SEED GERMINATION OF PINUS CARIBAEA MORELET AS INFLUENCED BY SOIL MEDIUM, CHEMICAL PRETREATMENT, TEMPERATURE AND SOWING DEPTH

H.S.K. Ferando[a], K. Vivekanandan[b], and S.L. Ranamukaarachchi[a]
a. Department of Crop Science, University of Peradeniya.
b. Department of Forestry, Colombo.

Pinus caribaea variety Hondurensis is an important forest plantation species and seeds are imported from Holland at a high price. However, seed germination under local conditions was very poor. Therefore, this study was conducted at the Forest Research Division in the Department of Forestry in Colombo during September - November, 1985 to ascertain the optimum requirements for seed germination of P. caribaea.

The following four sets of treatments were tested in separate experiments : (i) Four-soil media as top soil, sand, vermiculite and top soil + sand mixture, (ii) Two chemical pretreatments as Hydrogen peroxide (H_2O_2) and Gibberillic acid (GA_3), (iii) Three soil temperatures as room termperature, (25 - 30°C and 40°C, and (iv) Four sowing depths as surface sown, seeded at 1, 2 and 3 cm. deep. The number of seeds germinated was counted from seeding upto 21 days.

The highest seed germination was observed in topsoil + sand mixture (43.7%). Top soil, sand and vermiculite gave seed germinations of 38.7%, 33.3%, and 26.0%, respectively. Among the chemical pretreatments, H_2O_2-treated and GA_3-treated seed had significantly higher seed germinations of 63.0% and 55.3%, respectively, than untreated seeds (42.7%). Seeds exposed to room temperature gave the highest seed germination of 42%. Seeds kept under 8 - 10°C and 40°C did not germinate at all. Surface sown seeds gave the highest germination (42.0%) while seed planted at 1,2 and 3 cm deep had germinations of 20.0%, 15.3% and 4.0%, respectively.

Reference:
Donald,D.G.M. (1975) South Afr. For J. 92: 19-27.

09th Dec. 1987 (Wednesday) 08.30 a.m. - 08.45 a.m.