

Genetic variation and heritability estimation in *Jatropha curcas* L. population for seed yield and vegetative traits.

Abstract

An evaluation of six *Jatropha curcas* L. accessions was carried out at the Field 10, Faculty of Agriculture, Universiti Putra Malaysia, Serdang, Selangor. The aim of this study was to determine the seed yield and vegetative traits of the accessions, to estimate the genetic variability and heritability of the population and to study the relationships that exist among these traits. The experiment was conducted using Randomized Complete Block Design (RCBD) with three blocks, six accessions per block and 16 plants per plot. Most of the vegetative and yield traits showed no significant variation among the accessions except in plant height, seed thickness, seed breadth, and total seed per accession. The heritability study showed that the broad sense heritability values ranged from 0 to 23.04%, the highest value was at plant height. This study indicated that environmental factors played an important role than the genetic factor. The correlation study showed that seed length had positive correlation with seed thickness, seed breadth and seed weight. From this study, Accession V5 and V2 showed high potential for future breeding program.

Keyword: *Jatropha curcas*; Genetic variation; Heritability; Seed yield; Environmental factor; Medicinal value.