Vigor tests on lettuce seeds and their correlation with emergence.

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The main objective of this study was to evaluate some of the available seed vigor tests to predict lettuce (*Lactuca sativa* L.) seedling emergence. Eight lettuce seed lots were evaluated by the following laboratory vigor tests: germination (GT), accelerated aging (AA), saturated salt accelerated aging (SSAA), conductivity (EC), and digital image analysis (IA). Also evaluated were the percentage (EP) and speed (ES) 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 EC results and each emergence parameter were not significant, while AA results were only significantly correlated with the emergence percentage for BSS. GT values and emergence results were significantly correlated in all cases. SSAA results were equally or more positively correlated than GT results with the EP and, for the three sowing conditions, they were more correlated with the ES than GT values. Vigor index results from the IA were significantly correlated with both emergence parameters, and its correlation with emergence on ST (EP and ES) was greater than GT 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.