SUMMARY

FARADILA DANASWORO PUTRI. Yield Evaluation of 17 Chili Pepper (Capsicum annuum L.) Lines in Bogor, West Java. (Supervised by MUHAMAD SYUKUR and SYARIFAH IIS AISYAH).

This yield evaluation research was done to evaluate and select the potential new chili pepper line created by the Plant Breeding Program in the Department of Agronomy and Horticulture of Bogor Agricultural University. The objectives of this research were to evaluate the variability and yield of 17 new lines compared to three commercial varieties, and calculate estimated character broad sense heritability values.

This research had been done from November 2011 until May 2012 in Plant Breeding Laboratory, Department of Agronomy and Horticulture, Bogor Agricultural University (IPB) and Leuwikopo Experimental Station, Dramaga (6°56’34”S, 106°72’56”E). The genetic materials used in this research were 17 open pollinated chili pepper lines and three commercial varieties. The chili pepper lines were IPB 110005-91-13-12, IPB 110005-91-13-4, IPB 110005-91-17-18a, IPB 110005-91-17-3, IPB 110005-91-4-6, IPB 110005-91-4-8, IPB 120005-1-1-17, IPB 120005-5-11-1, IPB 120005-5-11-2, IPB 120005-5-19-3, IPB 009019-3-4-10, IPB 009019-3-4-7, Pesona I-1, Pesona I-2, IPB 002046-2-5-8, IPB 002046-2-14c-14 and IPB 002001-4-3b-5. While the three commercial varieties were Lembang I, Trisula and Tit Super.

This research was arranged in Randomized Complete Block Design. It used 20 different chili genotypes with three replications, therefore there were 60 experimental units. Analysis of quantitative data was done by using analysis of variance (ANOVA) and Dunnett test with α = 5%. Estimated broad sense heritability value was also calculated to measure the role of genetic factors in the phenotype.

Result showed that genotype had a very significant influence in almost all character, except for the variable of total marketable fruit weight per plant and fruit length. The lines Pesona I-1, Pesona I-2, IPB 110005-91-17-3, IPB 120005-
1-1-17, IPB 120005-5-11-2, IPB 009019-3-4-10 and IPB 110005-91-13-4 are new chili pepper lines that had higher yield than the compared varieties.

All of the quantitative character that were observed had high estimated broad sense heritability value. This shows that environmental factors were not as influential as genetic factors in the chili pepper plant phenotype. There are also characters that had positive and significant correlation with chili pepper plant height, fruit length, fruit weight, fruit weight per plant, fruit per plant and potential productivity.