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ENHANCEMENT OF CANOLA SEED GERMINATION AND SEEDLING EMERGENCE IN LOW WATER POTENTIALS BY PRIMING

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ABSTRACT

Germination and emergence of canola (*Brassica napus* L. cv. Cobra) under stressed environmental conditions such as low water potentials appear to be major obstacles in obtaining suitable stand establishment and subsequent oil production. Priming regimes were evaluated on canola seeds in germination and seedling tests having low water potentials to determine if these solutions could be improve seed and seedling performance. The regimes included KCl, KNO3, polyethylen glycol 6000 (PEG6000) at -1.0 and -2.0 MPa for 2 days at 30°C and distilled water (DH2O) for 24 h at 30°C. Primed and nonprimed control seeds were then germinated in 0, -0.5, -1.0 and -1.5 MPa created by PEG6000 solution. Total percent germination of nonprimed and primed seeds were significantly lesser at low water potentials than 0 MPa. Although seeds primed with KNO3 at -1.0 MPa had significantly higher germination than all other priming regimes tested. including PEG6000 at -1.0 MPa. Also in pot experiment under controlled conditions. priming canola seed with KNO3 at -1.0 MPa for 2 days at 30°C was effective in increasing seedling performance in low soil water potentials.

Key Words: Canola. Sead germination. Cropstand