

Abstract:

Recent studies suggest that a natural lipid, lysophosphatidylethanolamine (LPE), can accelerate fruit ripening, while at the same time promote shelf life. LPE is commercially derived from egg and soy lecithin. We studied the influence of LPE on anthocyanin accumulation and storage quality of cranberry fruit (*Vaccinium macrocarpon* Ait. 'Stevens'). For this purpose 2 m x 1 m plots were established in commercial cranberry beds at two different locations. Plots were sprayed with LPE at about 4 weeks before commercial harvest. The spray solution consisted of LPE (200 mg L⁻¹), ethanol (5% v/v), and a nonionic surfactant Sylgard (0.05% v/v). Fruit samples were removed at two weeks after spray application and at final harvest to determine the changes in fruit color. Plots were finally wet harvested with a machine along with the scheduled harvest and stored in commercial cold storage. Marketable fruit were counted and weighed at one and two months after cold storage to determine effect of LPE on shelf life of cranberries. In general, applications of LPE resulted in 13-28% increase in fruit anthocyanin contents, compared with control. LPE treatments also resulted in 6-12% increase in marketable fruit in cold storage, compare with control. This influence of LPE on fruit quality was more apparent after one month of storage. Interestingly, ethanol application also enhanced storage quality. Our results suggest that a preharvest application of LPE may have the potential to enhance color and prolong shelf life of cranberry fruit.