Influence of process variable on integrated power-temperature drying process for rambutan seed fat yield: a case study

ABSTRACT

The effect of process variable namely; integrated sequence, variable intensity, drying time, and initial moisture content were studied on integrated power-temperature drying process for the rambutan seed fat yield. This study examined the effect of these parameters on fat yield and correlation between process variable on the integrated power-temperature drying process. Rambutan seeds that were dried at two different integrated sequences (microwave finished oven (MFO); oven finished microwave (OFM)) at three microwave power levels (250, 600 and 1000W) with four different microwave time exposures (5,10, 20 and 60 mins) and two oven temperatures (45oC and 58oC) dried up to 1% of final moisture content for both level of initial moisture content (high and low). It was noted that fat yield was related with sequence, microwave power and microwave exposure significantly. Results were discussed in terms of sequence influence and relation between process variable on fat yield and how it is portrayed as an effective drying method for rambutan seed. These results will aid the integrated drying process development for agricultural products. The fat yield obtained through an efficient cost-effective drying process can help to promote the use of the rambutan fat yield in the industry, particularly the food industry.

Keyword: Integrated power-temperature; Rambutan seed; Fat yield; Microwave finished oven; Oven finished microwave