From Forest Nursery Notes, Winter 2009

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Pak. J. Bot., 39(7): 2581-2583, 2007.

ALLEVIATING SEED DORMANCY OF *TECTONA GRANDIS* L. BY TEMPERATURE, PLANT GROWTH REGULATERS AND INORGANIC SALTS

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Abstract

Preliminary studies on the germination of teek seeds (*Tectona grandis* L.) were carried out at the institute of Plant Sciences, University of Sindh by subjecting the seeds with some physical and chemical methods. The viability of seeds were confirmed by 2,3,5- triphenyltetrazolium Chloride. Results revealed that by altering temperature at the germination stage the inhabitatry effect of seed coat was reduced. However scarification treatment with GA_3, Kinetine, H_2SO_4 and KNO_3 also promote the seed germination due to increased softening of the seed coat.

Introduction

Seed of the majority of land plants pass through a phase of dormancy that may be caused by several factors, delaying the whole life cycle of the plant. Ecophysiological studies thus are important for the formation of most desirable means of determining seed viability and consequently germination (Sen, 1977). *Tectona grandis* L. commonly known as Teak or Sagwan is the more prized timber tree by dint of its grain color and strength, the best teak develops in well drained deep alluvial soil with a pH 6.5 – 8.0 and a relatively high Ca and P content (Masilamani, 1996).

The main problem in teak is poor germination in nurseries, only 3% seeds results in a plantable seedling where teak found naturally, because of irregular dormancy cycle. The nature of barriers which prevent germination can be physiological (presence of germination inhibitors in felty mesocarp), physical (thick and hard endocarp) and morphological (hormone imbalance in seeds) which results in low germination (Masilamani, 1996). In Pakistan the cultivation of teak has continued to some extent however, the dormancy of its seeds remain hurdle for enhanced spreading of teak population. Application of chemical have been found to bring about the germination of dormant seeds (Bradbeer, 1968) alternating soaking and drying of seeds gave fairly constant results. The present studies were therefore, carried out to break the dormancy of seed of *Tectona gradis* L., by using physical and chemical treatments.

Material and Methods

Mature fruits/seeds were collected from the ground at the Miani Forest during January to April 2000. The seed were washed with sterile distelled water after removing apocarps and then subjected to scarification hot temperature (40°C), cold temperature (4°C) treatments, absolute H_2SO_4 and HCL treatment were given for softening of hard seed coat followed by KNO_3 treatment. Seeds were pre-incubated in Gibberlic acid (GA_3) and Kinetine for 1to 6 weeks at different concentrations. Before setting them for germination, the seeds were decoated or split open by pressing along the margins and break them. Drying and soaking method was also used.