

Effects of Pre-Storage Invigoration Treatments on Ageing *Dendrocalamus hamiltonii* Seeds

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Abstract : Bamboo as an ancient herbal medicine has been used for thousands of years in Asia and goes by many names such as tabashir, banslochan etc. It is often used for its tonic and astringent properties. Modern analysis of bamboos show high amount of vitamins and minerals which makes them valuable as a curative. Bamboo leaf decoction and young shoots are known as remedy for intestinal worms, healing of ulcers and stomach disorders. Bamboos are known to be propagated by large scale plantations but propagation through seeds occurs very limited as they have very short viability of few months. Seeds loses viability over a period of time even under controlled conditions and important factors that affect seed viability is the decline in reserve food material, decrease in membrane integrity and fall in endogenous level of growth hormones. Invigoration treatments that include hydration, dehydration, incorporation of bioactive chemicals such as growth regulators, nutrients and antioxidants etc. improve the seed performance. Our studies were aimed to determine the most effective invigoration treatments to enhance vigour and viability of seeds by following invigoration treatments, i.e., hardening. Treated seeds were stored at controlled temperature and humidity (in desiccators at 4°C). In hardening, chemicals were applied in 3 different concentrations to three replicates of 10 seeds. Hardening was done with GA3, IAA, (each with concentrations of 10 ppm, 20 ppm and 50 ppm), calcium oxychloride, neem leaf powder and clay (each with concentrations of 2%, 5% and 10%). Statistically all the hardening materials were effective but GA3 50 ppm was the most effective one in maintaining germination percentage and vigour index. Hardening treatments increased the germination percentage of seeds, i.e. 86.2%, over control which showed germination percentage of 80.2%. It was concluded that in order to maintain seed viability during storage for longer period of time, invigoration treatments have been found to be very effective.

Keywords : invigoration, seed quality, viability, hardening, membrane integrity, decoction

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