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SEED PRIMING ENHANCES SEED GERMINATION AND SEEDLING GROWTH OF FIVE WILD EDIBLE SPECIES

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Abstract

Cultivation of wild species is often faced with low germination and seedling emergence rates as well as poor stand establishment. Therefore, this study aimed at investigating the effect of various priming treatments to promote germination of *Scolymus hispanicus* L., *Sonchus oleraceus* L., *Crithmum maritimum* L., *Cichorium spinosum* L. and *Portulaca oleracea* L. (two populations). Seed priming was achieved by different physical and chemical treatments, namely hydropriming, NaCl (50, 100 mM), gibberellic acid (10, 50, 100 μ M) and ascorbic acid (50, 100 mg L⁻¹), while non-treated plants served as controls. Priming effects were assessed on germination percentage, seed water absorbance, shoot and root length and seedling vigor index. Seed priming drastically affected all traits in a species and genotype depended manner, as pronouncedly evidenced in *S. hispanicus* which showed the highest germination and growth rates. *S. oleraceus* was benefitted from osmo-priming, especially at 50 mM NaCl, both in terms of germination and seedling growth, whereas *C. maritimum* and *C. spinosum* showed enhanced germination and growth rate at 50 μ M and 10 μ M GA₃. The latter species, also showed enhanced germination capacity at 100 mg L⁻¹ ascorbic acid. In contrast, the germination potential of *P. oleracea* was not positively affected by chemical seed priming, as populations 1 and 2 showed enhanced germination rate either at controls or hydro-primed seeds respectively. Collectively, our findings suggest the potential stimulatory effect of priming treatments on germination of wild edible species, thus providing better prospects for their cost-effective commercial use as alternative/complementary cultivated crops.

Key words: *seed priming, wild edible species, osmo-priming, germination percentage, seedling vigor index.*

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