

# Drying behaviour and quality of tomato F1 hybrid seed by desiccant materials

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## Abstract

Drying is a crucial step for vegetable seed production. Drying with an appropriate temperature and correct relative humidity are important factors contributing to seed quality. Drying beads and silica gel were used as desiccant materials for drying tomato F1 hybrid seeds with an initial moisture content of 60-65% (dry basis) at  $30\pm 2^{\circ}\text{C}$  and 70-80% RH. The desiccant to seed ratios of 1:1 and 3:1 (v/v) were applied. Drying behavior was implemented using a logarithmic model with 0.93-0.99  $R^2$ . The results revealed that the drying rate of silica gel at a 3:1 ratio was the highest and the seed moisture content achieved 6-8% within 6 hours. Seed quality as determined by germination percentage (81%) and vigor – indicated by mean germination time (MGT) and germination index (GI) – was not significantly different compared to the conventional method by sun drying. Therefore, the silica gel at a 3:1 ratio is the most effective desiccant material for tomato F<sub>1</sub> hybrid seed drying.