Effect of Priming on Seed Storage in Marigold (*Tagetes* spp.)

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Marigold (*Tagetes* spp., family Asteraceae) is a native of South and Central America, especially Mexico and commercially being grown world over for aesthetic value and loose flower production. Fast decline in vigour and viability of marigold seeds is one of the main problems under ambient storage conditions. Seed enhancement techniques, such as seed priming, can be useful in increasing the germination, seedling vigour and viability. Therefore, present investigation were carried out to determine the influence of various priming strategies (Hydropriming with deionized water for 12 and 24 h, Osmopriming with Polyethylene glycol (PEG) solution at -0.2, -0.5 MPa for 24 and 48 h and Halopriming KNO_3 (2%) for 12 and 24 h) on different seed quality parameters in two varieties of marigold i.e. Pusa Narangi Gainda (African marigold) and Pusa Arpita (French marigold). In this experiment, primed and non-primed seeds were packed in four different packaging materials [Polylaminated Aluminume foil paper packet, Polythene packet (700 gauges), Paper packet, Paper packet with silica gel] and stored for 12 months at three different temperatures (ambient, 15^{o}C and 4^{o}C). The experimental findings indicated that priming treatments significantly affected the physiological (germination percentage, speed of germination, seedling vigour and vigour index) parameters in both the varieties of marigold as compared to control (non-primed seeds). Among all the priming treatment, hydropriming for 12 hour along with osmopriming with Polyethylene glycol (-0.5 MPa osmotic potential) for 24 hour were found to be the best invigouration methods for enhancing the seed quality parameters in the laboratory. Among the packaging material aluminum foil packet was found to be the best. Similarly among the different temperatures, storage of primed seeds at 4^{o}C was found to be superior. It is concluded that when the primed seeds packed in suitable packaging material (aluminum foil packets) and stored at low temperature (4^{o}C) could significantly enhance the longevity of the seeds even after 12 months in both the varieties of marigold.