Heterosis for the improvement of yield in mungbean \textit{[Vigna radiata (L.) Wilczek]}

P.A. Tantasawat$^{1,2}$, P. Khajudparn$^{1,2}$, T. Prajongjai$^1$ and O. Poolsawat$^1$

$^1$School of Crop Production Technology, Suranaree University of Technology, Nakhon Ratchasima, Thailand
$^2$Center of Excellence on Agricultural Biotechnology, (AG-BIO/PERDO-CHE), Bangkok, Thailand

Corresponding author: P.A. Tantasawat
E-mail: piyada@sut.ac.th

Received October 13, 2014
Accepted April 17, 2015
Published September 8, 2015
DOI http://dx.doi.org/10.4238/2015.September.8.5

**ABSTRACT.** Heterotic effects of mungbean hybrids from 25 crosses between parents differing in 9 agronomic and physiological traits were evaluated for various selected traits and seed yield. Significant heteroses were observed in most selected traits, except for the number of seeds per plant. When the heterosis of seed yield was evaluated in these hybrids, significant heterosis was found in 9 crosses, which were selected based on the number of pods per plant, number of clusters per plant, pod length, number of seeds per pod, total dry matter, and root length density. These crosses may be exploited for mungbean yield improvement. Nine \( F_8 \) lines from 2 of these 9 crosses (KPS 1 x V 2106 and SUT 1 x V 4785), a selection based on significant heterosis for seed yield and high seed yield of \( F_1 \) and \( F_2 \), which possessed a higher seed yield than their respective certified variety parents, were identified and these may be useful in future breeding programs.

**Key words:** Agronomic trait; Hybrid; Mungbean; Physiological trait; Plant breeding