

RINGKASAN

Kedelai merupakan sumber protein, lemak, vitamin dan serat yang dikonsumsi hampir seluruh masyarakat Indonesia. Kebutuhan kedelai di Indonesia tidak seimbang dengan kemampuan produksi kedelai dalam negeri. Kebutuhan kedelai yang terus meningkat setiap tahunnya menyebabkan produksi kedelai harus ditingkatkan. Salah satu caranya adalah melalui pemuliaan tanaman untuk mendapatkan varietas unggul yang memiliki daya hasil tinggi. Tujuan penelitian ini adalah untuk mengetahui nilai keragaman genetik, heritabilitas dan hubungan antar komponen hasil dengan hasil tanaman kedelai.

Penelitian ini dilaksanakan di *Eksperimental Farm* Fakultas Pertanian Unsoed pada bulan Februari 2020 sampai bulan Juni 2020. Genotipe yang diuji pada penelitian ini antar lain genotipe 13, 16, 33, 45, 114, F20, F40, F42, Dena dan Kaba. Rancangan yang digunakan yaitu Rancangan Acak Kelompok (RAK) dengan 3 ulangan sehingga terdapat 30 unit percobaan. Karakter pengamatan yang diukur yaitu warna hipokotil, warna bunga, bentuk daun, tipe pertumbuhan, umur berbunga, jumlah buku batang utama, jumlah cabang pertanaman, tinggi tanaman, umur panen, jumlah polong pertanaman, jumlah polong isi, jumlah biji total, bobot biji pertanaman, bobot 100 biji, bobot brangkasan kering dan indeks panen.

Hasil dari penelitian yang telah dilaksanakan menyimpulkan adanya keragaman genetik yang luas pada tinggi tanaman, umur panen, jumlah polong pertanaman, jumlah polong isi, jumlah biji total dan bobot brangkasan kering. Didapatkan nilai heritabilitas yang tinggi pada jumlah polong pertanaman, jumlah polong isi dan bobot 100 biji. Jumlah polong pertanaman berpotensi menjadi indikator seleksi untuk mendapatkan hasil biji kedelai karena memiliki keragaman genetik luas, heritabilitas tinggi dan berkorelasi nyata dengan bobot biji pertanaman. Diperoleh galur potensial berumur pendek yaitu genotipe 33 (101,45 hst), 114 (98,66 hst), 13 (101,5 hst), 16 (96,72 hst) serta potensial berdaya hasil tinggi yaitu genotipe 33 (13,4 gram), F20 (10,39 gram), 114 (12,56 gram), 13 (15,4 gram), 16 (13,94 gram), 45 (10,43 gram) yang tidak berbeda nyata dengan varietas pembanding yaitu Dena dengan rerata umur panen dan hasil pertanaman 96,66 hst dan 13,78 gram.

SUMMARY

Soybean is a source of protein, fat, vitamins, and fiber which is consumed by almost all Indonesian people. The need for soybeans in Indonesia is not balanced with the ability to produce soybeans in the country. The need for soybeans continues to increase every year causing soybean production to be increased. One way is through plant breeding to get superior varieties that have high yields. The purpose of this study was to determine the value of genetic diversity, heritability, and the relationship between yield components and soybean crop yields.

This research was conducted at the Experimental Farm, Faculty of Agriculture, Unsoed from February 2020 to June 2020. The genotypes tested in this study included genotypes 13, 16, 33, 45, 114, F20, F40, F42, Dena, and Kaba. The design used the method used was a randomized block design (RBD) with 3 replications so there were 30 experimental units. The observed variables measured were hypocotyl color, flower color, leaf shape, growth type, flowering age, number of main stem nodes, number of planting branches, plant height, harvest age, number of pods planted, number of filled pods, the total number of seeds, seed weight of plants, the weight of 100 seeds, weight of dry stover and harvest index.

The results of the research that has been carried out conclude that there is wide genetic variation in plant height, harvesting age, number of pods planted, number of filled pods, the total number of seeds, and dry stover weight. High heritability values were obtained for the number of pods planted, the number of filled pods, and the weight of 100 seeds. The number of pods planted can be an indicator of selection to obtain soybean seed yields because it has wide genetic diversity, high heritability, and has a significant correlation with seed weight planted. Short-lived potential lines were obtained, namely genotypes 33 (101.45 dap), 114 (98.66 dap), 13 (101.5 dap), 16 (96.72 dap) and potential yield high, namely genotypes 33 (13.4 grams), F20 (10.39 grams), 114 (12.56 grams), 13 (15.4 grams), 16 (13.94 grams) and 45 (10.43 grams) which were not significantly different from the control varieties, namely Dena with an average age of harvest and crop yield of 96.66 dap and 13.78 grams.