**Genetic improvement strategies for conservation of polygenic traits of economic importance in *Eucalyptus tereticornis* Sm.**

**\*Shivani Dobhal and Ashok Kumar**

\*Division of Genetics and Tree Propagation

Forest Research Institute, P.O. - I.P.E. Kaulagarh, Dehradun,

Uttarakhand India, 248 195

In India, *Eucalyptus tereticornis* Sm. is an important forest tree species used mainly as raw material for pulp and paper industry and India ranks first in area covered under *Eucalyptus* plantations. Unfortunately, its productivity has not been commensurating with productivity of countries like Brazil. Though ample variability existed for growth and wood traits but it is required to adopt genetic improvement strategies that could lead into the production of productive and divergent genotypes. A provenance cum progeny trial representing 13 provenances and 91 families established in collaboration with CSIRO, Australia, at Forest Research Institute, India in year 2002. A total of 2216 Plus trees were evaluated for growth parameters *viz.* height, clear bole height (CBH) and diameter at breast height (DBH) and also analyzed for index value. The mean values before selection for average height, CBH, DBH and index value were 8.87, 3.40, 0.22 and 42.80, which were improved after selection to 16.39, 10.16, 0.46 and 100, respectively. In terms of per cent of improvement, substantial improvement for 84.83, 199.21, 107.93 and 133.65 was recorded for height, CBH, DBH and Index value. The maximum improvement after selection was recorded for CBH followed by index value, DBH and height. At total of forty seven plus trees was screened adopting index method of selection from a provenance trail representing selection intensity of 2.12 %. The studies were directed towards identification of *Eucalyptus* genotypes that will be useful in operational and production forestry to accelerate tree breeding programme for higher genetic gain.

**Key words:** Provenance, breeding, Index value, genetic gain