

RINGKASAN

Beras merupakan makanan pokok sebagian besar penduduk Indonesia, dan kebutuhan di Indonesia selalu bertambah tiap tahunnya karena laju pertumbuhan penduduk relatif tinggi. Upaya intensifikasi dilakukan dengan penggunaan varietas unggul berdaya hasil tinggi melalui persilangan menghasilkan penampilan sifat tanaman dipengaruhi faktor genetik dan lingkungan untuk melakukan seleksi. Penelitian ini bertujuan untuk: 1) mengetahui penampilan karakter padi populasi F_2 keturunan hasil persilangan Inpari 31 dengan Delta 9 dibanding dengan tetua, 2) Mengetahui pola segregasi padi populasi F_2 keturunan hasil persilangan Inpari 31 dengan Delta 9, 3) mengetahui karakter yang paling berhubungan erat dengan hasil 4) mengetahui karakter berpengaruh langsung paling tinggi dan berhubungan erat dengan hasil yang digunakan sebagai indikator seleksi.

Penelitian dilaksanakan di *screen house*, Laboratorium Pemuliaan Tanaman dan Bioteknologi, fakultas pertanian, Universitas Jenderal Soedirman, Desa Karangwangkal, Kecamatan Purwokerto Utara, Kabupaten Banyumas pada bulan Oktober 2018 sampai Februari 2019. Rancangan percobaan yang digunakan yaitu Rancangan Acak Kelompok dengan rancangan perlakuan *Augmented Design* dengan 6 blok. Setiap blok ditanami genotip berbeda, serta setiap varietas cek diulang pada setiap blok. Bahan tanam terdiri dari 150 genotip F_2 hasil persilangan Inpari 31 dan Delta 9 dan 2 varietas cek (Inpari 31 dan Delta 9). Karakter yang diamati meliputi tinggi tanaman, kandungan klorofil, kerapatan stomata, warna daun, umur tanaman berbunga, umur panen, jumlah anakan produktif, panjang malai, jumlah gabah per malai, bobot gabah per malai, bobot 100 biji dan bobot gabah per rumpun.

Hasil penelitian menunjukkan penampilan padi populasi F_2 ada yang lebih tinggi dari dua tetua, ada yang berkisar antara dua tetua dan ada yang lebih rendah dari dua tetua menunjukkan adanya segregasi. Tinggi tanaman, kandungan klorofil, kerapatan stomata, indeks luas daun, umur panen, jumlah anakan produktif, jumlah gabah per malai, bobot gabah per malai, bobot 100 biji dan bobot gabah per rumpun berdistribusi normal merupakan karakter kuantitatif yang diduga dikendalikan banyak gen. Umur tanaman berbunga dan warna daun diduga mengikuti nisbah 3:1, panjang malai diduga mengikuti nisbah 9:7. Karakter yang paling berhubungan erat dengan hasil dan berpengaruh langsung paling tinggi adalah jumlah anakan produktif, jumlah gabah per malai, bobot gabah per malai dan bobot 100 biji sehingga karakter ini digunakan sebagai pertimbangan indikator seleksi untuk daya hasil tinggi.

Kata Kunci : Padi, Populasi F_2 , Segregasi, Korelasi, Indikator seleksi.

SUMMARY

Rice is staple food for most of the Indonesian, the need in Indonesia is increase every year caused by relatively high population growth rates. Intensification efforts carried out by the use of high yielding varieties through crossing yield in the performance of plant character be affected by genetic and environmental factors for selection. This research aimed to: 1) determine the performance of rice characteristics of F_2 populations descended from Inpari 31 crosses with Delta 9 compared to parents, 2) to know the population segregation pattern of F_2 offspring from Inpari 31 crosses with Delta 9, 3) find out the most closely related with the yield 4) to know the character of the highest direct effect and closely related to the yield used as an indicator of selection.

The research was conducted at the screen house, Plant Breeding and Biotechnology Laboratory, faculty of agriculture, Jenderal Sudirman University, Karangwangkal Village, North Purwokerto District, Banyumas Regency in October 2018 until February 2019. The experimental design used was a Randomized Block Design with Augmented Design treatment design with 6 blocks. Each block is planted with different genotypes, and each variety of checks is repeated on each block. The planting material consisted of 150 F_2 genotypes from the Inpari 31 and Delta 9 crosses and 2 check varieties (Inpari 31 and Delta 9). The characters observed included plant height, chlorophyll content, stomata density, leaf color, age of flowering plants, harvest age, number of productive tillers, panicle length, number of grains per panicle, grain weight per panicle, weight of 100 seeds and grain weight per clump.

The yield showed that the performance of paddy population F_2 was higher than the two parents, some of which ranged between two parents and were lower than the two parents indicating segregation. Plant height, chlorophyll content, stomata density, leaf area index, harvest age, number of productive tillers, number of grain per panicle, grain weight per panicle, 100 seed weight and grain weight per clump that may be considered normally distributed. Age of flowering plants and leaf color that may be considered follows a 3: 1 ratio, panicle length that may be considered to follow the ratio 9: 7. The characters are most closely related to yield and the highest direct effect are the number of productive tillers, number of grain per panicle, weight of grain per panicle and the 100 seed weight so that this character may be considered indicator of selection for high yielding variety.

Keywords: Rice, F_2 population, Segregation, Correlation, Selection indicator.