RINGKASAN

Beras Basmati asal Pakistan merupakan beras berindikasi geografis dengan karakteristik beras panjang dan ramping. Pembangunan evolusi pangan dapat dilakukan melalui persilangan tanaman guna menghasilkan kultivar Basmati yang dapat tumbuh dan cocok serta berdaya hasil tinggi bila ditanam di Indonesia. Penelitian ini bertujuan untuk 1) mengetahui variabilitas genetik dan fenotipe, 2) mengetahui nilai duga heritabilitas, 3) mengetahui nilai kemajuan genetik, dan 4) mendapatkan komponen pertumbuhan atau hasil yang memiliki efektivitas seleksi tinggi. Percobaan dilakukan di sawah di Desa Karangambas, Kecamatan Padamara, Kabupaten Purbalingga pada November 2023 hingga Maret 2024 menggunakan Perancangan Acak Blok (RAK). Faktor tunggal pada penelitian ini berupa 12 genotipe padi yaitu 10 genotipe populasi F_5 dan 2 varietas tetua (Inpago Unsoed 1 dan Basmati Delta 9).

Hasil penelitian menunjukkan bahwa variabilitas genetik kriteria luas terdapat pada tinggi tanaman, jumlah anakan, umur berbunga, umur panen, panjang malai, jumlah gabah per malai, persentase gabah isi per malai, bobot gabah per rumpun, panjang beras, dan lebar beras, sedangkan kriteria sempit terdapat pada jumlah anakan produktif. Variabilitas fenotipe kriteria luas pada semua karakter. Nilai heritabilitas arti luas kriteria tinggi pada tinggi tanaman, jumlah anakan, umur berbunga, umur panen, panjang malai, jumlah gabah per malai, persentase gabah isi per malai, bobot gabah isi per rumpun, panjang beras dan lebar beras. sedangkan, pada kriteria sedang jumlah anakan produktif. Nilai kemajuan genetik kriteria tinggi terdapat pada tinggi tanaman, jumlah anakan, jumlah gabah per malai, persentase gabah isi per malai, bobot gabah per rumpun, dan panjang beras, kriteria sedang terdapat pada jumlah anakan produktif, panjang malai, dan lebar beras, serta kriteria rendah terdapat pada umur berbunga dan umur panen. Efektivitas seleksi akan efektif pada jumlah anakan, jumlah gabah per malai, persentase gabah isi per malai, dan bobot gabah per rumpun

Kata kunci: Basmati Delta 9, Inpago Unsoed 1, Parameter genetik, Populasi F_5

SUMMARY

Basmati rice from Pakistan is a rice with geographic indications with a long and slender rice character. The development of food evolution can be carried out through plant crossing to produce Basmati cultivars that can grow and are suitable and have high yields when planted in Indonesia This study aims to 1) determine the genetic and phenotypic variability, 2) determine the value of expected herritability, 3) determine the value of genetic progress, and 4) obtain growth components or yield that have high selection effectiveness. The experiment was conducted at a rice fields in Karangambas Village, Padamara District, Purbalingga Regency on from November 2023 to March 2024 using a Randomized Block Design (RBD). The single factor in this study was complete 12 rice genotypes (10 genotypes of F_5 population, also Inpago Unsoed 1 and Basmati Delta 9 as parental varieties).

The results of the study showed that genetic variability broad criteria was obtained in the plant height, number of tillers, flowering age, harvest age, panicle length, number of grains per panicle, percentage of filled grain per panicle, weight of grain per clump, rice length, and rice width. Meanwhile, in the narrow criteria, number of productive tillers. The phenotypic variability of broad criteria was obtained in all characters. The heritability value of the broad meaning of the high criteria was obtained in the plant height, number of tillers, flowering age, harvest age, panicle length, number of grains per panicle, percentage of filled grain per panicle, weight of grain per clump, rice length and rice width. Meanwhile, in the medium criteria, the number of productive tillers. The value of genetic advances is high criteria was obtained plant height, number of tillers, number of grains per panicle, percentage of filled grain per panicle, weight of grain per clump, rice length. In the medium criteria was obtained in number of productive tillers, panicle length, and rice width. Meanwhile, in the low criteria was obtained in flowering age and harvest age. The effectiveness of the selection will be effective on the number of tillers, number of grains per panicle, percentage of filled grain per panicle, weight of grain per clump.

Key words: Basmati Delta 9, F_5 lines, Genetic parameter, Inpago Unsoed 1