

“ INFORMATIVO ABRATES ”
BRAZILIAN ASSOCIATION OF SEEDS TECHNOLOGY

Special Issue

**10th CONFERENCE OF THE INTERNATIONAL
SOCIETY FOR SEED SCIENCE**

April 10th to 15th, 2011 - Costa do Sauípe - BA

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394. GENETIC VARIATION OF SEED DETERIORATION IN WHEAT.

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Due to the change in agricultural cultivation system at the beginning of the 20th century our plant genetic resources are of particular relevance today. About 7 Million accessions are stored in genebanks (FAO2009) and are mostly available for plant breeders and scientific research. Unfortunately the viability status of this plant material is predominately unknown. Our present study is aimed to characterize long-term stored wheat (*Triticum aestivum* L.) accessions on germination and the genetic background of seed deterioration. About 100 wheat accessions did show clear variation in their germination performance after 30 years of storage under same conditions (0 °C, 8% seed moisture content). Assuming a genetic component of seed longevity a mapping population revealed two major quantitative trait loci (QTL) for artificial ageing and one separate QTL for dormancy. Further biochemical investigations show differences in total amount of the major antioxidant glutathione between higher vigor and low vigor accessions which could be a part of the genetic regulation of seed longevity.

Keywords: Wheat, Genebank, Genetic Variation, Germination, Seed Longevity

395. EFFECT OF DRYING ON GERMINATION AND VIGOR OF *Pseudopiptadenia psilostachya* G. P. Lewis & M. P. Lima SEEDS (FABACEAE).

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Pseudopiptadenia psilostachya is a tree species, found in the Brazilian Amazon exploited for its wood in its native habitat. The objective of this study was to verify the effect of drying on germination and vigor on *P. psilostachya* seeds. Seeds were dried in the laboratory at 23 °C and 55% RH. After obtaining the lowest seed moisture content (SMC) a sample of seeds was stored at -20 °C for three months. The following SMC were tested: 16.5%, 13.0%, 10.6%, 7.4%, 6.1%, 5.6% and 4.9%. Seeds were sowed in pots (18x23cm) at a depth of 0.5cm. The substrate used was a mixture of sand and sawdust (1:1), previously heated at 100°C for two hours to reduce biological contamination. The emergence test was conducted in a laboratory with no temperature and relative humidity control. Seedlings emergence was recorded daily. The number of days to emergence onset (DEO), emergence (E), emergence speed index (ESI), germination (G), abnormal seedlings (AS) and dead seeds (DS) were quantified. The experimental design was completely randomized with four replication of 30 seeds for each treatment. Data were submitted to analyses of variance and treatment means were compared by Tukey's test (P≤0.05). Reduction in SMC affected only DEO and ESI. Seeds with 16.5%, 13.0% and 10.6% require less time to begin emergence (4.2 to 4.5 days), while seeds with moisture content equal and lower than 7.4% required from 6.2 to 7.7 days to begin emergence. Reduction of SMC for levels equal and lower than 6.1% reduced ESI. For other variables the range was 86.7% to 91.7% (E), 85.0% to 90.8% (G), 8.3% to 13.3% (SM) and 0.0 to 3.4% (PA). The lack of sensitivity of *P. psilostachya* seeds to reduction of moisture content suggested that this species has orthodox seeds on storage.

Keywords: Desiccation, Dead Seeds, Storage