

Abstract:

In-row spacing treatments of 45cm, 91cm, 1.2m, and 1.5m (1.5', 3', 4', and 5', respectively), with or without trellising, are being compared in a 'Bluecrop' planting established at the North Willamette Research and Extension Center, Aurora, Oregon in October, 1993. Plots were hand harvested from 1994-96 and machine harvested with an over-the-row Littau rotary machine from 1997-00. Machine harvest efficiency was determined from yield of machine-harvested fruit and drop loss that was collected from the ground and weighed. Yield increased with higher density plantings in 1996-00. Cumulative yield (1996-00) was 104% higher at the 45cm spacing (76.1 t/ha; 34.0 t/a) than the 1.2m spacing (37.4 t/ha; 16.7 t/a). In-row spacing had no effect on berry weight from 1994-1998. However, in 1999 higher density plantings had 10% heavier berries than plantings at 1.2m. In contrast, plants spaced at 1.2m produced berries that were 12% larger than those at the 45cm spacing in 2000. High-density plantings (45cm) took an average of 73% longer to prune than the standard 4' spacing from 1995-1999. In-row spacing, to date, has had no effect on machine harvest efficiency. Yield losses to machine harvest averaged 21% in 1997 and 24% and 22% in un-trellised plots in 1998 and 1999, respectively. Trellising had no effect on machine harvest efficiency in 1997. However, from 1998-00, trellising improved machine harvest efficiency by reducing losses by 4.3%, 7.8%, and 3.1% of total yield, respectively.