract:

Machine harvesting of processing raspberries is the normal practice for most major raspberry production regions around the world. Historically Willamette and Meeker are the primary cultivars to be harvested by machine, but new clones are becoming accepted. No single attribute has been found to determine successful machine harvest ability but a range of interacting traits governs harvest performance. It is important that a high percentage of uniform, ripe fruit with acceptable process quality and minimal green fruit is harvested throughout the harvest season. Fruit from plants in a replicated 'Haida' test-cross experiment were scored for nine fruit attributes as were cultivars of known machine harvestability in a guard row. Canonical correlation was used on guard row data to relate known machine harvest performance to fruit attributes. Coefficients from the first canonical variate were applied to the test-cross data to investigate its variation. Although the difference in the canonical variate among families was relatively low, some of its components (notably plug length, curvature and hairiness, and fruit firmness) showed considerable among-family variance. It is concluded that canonical correlation has potential. However, to better estimate the canonical variate would require more clones with a range of machine harvest performance, more fruit and plant attributes assessed on these clones, and a refined scoring system.