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LOSS OF DESICCATION TOLERANCE IN FOUR ORTHODOX TREE SEEDS DURING GERMINATION

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Studies on the loss of desiccation tolerance in orthodox (desiccation tolerant) seeds, may offer clues for a better understanding of seed ecology and also for recalcitrant (desiccation sensitive) seed conservation. Thus this study aimed to evaluate the loss of desiccation tolerance in seeds of four orthodox-seeded tree species from Brazil. Seeds of *Acacia polyphylla*, *Enterolobium contortisiliquum*, *Handroanthus impetiginosus* and *Senna macranthera* were collected on the region of Lavras (Minas Gerais, Brazil) for this study. For each species, isolated experiments were carried out. All germination tests were done in paper roll incubated at 25°C and constant light. First, an imbibition curve was established by measuring regularly the weight gain of the seeds during the germination process. Samples of four replicates of 25 seeds each were submitted to the following process: imbibition (at time intervals determined from the imbibition curve); drying until reaching the original water content (before imbibition); pre-humidification; imbibition. The final percentage of normal seedlings (healthy root, stem and first pair of leaves) was measured for characterizing the desiccation tolerance. The four species showed small differences on both imbibition curves and loss of desiccation tolerance patterns. All imbibition curves were triphasic, however in *A. polyphylla* and *E. contortisiliquum*, the phase two (plateau) was shorter. The loss of desiccation tolerance started after the beginning of phase 2 in *H. impetiginosus* and *S. macranthera*, but earlier (phase 1) for *A. polyphylla* and *E. contortisiliquum*. In all species studied, the sharper decrease on survival was observed with the beginning of germination (radicle protrusion). Also, seeds from the four species studied became totally desiccation sensitive (0% of survival after drying) at the point that all seeds had germinated. Based on the results, it is possible to conclude that, despite small differences on the pattern, all species studied lost desiccation tolerance around radicle protrusion.

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