

## EVALUATION THE SUITABILITY OF THE IPHT MULTI CROP DRYER FOR PRODUCTION BLACK LIME

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Lime (*Citrus aurantifolia*) is a plant belongs to family Rutaceae. Black lime (Dried Lime) made out of fresh lime used in the Middle East. As farmers face difficulties in marketing fresh lime during the harvesting season, it is mandatory to encourage black lime production in rural areas. The performance of multi crop dryer which was introduced by the nstitute of Post Harvest Technology, Anuradhapura was evaluated for the production of black lime in terms of capacity of the machine, cost of processing, rate of black lime production, rate of paddy husk consumption and quality of the black lime produced. The physical characteristics of fresh lime and dried lime were determined during the study.

The data revealed the mean length as  $42.3 \pm 2.67$  mm, breath  $39.7 \pm 1.88$  mm, and thickness  $40.7 \pm 1.89$  mm of fresh lime. The mean weight, true density, bulk density and porosity of fresh lime were  $35.56 \pm 5.17$ g,  $973.58$  kg/m<sup>3</sup>,  $608.31$ kg/m<sup>3</sup>, and 37.38% respectively. The values for volume, firmness, sphericity and aspect ratio of fresh lime were  $36.52$  cm<sup>3</sup>, 164.09 N, 96.63% and 94.06% respectively. On three different surfaces, angle of repose varied from  $6.94^\circ$  to  $8.62^\circ$ .

The result showed that the capacity was approximately 500kg of fresh lime per batch. Under optimum operational condition, the drying time taken to reduce the moisture of fresh lime from 88.68% to 11.83% (wb) was 32 hours. The consumption of paddy husk per batch was 540kg and average feeding rate of husk is 16.87kg/hr. The cost of processing was calculated as Rs. 30.14 per kg. The dried lime has mean length ( $38.9.3 \pm 3.22$  mm), breath ( $33.2 \pm 2.17$ mm), and thickness ( $36.7 \pm 2.20$ mm). The color of dried lime is blackish and L value varied from 22.72 to 25.51. Hence, IPHT multi crop dryer is suitable for production of black lime.

**Key words:** Black lime, Dehydration, Multi crop dryer