Inheritance of Seed Yield in Azuki Bean [*Vigna angularis* (Willd.) Ohwi and Ohashi]

Weerapun Kunkaew[1], Suthat Julsrigival[2*], Chuckree Senthong[2] and Dumnern Karladee[2]

[1]*Royal Project Foundation, 65 Suthep Road, Chiang Mai 50200, Thailand*

[2]*Department of Agronomy, Faculty of Agriculture, Chiang Mai University, Chiang Mai 50200, Thailand*

**Corresponding author. E-mail: suthat@chiangmai.ac.th*

ABSTRACT

Six crosses of azuki bean, viz. Kamuidainagon × Hondawase, Kamuidainagon × Akatsukidainagon, Kamuidainagon × Erimo, Hondawase × Akatsukidainagon, Hondawase × Erimo and Akatsukidainagon × Erimo were studied on the inheritance of seed yield per plant. The study was conducted under three highland conditions in the northern Thailand during August to November, 2005. Genetic analysis using generation means revealed significant difference among generations. Dominance effect (h) was found to be more significant than the additive effect (d) in most crosses at all locations. The epistatic interactions (i, j and l) also played significant roles in controlling the inheritance of this trait. Seed yield per plant was controlled by genes with significant in additive, dominance, and epistatic effects suggesting that an effective selection to improve this trait should be mild in earlier generations and intense in later generations.

Key words: Azuki bean, Gene effects, Generation mean analysis

INTRODUCTION

Azuki bean [*Vigna angularis* (Willd.) Ohwi and Ohashi] is mostly grown on highland areas in the northern Thailand. This crop is anticipated to be a good potential cash crop for highland farmers. Some progress was made to improve the yield of this crop through employing a new variety, "Pangda" by the Royal Project Foundation (Julsrigival et al., 2007). Yield stability assessment of genotypes was reported by Kunkaew et al., (2004).

Since seed yield of field crops is a complex character, direct selection for this trait is oftenly not effective. Selection for yield components, especially seed yield per plant has been widely used as a possible method for seed yield improvement. For selection to be effective, information on genetic parameters associated with inheritance of the character is a prerequite for planning a good sound-breeding programme.