INTISARI

Tipe pertumbuhan kacang panjang yang merambat dan membentuk semak menyebabkan dalam budidayanya membutuhkan ruang dan sarana produksi yang lebih banyak. Pengembangan kacang panjang tipe tegak diharapkan dapat meningkatkan kepadatan populasi kacang panjang dan mengurangi sumber daya dalam budidaya kacang panjang. Perakitan kacang panjang tipe tegak dilakukan melalui seleksi pada populasi bersegregasi. Seleksi efektif dilakukan dengan mengetahui tindak gen serta keragaman genetik pada karakter tanaman. Penelitian ini bertujuan mengetahui pola segregasi serta keragaman genetik pada karakter tipe pertumbuhan dan karakter polong kacang panjang populasi F_2 sebagai dasar penentuan waktu dan kriteria seleksi. Penelitian dilakukan Juli-November 2021 di Kebun Percobaan Blok I, Pusat Inovasi Agro Teknologi (PIAT) UGM, Berbah, Sleman. Bahan penelitian meliputi, benih F_2 persilangan OR Hijau Star $\times$ KP-140 dan KP-367 $\times$ KP-150 serta benih kontrol (Kanton Tavi, P1, dan P2). Rancangan yang digunakan *Augmented RCBD.* Variabel pengamatan adalah karakter yang berkaitan dengan tipe pertumbuhan dan polong kacang panjang. Hasil penelitian menunjukkan, populasi F_2 OR Hijau Star $\times$ KP-140 untuk karakter jumlah lokul per polong diseleksi pada generasi awal, sementara berat polong, panjang polong, lebar polong, berat 100 biji, jumlah polong per tangkai, jumlah polong per tanaman, dan seluruh karakter kualitatif diseleksi pada generasi lanjut. Populasi F_2 KP-367 $\times$ KP-150 untuk karakter lebar polong, berat 100 biji, dan jumlah lokul per polong diseleksi pada generasi awal, sementara berat polong, panjang polong, jumlah polong per tanaman, dan seluruh karakter kualitatif diseleksi pada generasi lanjut. Kriteria seleksi populasi F_2 OR Hijau Star $\times$ KP-140 adalah berat polong, panjang polong, lebar polong, berat 100 biji, jumlah polong per tangkai, dan jumlah lokul per polong, sedangkan pada populasi F_2 KP-367 $\times$ KP-150 adalah berat 100 biji dan jumlah lokul per polong.

Kata kunci: augmented RCBD, pola segregasi, populasi F_2, seleksi, tindak gen

ABSTRACT

The growth type of yard long bean that propagates and forms a bush causes its cultivation to require more space and means of production. The development of the upright type of yard long beans is expected to increase the population density of yard long beans and reduce resources in long bean cultivation. Assembling the upright type of yard long beans was carried out through selection of segregated populations. Effective selection is done by knowing the action of genes and genetic diversity in plant characters. The purpose of this study was to determine the segregation pattern and genetic diversity of the growth type and character of yard long bean pods of F_2 population as the basis for determining the timing and selection criterias. The research was conducted in July-November 2021 at the Experimental Land Block I, Pusat Inovasi Agro Teknologi (PIAT) UGM, Berbah, Sleman. The research materials included F_2 seeds of OR Hijau Star $\times$ KP-140 and KP-367 $\times$ KP-150 and control seeds (Kanton Tavi, P1, and P2). The design used is Augmented RCBD. Observation variables were characters related to growth type and long bean pods characters. The results showed that the population of F_2 OR Hijau Star $\times$ KP-140 for the character of the number of locules per pod was selected in the early generation, while pod weight, pod length, pod width, weight of 100 seeds, number of pods per stalk, number of pods per plant, and whole qualitative characters are selected in the next generation. The F_2 population KP-367 $\times$ KP-150 for the characters of pod width, weight of 100 seeds, and number of locules per pod were selected in the early generation, while pod weight, pod length, number of pods per plant, and all qualitative characters were selected in the later generations. The selection criteria for the population of F_2 OR Hijau Star $\times$ KP-140 were pod weight, pod length, pod width, weight of 100 seeds, number of pods per stalk, and number of locules per pod, while the F_2 population KP-367 $\times$ KP-150 was weight 100 seeds and the number of locules per pod.

Keywords: augmented RCBD, segregation pattern, F_2 population, selection, gene action

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