



A Peer Reviewed International Journal of Asian
Academic Research Associates

AARJMD

**ASIAN ACADEMIC RESEARCH
JOURNAL OF MULTIDISCIPLINARY**



PRIMING IN CRAMBE (CRAMBE ABYSSINICA) SEEDS

**CAROLINA PUCCI DE MORAES¹; JULIANA JOICE PEREIRA LIMA²; CLÁUDIO
CAVARIANI³; EDVALDO APARECIDO AMARAL DA SILVA⁴**

^{1,2}Student at State University of São Paulo, São Paulo – SP, Brazil

^{3,4}Professor at State University of São Paulo, São Paulo – SP, Brazil

Abstract

The crambe belongs to the family Brassicaceae, it is a plant with short cycle, rustic, tolerant to drought and cold and still with high oil content in its seeds. The seed priming has the advantages of unifying and speeding the establishment of seedlings, and can provide the success of the implantation of the crop. Therefore, the objective was to evaluate the performance of crambe seeds submitted to different methodologies of priming. Two lots of crambe seeds of the cultivar FMS Brillhante were evaluated. The seeds were submitted to priming in water, where the seeds were placed between two sheets of blotting paper moistened with 12 mL of water in plastic boxes at 10 ° C for 5, 10 and 15 days. Priming in osmotic solution with PEG 6000 in potentials -0.5; -1.0; -1.5 and -2.0 MPa, where the seeds were soaked in paper with 3x the paper weight in PEG 6000 solution for 5, 10 and 15 days at 25 ° C. The physiological quality was evaluated by the germination test, the germination speed index, the first germination count and the mean germination time. Priming in water for a period of five days at 10°C can be indicated to increase the germination and germination speed of crambe seeds. The priming in osmotic solution with PEG 6000 was detrimental to the physiological quality of crambe seeds.

Key words: osmopriming, hydropriming, germination, vigor

References

- Batista T B, et al (2015) Aspectos fisiológicos e qualidade de mudas da pimenteira em resposta ao vigor e condicionamento das sementes. **Bragantia**, v. 74, n. 4, p.367-373.
- Gouveia G C C, Binotti F F S, Costa E (2017) Priming effect on the physiological potential of maize seeds under abiotic stress. **Pesqui. Agropecu. Trop.** v.47, n.3, p. 328-335.
- BRASIL (2009) Ministério da Agricultura, Pecuária e Abastecimento. **Regras para análise de sementes**. Ministério da Agricultura, Pecuária e Abastecimento. Secretaria de Defesa Agropecuária. Brasília: MAPA/ACS.
- Cardoso R B, et al. (2012) Potencial fisiológico de sementes de crambe em função de embalagens e armazenamento. **Pesquisa Agropecuária Tropical**. v.42, n.3, p. 272-278.
- Cruz S M, et al. (2013) Vigor tests for evaluation of crambe (*Crambe abyssinica* Hochst) seed quality. **Journal of Seed Science**, v. 35, n. 4, p.485-494.
- Fanan S, Novembre A D L C (2007) Condicionamento fisiológico de sementes de berinjela. **Bragantia**, v. 66, n. 4, p. 675-683.
- Fujikura, Y, et al. (1993) Hydropriming, a simple and inexpensive priming method. **Seed Science and Technology**, v. 21, p. 639-642,.
- Jasper, S.P. et al. (2010) Análise energética da cultura do crambe (*Crambe abyssinica* Hochst.) produzida em plantio direto. **Revista Engenharia Agrícola**, v.30, n.3, p.395-403.
- Matias J R, Ribeiro R C, Aragão C A, Araújo G G L, Dantas B F (2015) Physiological changes in osmo and hydroprimed cucumber seeds germinated in biosaline water. **Journal of Seed Science**, v.37, n.1, p.007-015.
- Kikuti A L P, Marcos Filho J (2009) Condicionamento fisiológico de sementes de couve-flor. **Horticultura Brasileira**. v. 27, n. 2, p. 240-245.
- Labouriau L G (1983) **A germinação das sementes**. Washington: Secretaria Geral da Organização dos Estados Americanos. 174 p.
- Lima J J P, Freitas M N, Guimarães R M, Vieira A R, Ávila M A B (2015) Accelerated aging and electrical conductivity tests in crambe seeds. **Ciência e Agrotecnologia**, v. 39, n.1, p.7-14.
- Maguire J D (1962) Seeds of germination-aid selection and evaluation for seedling emergence and vigor. **Crop Science**, v. 2, p. 176-177.
- Marcos Filho J, Kikuti A L P (2008) Condicionamento fisiológico de sementes de couve-flor e desempenho das plantas em campo. **Horticultura Brasileira**, v. 26, n. 2.

- Matias J R M, Torres S B T, Leal C C P, Leite M S L, Carvalho S M C (2018) Hydropriming as inducer of salinity tolerance in sunflower seeds. **R. Bras. Eng. Agríc. Ambiental**, v.22, n.4, p.255-260.
- Michel B E, Kaufmann M R (1973) The osmotic potential of polyethylene glycol 6000. **Plant Physiology**, v. 51, n. 6, p. 914-916.
- Oliveira A B, Gomes-Filho E (2010) Efeito do condicionamento osmótico na germinação e vigor de sementes de sorgo com diferentes qualidades fisiológicas. **Revista Brasileira de Sementes**, v. 32, n. 3 p. 025-034.
- Panno G, Prior M (2009) Avaliação de substratos para a germinação de crambe (*Crambe abyssinica*). **Cultivando o Saber**, v.2, n.2, p.151-157.
- Peske F B, Novembre A D L C (2010) Condicionamento fisiológico de sementes de milho. **Revista Brasileira de Sementes**, v. 32, n. 4, p. 132 – 142.
- Pallaoro D S, Camili E C, Guimarães S C, Albuquerque M C F (2016) Methods for priming maize seeds. **Journal of Seed Science**, v.38, n.2, p.148-154.
- Reis R G E, et al. (2012) Physiological quality of osmoprimered eggplant seeds. **Ciência e Agrotecnologia**, v. 36, n. 5, p. 526-532.
- Santos L A S, Rosseto C A V (2013) Testes de vigor em sementes de *Crambe abyssinica*. **Ciência Rural**, v.43, n.2, p.233-238.
- Thornton J M, Powell A A (1995) Prolonged aerated hydration for improvement of seed quality in *Brassica oleracea* L. **Annals of Applied Biology**, v. 127, p.183-189.
- Taylor A G, Allen P S, Bennett M A, Bradford K J, Burris J S, Misra M K (1998) Seed enhancements. **Seed Science Research**, v. 8, p. 245–256.