

**Title** Modified atmosphere packaging maintains postharvest quality of blueberries  
**Author** Megumi Ishimaru and Takuya Ban  
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### **Abstract**

The quality of stored blueberries (*Vaccinium* sp. L. cv. Tifblue and Earliblue) was examined using polyethylene films of different thickness (0.02, 0.03 and 0.05 mm), and packing temperature (3, 10 and 20°C). All factors were considered both individually and in combination. Quality during storage was defined by visual surface appearance and by physiological changes in the following attributes: weight loss, carbon dioxide concentration, ethylene production, soluble solid content, titratable acid concentration, and sensory evaluation for marketable berries. Plastic containers are generally used to store blueberries, but the surface of blueberries appeared 'wrinkled' during storage within couple of days. We assessed the effects of modified atmosphere packaging (MAP) and temperature for control of 'wrinkles'. Fruit in polyethylene bags (0.02, 0.03 and 0.05 mm thickness) had under 0.3% weight loss after 14 days at 3 °C, while non packaged fruit had 3% weight loss after 10 days at 3°C. In addition, fruit surfaces in polyethylene packages appeared to have no wrinkles developed during storage. MAP significantly retained titratable acid concentrations, although soluble solids contents were not affected. The lower gas the gas permeance of the MAP packs the greater the sensory evaluation disorders. Storage temperature was very important for blueberries in MAP conditions. Fruit stored at high temperature (20°C) sustained severe decay, and MAP increased incidence of decay. Packaging blueberries in 0.02 or 0.03 mm thickness polyethylene bag at 3°C resulted in an in-bag atmosphere of approximately 1% CO<sub>2</sub> and 0.3 ppm C<sub>2</sub>H<sub>4</sub>, and highest scores for appearance.