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**Poster Session 1**  
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**Topic: Advances in Food Engineering 1**

**Poster: P1.026**

**Title:**

**Postharvest shelf life extension of blueberries using a chitosan-based edible coating containing *Aloe vera* juice**

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**Abstract:**

Blueberries are currently one of the most valuable fruits worldwide, due to their organoleptic and nutritional properties. However these fruits are highly perishable due to their susceptibility to fungal infections (e.g. *Botrytis cinerea*) and water loss during storage.

Edible coatings can improve fruits quality and extend their shelf life by providing a barrier to moisture and gases. The incorporation of natural antifungal compounds, e.g. *Aloe vera*, into edible coatings provides a novel way to enhance edible coatings properties without using synthetic compounds.

In this study, chitosan-based coating (0.5% (w/v)) incorporating *Aloe vera* juice (0.5% (w/v)) was applied to blueberries to evaluate: (1) their antifungal efficiency and (2) postharvest quality of cold-stored blueberries.

Uncoated (B) and coated blueberry (BC) samples were monitored over 25 days at 5.5±0.6 °C and 90±3 % relative humidity. During storage time, samples were analyzed in terms of weight loss, microbiological growth, titratable acidity, pH, soluble solids content, and color properties.

Results showed that BC treatment delayed blueberries dehydration after 25 days, since B and BC samples weight losses were 6.2% and 3.7%, respectively. B samples presented contamination after 2 days of storage (2.0 log CFU/g), whilst BC samples presented mold contamination only after 9 days of storage (1.3 log CFU/g). The pH of BC samples remained lower (3.15) than that of B samples (3.54) after 12 days of storage. During storage, B samples had significantly lower titratable acidity values than BC samples (p<0.05), demonstrating that the coating helped retaining acidity of blueberries.

Chitosan-based coatings with *Aloe vera* demonstrated great potential in extending blueberries shelf-life (about 5 days). Moreover, two main factors of blueberry postharvest deterioration (microbiological growth and water loss levels) were reduced, which may represent a significant commercial value to blueberries producers.