

## 6. Determination of physicochemical properties of model beverages and baked products incorporated with avocado seed powder

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### Abstract

Consumption of Avocado (*Persea americana* mill) has increased worldwide in the recent years. The pulp is used but the peel and seed are discarded as waste. Studies have shown that the seeds are rich in phytochemicals that can be utilized in food systems. The objective of this study was to evaluate the potential of Hass avocado seed as a source of polyphenols in the processing of model beverages and baked products with functional properties. The proximate analysis of the avocado seed powder was carried out. The shelf life of phenols in avocado seed powder (ASP) stored in darkness, amber and transparent bottles was studied for six months. The seed extract was incorporated into model beverages of different pHs and the shelflife was monitored for 140 days. The seed powder was incorporated into baked products followed by total phenols and sensory properties analysis. Proximate composition of the seed powder for moisture, ash, protein, fiber, fat and total carbohydrates were 14.19, 1.82, 7.05, 4.00, 13.64, and 59.30 percent, respectively. During storage of the seed powder, there was no significant difference ( $P>0.05$ ) in the phenol content under the different storage light conditions for six months. In the model beverages, the rate of phenol degradation was higher in lower pH levels (2.8, 3.8, and 4.8), and those stored at ambient temperatures lost more phenols than those refrigerated in 140 days. The concentration of phenols in the baked products reduced due to the loss of thermolabile phenolics during the baking process. The sensory evaluation of the cakes in terms of color for all the formulations was liked very much. The aroma of 0% and 15% ASP was liked very much, while the other formulations were liked moderately. The overall acceptability decreased with the increase in avocado seed powder in the queen cakes. Avocado seed can be utilized to produce acceptable queen cakes and extracts incorporated into beverages to make them functional with health-promoting properties.

**Keywords:** Avocado seed powder; phenols; beverages; queen cakes; stability