

**Title** Comparative shelf life study of blackberry fruit in bio-based and petroleum-based containers under retail storage conditions

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### **Abstract**

The shelf life of blackberries is relatively short, 2–3 days at 0 °C. Different marketing strategies like packaging can be used to retain blackberry quality during postharvest. This study compares the blackberry retail shelf life performance of different packaging materials, bio-based versus petroleum-based using the same packaging design. ‘Cancaska’ and ‘Chester’ blackberries were packaged in snap-fit closed packages made from oriented poly(lactic acid), OPLA, and oriented poly(styrene), OPS, and stored at 3 °C and 85% RH for three weeks. Both cultivars exhibited an increase in pH, weight loss, SSC to TA ratio, and fungal count, and a reduction in firmness, anthocyanin content, TA, and SSC during storage. The changes in TA, SSC, SSC to TA ratio, and weight loss significantly depended on the packaging material while no such effect was observed on firmness, anthocyanin content, pH and fungal growth. Both cultivars demonstrated better quality in the OPS container with less weight loss, and decrease in SSC and TA. Blackberries in both OPS and OPLA containers met the “US standard No 1” grade for commercialisation for more than 12 days at 3 °C.