

Genetic Variation for Growth Traits in Selected full-sib progeny-clones of *Populus deltoides* Bartr. ex Marsh.

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Abstract—The present study deals with the genetic variation in growth traits viz. tree height and diameter at breast height (DBH) of selected full-sib seedling progeny-clones of *Populus deltoides* Bartr. ex Marsh. collected from Gadariabagh, Kichha (Udham Singh Nagar, Uttarakhand) India. Analyses of variance were performed for each trait, to test for the significance of differences among the individuals of different progeny-clones. Height and DBH showed significant variations ($P < 0.05$) among the individuals of different progeny-clones. Broadsense heritability for height and DBH was 0.58 and 0.65 with a genetic gain of 17.60 and 30.20 respectively. Overall individual 75 of progeny-clone Wimco-62 × Wimco-108 was better performer with maximum height and DBH. All the progeny-clones were clustered into five clusters at 5 rescaled distance cluster combine on the basis of the Euclidean distance of the observed traits. Individual number 28, 75 and 90 were divergent. Moreover, 23 individuals clustered together showed better growth traits, may well be used in tree improvement programs of the species.

Keywords: Growth traits, *Populus deltoides*, genetic variation, heritability.