

EFFECT OF PHYSICAL AND CHEMICAL SEED TREATMENTS ON GERMINATION AND VIGOUR INDEX IN AONLA (*EMBLICA OFFICINALIS*)

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Abstract: *Emblca officinalis* is an important medicinal plant and used as a constituent of ayurvedic and unani medicine. The seed showed dormancy and causes a big challenge in seed germination. Exogenous dormancy is observed due to non imbibitions of water by intact hard seed coat. Enhanced water imbibition rate (0.364-0.395gm/gm dry seeds/day) was observed in mechanically chipped treated seeds on 1st day soaking. The seeds taken under study were subjected to quick seed viability test (TZ) which showed 91-94% seed viability. The low value of electrical conductivity (0.219-0.230µmho/cm) of the seeds leachates, also indicated the high intactness of the seeds. The hot water treatment for 10 minutes recorded better germination (65-75%) as compared to the mechanical (chipping) treatment (35-40%). The chipped seeds treated with 0.5% KNO₃ was found most effective in enhancing germination percentage (95-100), vigour index and speed of germination over the GA₃ and Thiourea treatments. Thus the mechanically chipped seeds followed by imbibition of chemical (GA₃, KNO₃ and Thiourea) solution recorded synergistic action in terms of the better germination and the seedling vigour.

Keywords: *Emblca officinalis*, Dormancy, Germination, Scarification, Imbibition, Vigour index

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