

ABSTRACT

Avocado is a climacteric fruit with unique characteristics and high nutritional properties. Unfortunately, the processing of avocado generates avocado seeds as waste. Spray drying is a technique that could reduce the waste by producing avocado seed powder. The objective of this study is to develop an avocado seed powder using spray drying technique, by firstly investigating the solution stability with different seed extract concentrations and then physical properties of spray dried powder such as yield, moisture, water activity, solubility, and color. First, the seed extract was mixed with maltodextrin and water, and homogenized, then spray dried with different inlet temperature and feed flow rate ranging from 160°C to 200°C and 20 ml/min to 25 ml/min respectively. The spray dried avocado seed powder was analyzed for its yield, moisture content, water activity, solubility, and color. It was observed that the solution with the least avocado extract concentration (10 g) has the best stability. The avocado seed powder obtained from this experiment has yield ranges from 24.46-35.47%, moisture content ranges from 7.18-7.96%, water activity ranges from 0.27-0.34, solubility ranges from 55.50-79.67 seconds, L* value ranges from 38.38-41.05, a* value ranges from 6.20-7.25, and b* value ranges from 13.33-15.17. Increasing inlet temperature significantly results in: an increase in powder yield and solubility, as well as a decrease in moisture and L* value. Increasing the feed flow rate significantly results in: an increase in powder yield, moisture, and L* value. In conclusion, spray drying technology is able to develop avocado seed powder.

Keywords: avocado seed, spray drying, avocado seed powder, inlet temperature, feed flow rate