

Impact of Relative Humidity and Temperature during Cold Storage on Quality of Seed Potato (*Solanum tuberosum* L.)

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A study was conducted to evaluate the impact of relative humidity and temperature on quality during storage of different weight classes of seed potato. Three different weight groups of seeds 2-4 g, 20-30 g and 35-55 g of the variety Granola were subjected to storage in two humidity levels (85-90% and 90-95%) and temperature regimes of 5°C and 10°C under dark conditions. The ambient humidity of 80% and temperature of 14°C to 26°C conditions were considered as the control. Pre basic seeds (G_0) were used for the seed group 1 (2-4 g) and basic seeds (G_2 generation) used for seed groups 2 (35-55 g) and group 3 (35-55 g). Data was collected on the incidence of disease, weight loss, appearance, sprouted tuber percentage and chilling injury in all the combinations developed. The ANOVA procedure of the SAS package was used in order to examine parametric data. Data of disease incidence and appearance were analysed using the chi-squared test. The Kruskal Wallis test was performed to analyse data on appearance and chilling injuries.

Storage at RH of 90-95% and 5°C induced the minimum weight loss for seed group 1 (2-4 g) and seed group 3 (35-55 g). In seed group 2 (20-30 g), the minimum weight loss was a RH of 85-90% and 5°C. Prolonged dormancy was seen when stored at 5 °C under both selected humidity regimes. The results of the study indicate that a RH of 90-95% and 5°C are optimum for seed potato storage and that a low temperature is essential for successful seed potato storage.