

Abstract:

Fresh-cut sweetpotato products have potential to create new value-added market opportunities. To determine optimum film packaging and storage temperature, fresh-cut sweetpotato slices were packaged with semipermeable polyolefin films, having different gas transmission characteristics and kept at 2 or 8 °C for 14 days. The films chosen, in order of increasing permeability, were Cryovac PD900, PD961, and PD941. Among the films, only PD941 film bags maintained an aerobic atmosphere during the 14 days at both temperatures. However, the high weight loss in slices with PD941 film bags will limit the use of these film bags as modified atmosphere packaging (MAP) material. PD961 film bags were acceptable for packaging of fresh-cut sweetpotatoes at 2 °C for 14 days. Storage of sweetpotatoes in PD961 film bags could be problematic at 8 °C due to anaerobiosis. PD900 film bags were not suitable for fresh-cut sweetpotato packaging because of anaerobiosis at 2 °C and 8 °C. The effects of MAP on the nutritional and sensory quality of fresh-cut sweetpotatoes were also investigated. Type of MAP film bags did not significantly affect carbohydrate composition and nutrient content of slices during storage. Dry matter, alcohol-insoluble solid and ascorbic acid content decreased and fructose, sucrose, total sugar, and total carotenoid content increased during 14 days, but glucose concentration did not significantly change over time.