

Title The change of viability and vigor of primed lettuce seeds during storage
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Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.
Keywords lettuce; priming; viability; seeds

Abstract

Priming improved mean germination time, radicle growth, and ability to germinate at supra-optimal temperatures in lettuce. The beneficial effects of priming were partially lost after desiccation, especially rapid desiccation. Seed longevity was correlated negatively with the advancement in mean germination rate. There was a negative log-linear relationship between the duration of priming and seed longevity and a negative linear relationship between seed longevity and osmotic potential of the priming medium. Desiccation tolerance was not affected after priming or imbibitions until radicle protrusion. The slope of the negative logarithmic relationship between seed longevity and moisture content and the temperature coefficient for the rate of viability loss were increased by priming. The low-moisture-content limit to the improved viability equation was increased to about 6% by priming. The net result was that at warm, moist storage conditions (20-30°C with 9-15% moisture content and 10°C with 12-15% moisture content), control treatments showed greater longevity than primed seeds, but not in cooler drier environments (-20 to 10°C with 4-9% moisture content and -20 to 0°C with 12-15% moisture content).