DETERMINATION OF PHYSICAL PROPERTIES AND DRYING CHARACTERISTICS OF LOCALLY GROWN SOYBEAN (*Glycine max* L.)

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Soybean is one of the important pulses, which is rich in protein. In Sri Lanka, soybean is cultivated as a seasonal crop. Therefore, it is required to store the product for use in the off-season. This study was carried out to evaluate the effect of ambient storage conditions on the physical properties of soybean such as hardness, 1000 seed mass, bulk density, colour and moisture content. Two locally cultivated soybean varieties Pb-1 and PM-13 were used for the experiment. Thin layer drying was performed to make the drying curves under three levels of inlet temperatures *i.e.* 50, 70 and 90 °C. Data were recorded at fortnight intervals during four months. Analysis of Variance on Complete Randomized Design was performed to analyze physical properties data. Results revealed that hardness, bulk density, moisture content and 1000 seed weight changed significantly within the storage period ($p<0.05$). Hardness and bulk density of seeds increased with time while 1000 seed weight and moisture content decreased with time for both varieties. However, hardness was not significantly different between the two varieties. The L value of hunter lab colour space of the two varieties did not significantly change with time, but it was significantly different between the two varieties. The a and b values of hunter lab colour space significantly changed between the two varieties and they have changed with time. The effect of drying parameters and drying conditions of soybean were also determined. It was clear from the drying curve that rapid moisture removal from the seed occurred up to 10.85% moisture content (wet basis). Therefore, moisture level of soybean can be reduced up to 10.85% (wet basis) for safe storage. Results revealed that physical properties of soybean changed with the variety and storage period.

Keywords: Drying curve, Physical properties, Soybean, Storage