

Public Abstract

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Title:Flower Production and Effect of Flower Harvest on Berry Yields Within Six American Elderberry Genotypes

Cultivation of American elderberry (*Sambucus canadensis*) is increasing in North America for its use in dietary supplements. While the flowers of European elderberry (*S. nigra*) are commonly consumed as an anti-viral in Europe, the horticultural production of American elderberry flowers is nascent. A large field experiment with American elderberry was established in 2015 in southwest Missouri, U.S.A to evaluate flower production and to determine the impact of a partial flower harvest on fruit yield and quality in addition to plant morphology. The study concurrently compared four promising new genotypes to two established cultivars. In 2017, 96 randomized plots of six genotypes were assigned treatments of 0, 15, 39, and 100% flower harvest, with four replicated plots per genotype/treatment. Flower and fruit production data, pest and disease incidence, phenology, plant growth response, and fruit quality data were determined. All six genotypes showed differences in flower cyme number, total flower dry matter produced, mean cyme size, bud break, fruit ripening date, fruit yield, berry size, and plant height. Pocahontas and Rogersville showed promise in terms of flower and fruit productivity, and produced taller plants compared with standard cultivars Bob Gordon and Wyldewood. While total fruit yields were correspondingly reduced in plots that received 15 and 39% flower cyme harvests, these differences were not statistically significant. Likewise, mean fruiting cyme weight, berry size, soluble solids in fruit, and plant height were not affected by the various flower cyme harvest treatments. While these results are preliminary, up to 39% harvest of flower cymes did not significantly reduce elderberry fruit yields, but neither did it improve berry size or fruit quality as was expected.