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## Variability, heritability and genetic advance in mulberry (*Morus* spp.) for growth and yield attributes

PDF (Size: 267KB) PP. 208-213 DOI: 10.4236/as.2012.32024

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### ABSTRACT

Genetic improvement of crop plants is brought about by manipulating the genetic makeup through systematic breeding techniques or by employing modern biotechnological tools. Application of systematic breeding technique to a large extent is decided by the knowledge on the genetic control of the traits. Keeping this in view, nine mulberry genotypes were evaluated for different growth and yield attributing traits viz., number of tillers (NT), plant height (PH), total shoot length (TSL), nodal distance (ND), leaf fall % (LF), number of leaves/plant (NLP), weight of 100 fresh leaves (WFL), weight of 100 dry leaves (WDL), single leaf area (LA), leaf area index (LAI), aboveground biomass (AGB), leaf harvest index (LHI) and leaf yield (LY) and estimated the magnitude of genotypic and phenotypic variation, heritability, genetic advance and correlation coefficients. The broad sense heritability for these traits ranged from 63.942 (WFL) to 13.261 (PH). High heritability coupled with high genetic advance was recorded for the characters WFL, LF, LA, WDL and LY suggesting the higher genetic control over these traits. Leaf yield showed significantly positive phenotypic and genotypic correlations with all other growth traits except PH and LF. Leaf fall had significant negative correlations with all the highly heritable yield attributes viz., ND (-0.379), WDL (-0.225), LA (-0.346), LAI (-0.233) at 1% level and AGB (-0.148), LHI (-0.122) and LY (-0.146) at 5% level. Likewise, it showed positive correlations with TSL (0.558), NLP (0.264) and PH (0.221). Since mulberry is mainly cultivated for leaf yield, genotypes having higher WFL, LA, WDL and LY and less LF must be given importance during parent selection to evolve high yielding varieties with less leaf fall across different seasons in mulberry.

### KEYWORDS

Variability; Heritability; Genetic Advance; Yield Attributes; Low Leaf Senescence

### Cite this paper

Doss, S. , Chakraborti, S. , Roychowdhuri, S. , Das, N. , Vijayan, K. , Ghosh, P. , Rajan, M. and Qadri, S. (2012) Variability, heritability and genetic advance in mulberry (*Morus* spp.) for growth and yield attributes. *Agricultural Sciences*, 3, 208-213. doi: 10.4236/as.2012.32024.

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