

Abstract 83

Evaluation of Processing Tomato Seed Quality Using Different Vigor Tests

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Germination and vigor tests are essential components of seed quality control in seed companies. Vigor tests, though not required for meeting the legislation, have been used by seed companies to evaluate the physiological quality of seed lots. In order to verify the efficiency of different vigor tests aimed to evaluate the physiological seed quality, two seed lots from three processing tomato cultivars (Tospodoro, Viradoro and Nemadoro), from Embrapa Vegetables' breeding program, underwent the following tests: germination, first count, accelerated aging with the use of saturated NaCl solution, cold, seedling emergence, germination rate, loss of potassium, high and fresh and dry weight of transplants. The cold test and accelerated aging led to a greater differentiation on seed vigor of seed lots from different cultivars. Pearson's (r) test of simple correlation coefficient also showed a highly positive correlation between the cold test, accelerated aging and seedling emergence. The results from transplant production were not efficient to separate seed lot vigor. The results suggest the use of cold test and accelerated aging test (72 h, 41 ° C) to assess the vigor of processing tomato seeds.

Keywords - seed quality, tomato, vigor tests