

Assessment of post harvest losses in dry chilli by comparing existing practices with improved methods

W M C B Wasala*, M D Fernando and K B Palipane

Institute of Post Harvest Technology, Research and Development Centre, Jayanthi Mawatha, Anuradhapura

Post harvest losses and quality deterioration of dry chilli is a major problem that occurs due to use of improper post harvest practices during harvesting, drying and storage. Therefore, this study was carried out to estimate the quantitative and qualitative post harvest loss and compare the existing and improved post harvest practices and their technical feasibility during production of dry chilli.

Existing and improved methods for harvesting, drying and storage were compared in the study. As the existing method of harvesting, chilli pods were harvested without paying attention to the redness of the pod and in the improved method, only red coloured pods were harvested (at correct maturity). A sample (5 kg per replicate) of chilli harvested using existing method was cured for 2 days. Chilli harvested by both methods and cured were then subjected to drying by practising sun drying, which is the existing method and using a dryer developed by the Institute of Post Harvest Technology (IPHT multi crop dryer) as the improved method. Then best quality dried chilli was stored under ambient conditions (30 ± 2 °C, 62 ± 3 % RH) packed in jute bags, poly sacks and plastic crates. In each sample after harvesting, drying and 12 weeks after storage, total weight, moisture content, pigment concentration and weight of discoloured pods, damaged pods and pods without stalks were measured. Each practice was replicated three times.

The results indicated that the moisture variation and moisture content were higher in chilli harvested using existing method due to presence of immature pods. Harvesting at correct maturity resulted in minimum losses (1.5%) and maximum pigment concentration ($0.0074 \text{ Mol dm}^{-3}$). Chilli dried using the dryer showed low moisture variation, even drying and less loss (4.36%). In the sun dried process uneven drying, highest loss (20.77%) and considerably more number of discoloured pods (13.16%) were observed. Moisture content of dried chilli decreased with storage time. But after 12 weeks of storage it was not significantly different among the 3 packing methods. This may be due to that the moisture content of the chilli had tend to equilibrate with the environment moisture content. The total rejects (discoloured, broken and stalk less pods) of the samples stored in jute bags and plastic crates were comparatively lower (1.6% and 1.9%, respectively). Packing materials with proper ventilation maintain the quality of chilli by dissipating excess moisture and heat generated by the pods. Therefore, it can be concluded that total post harvest loss occurring in dry chilli production (30.37%) can be reduced to 5.86% by practising improved harvesting and drying techniques. For storage of dry chilli jute bags are more suitable.