ABSTRACT

ENDANG MUCHLIS. Morphological and Agronomical Traits of Double Haploid of Hot Pepper (Capsicum annuum L.) and Its Heterosis Potential of Hybrid. Under the direction of SUHARSONO, and ENCE DARMO JAYA SUPENA.

Hot pepper (Capsicum annuum L.) is the most important vegetable crops in Indonesia, but its productivity is still lower than that several other tropical Asian countries. Development of hybrid varieties using doubled haploid plant as parental is potential alternative to increase their productivity. The aims of this research was to describe morphological and agronomical characters of some genotypes of double haploid hot pepper plants and to analyse the heterosis effect of their hybrid. The experiment was conducted by using Randomized Block Design, with 3 blocks as replication. The result showed that there were diversity in double haploid plants for morphological and agronomical traits. The diversity not only between type of big and curly pepper, but also between in the big and curly pepper itself. Therefore, its potential for development hybrid varieties, especially in the character of leaves, stem, habitus, and fruits has to be detemined. TD-1 genotypes showed the biggest value for the characters of fruit weight and seed quantity, GD-1 for the characters of diameter and the length of fruit, and CD-1 for the character of fruit quantity. Based on the character of fruit weight per plant as the main consideration, the hybrid GD-2 x CD-2 and CD-1 x TD-1, with productivities 12.6 ton/ha and 8.4 ton/ha and heterosis 227.3 % and 49.4 %, respectively, had potential to be hybrid varieties with high production.

Keywords: Morphological, agronomical, double haploid, heterosis, Capsicum