

Storability of Potato Varieties under Different Storage Conditions in Bhaktapur, Nepal

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Abstract

Potatoes are the major cash crop in Nepal. Being perishable in nature, it is imperative to assess the post-harvest losses of potato varieties under different storage conditions. So, this experiment was conducted in Changunarayan municipality-3 of Bhaktapur district, Nepal from February to June, 2022 with an objective to minimize post-harvest losses in potatoes. The experiment was laid out in a 6×3 two-factor Completely Randomized Design (CRD) with three replications. Potato tubers of 6 varieties (MS.42.3, Khumal Seto, Khumal Upahar, Khumal Vikas, Khumal Ujjwal, Cardinal and Janakdev) were stored under 3 types of storage conditions (ordinary room storage, basket storage and cold storage) consisting of 18 treatment combinations. Observations were recorded on physiological loss in weight, sprouting behavior, potato tuber moth (PTM) damage and rotting damage. Analysis of variance for all parameters was done by using Genstat version 15. During 100 days of storage, MS 42.3 had the maximum postharvest loss (19.28%) while Khumal Ujjwal showed the minimum (7.08%) followed by Janakdev (7.28%). Cold storage resulted in the minimum physiological loss in weight (7.43%) while ordinary room storage suffered the maximum (14.33%). Sprouting was maximum with basket storage (4.87 cm) followed by ordinary room storage (3.4 cm) and minimum with cold storage (1.58 cm). The highest PTM damage per tuber (3.67) was noted in MS 42.3 while there was no PTM damage in Janakdev. There was no PTM damage in cold storage and the highest in ordinary room storage (4.67). Rotting was not recorded in any of the varieties and storage methods studied. Therefore, Janakdev was found as the best variety and among the storage conditions, cold storage was recorded as the most promising regarding the self-life of potatoes.

Keywords: physiological loss in weight, sprouting, potato tuber moth, rotting damage, storability