

Breaking the seed dormancy in *Phyllanthus emblica* L. (V. Nelli)

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Phyllanthus emblica V. Nelli, belonged to family Euphorbiaceae, is an important species as a medicinal plant. The fruit (drupe) of *P. emblica* is the economically important component. It is also being used in industrial processes such as synthesis of ayurvedic drugs and manufacturing of fruit juices. When establishing breeding programs or orchards of *P. emblica*, seed germination is a huge problem because seeds of *P. emblica* have a long dormancy period and show very low rates of germination. This is greatly contributing to remain it as an underutilized fruit crop because of the lack of quality planting material. According to our knowledge, no detailed studies have been carried out to study the seed dormancy of *P. emblica* and a method to break the dormancy, although it is being identified as a prime requirement to uplift this crop from its underutilized status. Thus the objective of this study was to identify a method to overturn the seed dormancy of *P. emblica*. The seeds were extracted from mature drupes. The selected viable seeds were subjected to four pre-treatment's; no pre-treatment, seed scarification, seed scarification and pre-treatment with 1% gibberellin and seed coat removal and pre-treatment with 1% gibberellin. The seed dormancy was only overturned with a germination percentage of 43% by the seed pre-treatment, seed scarification and pre-treatment with 1% gibberellin (after 85 days of pre-treatment) and no other pre-treatment methods were able to break the dormancy of any seeds. Therefore, it can be concluded that seed coat scarification and gibberellin pre-treatment can be used to obtain increased germination of *P. emblica* seeds in conducting breeding programs and establishing orchards for drupe production at commercial scale.

Key words: Gibberellin, *Phyllanthus emblica*, Seed dormancy, Seed scarification

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