

SUMMARY

WAHYU NUR MUHAMMAD TRIANTO. 0810480106. PRELIMINARY YIELD TRIALS OF 8 STRAINS F6 BROWN COTTON (*Gossypiumhirsutum* L.). Supervised by Ir. Sri Lestari P., MS, Ir. Respatijarti, MS, and Ir. Emy Sulistyowati, M. Ag, Ph.D

Cotton (*Gossypiumhirsutum* L.) is one of the fiber-producing plants that has high economic value. Market demand for cotton fiber continues to increase every year primarily for industrial use textile and textile products (TPT). Indonesia is the 13th textile industry in the world the 5th in Asia and the 1st in Southeast Asia (Anonymous^d, 2012). Needed by the textile industry (textile and clothing) more than 99% of raw materials in the form of fiber is imported from fiber-producing countries, and only <1% of domestic production of raw materials accounted for the textile industry (Anonymous, 2010). By looking at the domestic needs which to be met by domestic production, the productivity and quality of cotton still needs to be improved. Some cotton varieties that have been released for the fiber produced are heving white fiber. There are varieties of cotton that are not known by many people, namely browned cotton. Benefits of using brown cotton fiber are more resistant to washing, not easily fade by ultra violet rays, and not require chemical staining process. While the white cotton fibers need coloring process. After the coloring process, the residue of colouring process called waste water. This is very dangerous for the environment because, it can damage the ecological environment around it. Therefore, breeders think hard in order to assemble the development of cotton varieties that produce high productivity to meet the needs of domestic cotton, to cotton varieties with coloured fibers is aiming to reduce staining on fabric which waste is very dangerous to the environment (Hustvedt and Crews, 2005).

The experiment was conducted in March to September 2012 at Karangploso experimental garden, of the Indonesia Research Institute for Sweetener and Fiber Crops, which situated. The location of the level of research on 515 m above sea level with an average rainfall 1,833 mm / year, average temperature of 20⁰C-28⁰C, average humidity 74-82%, and Inceptisol type of soil. The tools used in this study is ground processing equipment (plows, hoes), drill, nameplate, Munsell Color Charts for Plant Tissues, markers, gauges (meter), rope, labels, and digital cameras. Materials used in this study were urea, SP 36, KCl, pesticides and seeds of 8 F6 lines. This experiment was aranget in a Randomized Block Design (RAK), consisting of 8 F6 lines as treatments with 2 (two) replications. The eight lines were K1 (06063/3), K2 (06063/5), K3

(06060/6), K4 (06062/1), K5 (06064/6), K6 (06066/2), K7 (06062) and K8 (06066). Parameters hairy of observed were plant height, number of vegetative branches, number of generative branches, hairy of leaves, number of boll, crops and potential yield per hectare. The data obtained were analyzed by analysis of variance to determine if whether the treatment results were significantly different ($P < 0.05$) followed by Honestly Significant Difference test at the level of 5%.

The results showed that 8 different lines were not significantly different on plant height, number of vegetative branches, number of generative branches but significant by different on the boll count, leaves hair and yield (kg/30 m²). In fiber color observations, there is mixed of brown and white fiber in strain K5 and K7, whereas in strain K1, K2, K3, K4, K6 the fiber is uniformed. The coefficient of genetic and phenotypic diversity on plant height, number of vegetative branches, number of generative branches, boll count, leaves hair and seed cotton yield per plot (kg) has a low value. Low value on Coefficient of Genetic Diversity and Coefficient of Fenotip Diversity showed that the 8 F₆ cotton lines are uniformed.

The conclusion of this study is that out of 8 F₆ cotton lines there are (*Gossypium hirsutum* L.) four lines selected i.c : K1 (06063/3), K2 (06063/5), K6 (06066/2), K8 (06066) which have high yield potential of > 1.6 ton seed cotton/ha and brown colored fiber.