EFFECTS OF WATER AVAILABILITY DURING SEED DEVELOPMENT IN LETTUCE.

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Among the factors affecting germinability of a seed lot are the environmental conditions under which the seeds are produced. The objective of this study was to determine how water availability of the mother plant affects seed germinability in lettuce. Seeds of cv. Tango were produced in a greenhouse under one of two treatments: i) wet (watering volume equivalent to evapotranspirated volume), and ii) dry (watering volume ~ 54% of wet treatment). The dry treatment produced significantly shorter plants, and plants with fewer but heavier seeds. There were no differences in seed germination with light at 20, 25 and 30°C; in all cases it was close to 100%. Without light, at 20°C, seed germination from both treatments was reduced drastically, with a significant difference in favor of the dry treatment. Germination of seed from both treatments was affected by reduced water potential (PEG solutions), with a slight difference in favor of the wet treatment. In both treatments germination decreased at increased levels of exogenous ABA concentration, however seeds from the dry treatments were more sensitive to this compound. The results indicated that water availability during seed development not only affected seed yield and individual weight, but also seed germinability under sub-optimal conditions.