Physiological and biochemical profile of two cultivars of *Ricinus communis* L. (Nordestina and Paraguaçu) during seeds storage

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Introduction: *Ricinus communis L.* presents a major highlight in Brazilian agriculture and has importance socio-economic due to its diverse industrial applications. The control of storage conditions is important, because ensure increased longevity of the seeds as well as physiological and biochemical quality, reducing of deterioration process. **Objectives:** This study aimed to investigate the effects of different storage conditions on physiological and biochemical quality of two cultivars of *R. communis* seeds (Nordestina and Paraguaçu). **Material and Methods:** The seeds were packed in cotton bags and tested under four storage conditions during twelve months: 1- controlled relative humidity (RH) and temperature (T) – cRHT (16,29±2,36 ºC and 13,60±4,43% RH); 2- only controlled RH – cRH (23,09±0,85 and 9,03±2,26% RH); 3- only controlled T – cT (17,32±3,09 and 69,09±9,31% RH); 4- uncontrolled RH and T – ucRHT (24,74±1,50 and 53, 26±8,30% RH). Evaluations of germinability and moisture content were realized monthly. The tetrazolium test; extraction and characterization of total lipids (quantification, acidity and peroxide index) and antioxidant enzymes activity (superoxide dismutase–SOD, catalase–CAT and ascorbate peroxidase–APX) analysis were conducted quarterly. **Results and Discussion:** The Nordestina cultivar was better parameters of germinability (germination maximum–Gmax, time to reach 50% germination–T50, germination uniformity–U8416, area under the curve–AUC, mean germination time–MGT, seedlings deformed abnormal and deteriorated abnormal, biometrics), as well as increase number and dry weight matter of normal seedlings. Both cultivars had reduction of total lipid and low peroxide value and acidity. The activities of the all enzymes vary during storage for both cultivars. **Conclusions**: Finally it was possible to observe that the Paraguaçu seeds have a worse physiological and biochemistry quality of their seeds compared with seeds Nordestina. The best storage condition was those which had the humidity controlled (cRHT and cRH).

Keywords: antioxidant enzymes, germinability, humidity control
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