

A New Seed Vigor Testing System for Ornamental Species Using Computerized Imaging Technology

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Using computerized imaging technology, a new seed vigor testing system *Seed Vigor Imaging System* (SVIS) was developed at The Ohio State University. By analyzing the digital images of seedlings, it can detect and measure the length of hypocotyls and radicles separately, and then generate a value for the growth and uniformity of a germinating seed lot. This system provides a fast, labor-saving and objective approach to measuring seed quality. In this study, it was extended to the quality assessment of ornamental species and compared with other traditional tests, i.e. standard germination test, germination rate and accelerated aging test. Three species (*Lactuca sativa*, *Rudbeckia laciniata*, *Salvia chinensis* 'Vista Red White') were selected and their quality was tracked on a regular basis. Comparison among different tests was conducted and results showed that germination rate following ageing was a sensitive test to represent seed vigor, followed by germination rate and accelerated ageing test. SVIS functions well, but multiple issues were encountered when extended to ornamental species. Continuous improvement is required to enhance its capability as a vigor test.