DELAYED RIPENING OF APPLE AND PEAR FRUIT USING POSTHARVEST DIPS OF AMINOETHOXYVINYLGLYCINE (AVG)
E.A. Curry
USDA, ARS, Tree Fruit Research Laboratory, 1104 Western Avenue, Wenatchee, WA 98801 USA

Regulation of fruit ripening allows more flexibility both in harvesting and marketing—usually with improved uniformity and retention of quality. Efficacy of pre-harvest foliar applications of AVG have been inconsistent because of 1) the long interval (3-5 weeks) between treatment and time of harvest, 2) inadequate coverage due to canopy interference and 3) differences in climatic conditions between seasons and among orchards. Postharvest dipping or drenching of fruit would increase efficacy, improve coverage uniformity, and reduce environmental residue. ‘Golden Delicious’ apples and ‘Bartlett’ pears were dipped for 2 min. in solutions of AVG from 0 to 400 mg·l⁻¹. Apples were kept at 20°C for 9 weeks and pears were kept at 1°C for 5 months. By measuring CO₂ and C₂H₄ daily, delay in ripening initiation for apples treated with 0, 100 and 200 mg·l⁻¹ was 7, 35 and 55 days, respectively. At 9 weeks, apples treated with 400 mg·l⁻¹ failed to ripen. After five months, pears dipped in [AVG] > 0 produced less ethylene out of storage than those dipped in water alone. Compared with a preharvest foliar spray at the same dosage, pears treated after harvest gained 4 weeks storage life.