RINGKASAN

Siti Nur Aisyah. 0810480098. Evaluasi Sifat Morfologi Enam Aksesi Buncis (*Phaseolus vulgaris* L.) dan Korelasinya terhadap Daya Hasil. Di bawah bimbingan Dr. Ir. Andy Soegianto, CESA dan Prof. Dr. Ir. Kuswanto, MS.

Buncis merupakan tanaman semusim yang berbentuk perdu. Buahnya (polongnya) pendek, yakni ± 12 cm, lurus atau bengkok dan warnanya bermacam-macam (Sunarjono, 1990). Buncis terdiri dua tipe pertumbuhan yaitu tipe merambat dan tipe tegak. Kacang buncis merupakan salah satu sumber protein nabati yang murah dan mudah dikembangkan. Berdasarkan data dari Badan Pusat Statistik tentang produksi sayuran indonesia menyebutkan bahwa produksi buncis dari periode tahun 2007-2014 berturut-turut adalah sebagai berikut 266.790 ton, 266.551 ton, 290.993 ton, 336.494 ton, 334.659 ton, 322.145 ton, dan 327.378 ton, 315.404 ton per hektar (BPS, 2015). Prospek pengembangan buncis masih cukup baik, produktivitas masih dapat ditingkatkan. Teknologi yang cukup mampu memperbaiki produktivitas buncis adalah tersedianya varietas-varietas buncis yang berdaya hasil tinggi serta berkualitas sesuai dengan selera konsumen. Penelitian ini bertujuan untuk mengevaluasi sifat morfologi tanaman buncis sehingga dapat menjadi acuan untuk memilih benih buncis yang berdaya hasil tinggi serta berkualitas. Selain itu untuk mengetahui korelasi antara morfologi tanaman buncis dengan daya hasil yang diperoleh.

Penelitian ini dilaksanakan di Jalan Mawar, Kelurahan Asrikaton, Kecamatan Pakis, Kabupaten Malang dengan ketinggian tempat ± 420 m dpl, curah hujan ± 1800 mm/th, dengan suhu udara ± 23^0 C pada bulan November 2012 sampai dengan bulan Februari 2012. Alat yang digunakan: cangkul, mulsa hitam perak, tugal, ajir, tali rafia, penggaris, alat tulis, kamera, timbangan analitik. Bahan yang digunakan: enam aksesi tanaman buncis (*Phaseolus vulgaris L.*): INZ-1, INZ-2, LPK-1, LPK-2, LBS-2, LBS-4, dan varietas Lebat-3 sebagai pembanding, Urea, SP-36, KCl, NPK Mutiara, pupuk kandang sapi. Parameter pengamatan: karakter kualitatif (tipe pertumbuhan, warna batang, warna bunga, warna sayap bunga, warna daun, bentuk anak daun, ujung anak daun, warna polong, irisan melintang polong, kelengkungan polong, permukaan polong, bentuk biji, warna biji) dan karakter kuantitatif (umur awal berbunga, jumlah bunga, lama berbunga, jumlah daun, panjang tanaman, diameter batang, umur panen, panjang polong, lebar polong, bobot polong, jumlah polong per tanaman, jumlah biji per polong, bobot polong per tanaman, panjang biji, lebar biji, jumlah biji per tanaman, bobot 100 biji, umur panen kering, periode pengisian polong). Penelitian ini disusun menggunakan Rancangan Acak Kelompok (RAK) yang terdiri dari tujuh perlakuan dengan tiga kali ulangan. Aksesi berperan sebagai perlakuan sehingga terdapat tujuh perlakuan, enam aksesi buncis dan satu varietas

buncis sebagai pembanding. Evaluasi sifat morfologi mengacu pada *Descriptor List for Phaseolus vulgaris* (IBPGR, 1982) dan untuk mengetahui korelasi antara variabel pengamatan dengan daya hasil digunakan metode analisis kovarian yang dilanjutkan dengan uji t student.

Evaluasi sifat morfologi yang dilakukan didapatkan hasil bahwa terdapat keragaman sifat morfologi pada enam aksesi buncis yang diuji berdasarkan *Descriptor List for Phaseolus vulgaris*, kemudian bila dibandingkan dengan varietas pembanding (LEBAT-3) aksesi LPK-2 dapat direkomendasikan menjadi benih unggul karena memiliki hasil (bobot polong pertanaman) yang lebih tinggi dari varietas pembanding. Untuk karakter yang dikategorikan sebagai hasil terdiri dari Jumlah polong per tanaman (JPT), Jumlah biji per polong (JBiP), Jumlah biji per tanaman (JBiT), Bobot polong (BP), Bobot polong per tanaman (BPT). Hasil korelasinya sebagai berikut jumlah polong per tanaman berkorelasi positif sangat nyata dengan jumlah bunga dan berkorelasi positif nyata dengan lama berbunga. Jumlah biji per polong berkorelasi fenotipik positif nyata dengan panjang tanaman dan berkorelasi fenotipik positif sangat nyata dengan jumlah polong per tanaman. Jumlah biji per tanaman berkorelasi positif sangat nyata dengan jumlah bunga dan jumlah polong per tanaman, kemudian berkorelasi fenotipik positif sangat nyata dengan umur panen, dan juga berkorelasi fenotipik positif nyata dengan panjang polong. Bobot polong berkorelasi positif nyata dengan jumlah biji per polong, kemudian berkorelasi fenotipik positif nyata dengan umur awal berbunga. Bobot polong per tanaman berkorelasi positif sangat nyata dengan jumlah bunga, jumlah polong per tanaman dan jumlah biji per tanaman, kemudian berkorelasi positif nyata dengan lama berbunga dan jumlah daun, dan juga berkorelasi fenotipik positif sangat nyata dengan panjang polong.

SUMMARY

Siti Nur Aisyah. 0810480098. The Morphology Characteristic Evaluation of Six Accessions of Common Bean (*Phaseolus vulgaris* L.) and their Correlations to the Yield. Supervised by Dr. Ir. Andy Soegianto, CESA and Prof. Dr. Ir. Kuswanto, MS.

Common bean is the annual and shrub plant. The fruit (pod) is short which is 12 cm, straight or curved and has variety of colors (Sunarjono, 1990). Common bean has two kind of growth type which are indeterminate and determinate type. Common bean is one source of vegetable protein which is cheap and easily to be grown. Based on the data from Statistic Centre Organization about the Indonesia's vegetable production, it was mentioned that the common bean production from the period of 2007-2014 continuously was 266.790 tones, 266.551 tones, 290.993 tones, 336.494 tones, 334.659 tones, 322.145 tones, 327.378 tones and 315.404 tones per hectare (BPS, 2015). The development prospects of common bean is rather good, the productivity still can be improved. The technology which is capable enough to increase the productivity of common bean is the availability of common bean varieties with high yield capacity and good quality which fits with the consumers taste. Therefore, this research aims to evaluate the morphology characteristic of common bean so that it can be a base to select the common bean seed which is good quality and has high yield. In addition, this research purposes to examine the correlation of common bean morphology with its yield.

This research was conducted in Mawar Street, Asrikaton village, Pakis subdistrict, Malang with ± 420 m altitude above sea level, rainfall ± 1800 mm / yr, with air temperature ± 23^0 C, from November 2012 till February 2013. The tools used were hoe, silver black mulch, drill, stakes, rope, ruler, stationery, cameras, analytical scale. The materials used were six accessions of common beans (*Phaseolus vulgaris* L.): INZ-1, INZ-2, LPK-1, LPK-2, LBS-2, LBS-4, and varieties of Lebat-3 for control, urea, SP -36, KCl, NPK Mutiara, and cow manure. The observational parameters are the qualitative character (growth type, steam color, flower color, color of wing flower, leaf color, shape terminal leaflet, apex terminal leaflet, pod color, shape of cross section of pod, pod curvature, texture of surface pod, shape seed, seed color) and quantitative character (day of flowering, number of flower, long of flowering, number of leaves, plant length, stem diameter, harvesting, pod length, pod width, pod weight, number of pod per plant, number of seed per pod, weight of pod per plant, seed length, seed width, number of seed per plant, 100 seed weight, dry harvesting, pod filling period). This research used a randomized block design (RBD) which consists of seven treatments with three replicates; accessions were used as a treatment so that there were seven treatments, six accessions of common bean and a variety of common bean as a control. The morphological evaluation refers to *Descriptor List for*

Phaseolus vulgaris (IBPGR, 1982) and to determine the correlation between the observed variable with the results, the analysis of covariance continued with Student t test are used as the method.

The result obtained from the evaluation of morphology characteristic showed that there were variety of morphology characteristics of six accession of common bean which had beed tested based on the *Descriptor List for Phaseolus vulgaris*, in addition if it was compared to the control varieties (LEBAT-3), the LPK-2 access were recommended to be superior seed. The characters categorized as the result consists of the number of pods per plant, number of seeds per pod, number of seeds per plant, weight pod, and weight of pod per plant. The correlation results showed that the number of pods per plant was very significant positive correlation with the number of flowers and significant positive correlation with long flowering. The number of seeds per pod was significant positive phenotypic correlation with the plant length and was very significant positive phenotypic correlation with the number of pods per plant. The number of seeds per plant was very significant positive correlation with the number of flowers and number of pods per plant, then very significant positive phenotypic correlation with harvesting, and also was significant positive phenotypic correlation with pod length. The weight of pod was significant positive correlation with the number of seeds per pod and was significant positive phenotypic correlation with day of flowering. The weight of pod per plant was very significant positive correlation with the number of flowers, long of flowering, number of pods per plant, number of seeds per plant, then was significant positive correlation with long of flowering and number of leaves, and also significant positive phenotypic correlation with pod lengh.