Abstract:

Highbush blueberries (Vaccinium corymbosum L.) are highly perishable and marketed soon after harvest. To extend the marketing season, CA storage is used to slow deterioration and maintain quality. Ozone (O_3) is a strong antimicrobial agent and may be an alternative antifungal agent for the fruit industry. Ozone may also induce antioxidants in treated fruits or vegetables. The combination of CA storage and ozone may create new opportunities for the blueberry industry. 'Coville' blueberries were treated with ozone at concentrations of 0, 200, or 700 ppb for 1, 2, or 4 days. Samples were evaluated immediately, or after storage at 10 °C for 7 days in air, or at 0 °C for 4 weeks in CA (10 kPa CO_2/15 kPa O_2). The percent marketable fruit was 4 to 7 % greater with treatments of ozone for 2 or 4 days in combination with CA than in controls. Respiration was stimulated immediately after treatment with 200 ppb O_3 for 1 or 2 days but no differences were found in RQ and ethylene production. Volatile profiles were affected by ozone. Antioxidant capacity, phytochemicals such as anthocyanins and phenolic compounds were not induced by treatments with ozone.