

**THIN LAYER DRYING OF SLICED GINGER (*Zingiber officinale Roscoe*)
USING MECHANICAL DRYER**

M.N. Liyanage¹, A.D.D. Roshika² and N.W.I.A. Jayawardana¹

¹*Dept. of Agricultural Systems, Faculty of Agriculture, Rajarata University of Sri Lanka,
Puliyankulama, Anuradhapura, Sri Lanka.*

²*Dept. of Export Agriculture, Central Research Station, Matale, Sri Lanka.*

Dried ginger has a big demand in the market as it can be used to obtain ginger oil and oleoresin. Normally sun drying is practiced for ginger drying and mechanical driers are also used to get high quality dried product though, quality depends mainly on drying temperature. This study was carried out to perceive the effect of drying temperature on sliced ginger under thin layer drying using a mechanical dryer. Ginger rhizomes of Local and Rangoon varieties were cut into 3 mm thick slices and subjected to drying process at 70 °C, 50 °C and 40 °C under equal airflow rate until the moisture content of samples reach 10-12%. Samples dried at 60 °C were used as the control since it is the commonly used temperature in mechanical drying. Moisture content, ginger oil content, oleoresin content and color (L value) of dried ginger were measured using standard methods and analyzed using ANOVA procedure in Completely Randomized Design. Final moisture percentage of the dried samples of both varieties ranged from 8 to 12% (wet basis). Drying curves of the samples dried at each drying temperature of both varieties had the similar shape of a typical drying curve of agricultural products. Oil and oleoresin content and color of the dried samples of both varieties were not increased with increasing temperature from 40 °C to 70 °C. There was a significant effect ($p < 0.05$) of drying temperature on oleoresin content and color of Local variety, though it did not significantly ($p > 0.05$) affect the oil, oleoresin content and color of Rangoon variety and oil content of local variety. Results revealed that the most suitable drying temperature to produce sliced ginger was 70 °C under thin layer drying, retaining higher oil, oleoresin content and better color.

Key words: Thin layer drying, Ginger oil, Oleoresin, Sliced ginger