

## **Vigor tests on lettuce (*Lactuca sativa* L.) seed and the correlation with emergence**

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### **ABSTRACT**

Vegetable seed quality is important, especially for plug producers where quick and uniform emergence with 100% useable seedlings in each flat is expected. The main objective of this study was to evaluate some of the available vigor tests to predict seedling emergence. Eight lettuce (*Lactuca sativa* L.) seed lots were evaluated by the following laboratory vigor tests: germination (G), accelerated ageing (AA), saturated salt accelerated ageing (SSAA), conductivity (CE), and digital image analysis (IA). Also evaluated were the percentage (%) and speed (SE) of the seed lots emergence under three conditions: seedling trays (ST) filled with a mixture of peat (80%) and perlite (20%), boxes with a clay loam soil (BS), and boxes with a mixture of clay loam soil (66%) and sand (34%; BSS). Correlation coefficients among the laboratory and emergence test results were calculated and significant differences were found. The correlation coefficients between CE results and each emergence parameter were not significant, while AA results were only significantly correlated with the emergence percentage for BSS. G values and emergence results were significantly correlated in all cases. SSAA results were equally or more positively correlated than G results with the emergence percentage and, for the three sowing conditions, they were more correlated with the SE than G values. Vigor index results from the IA were significantly correlated with both emergence parameters, and its correlation with emergence on ST (% and SE) was greater than G values. The results of this study showed that SSAA and IA were the best laboratory tests for lettuce seed vigor evaluation, especially for seed lots to be used for plug seedling production.