

RINGKASAN

Pengembangan varietas unggul baru merupakan salah satu alternatif untuk meningkatkan produksi padi. Varietas unggul baru tersebut dapat diperoleh melalui kegiatan pemuliaan tanaman yaitu persilangan antara tanaman padi varietas Inpago Unsoed 1 dan Delta 9. Penelitian ini bertujuan untuk: 1) mengetahui pola segregasi tanaman padi populasi F_2 keturunan hasil persilangan Inpago Unsoed 1 dan Delta 9, 2) mengetahui karakter yang paling berhubungan erat dengan hasil tanaman padi populasi F_2 keturunan hasil persilangan Inpago Unsoed 1 dan Delta 9, dan 3) mengetahui karakter yang mempunyai nilai pengaruh langsung tinggi terhadap hasil tanaman padi populasi F_2 keturunan hasil persilangan Inpago Unsoed 1 dan Delta 9.

Penelitian eksperimen ini dilaksanakan di *Screen House* Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto pada bulan Oktober 2018 sampai Februari 2019. Rancangan percobaan yang digunakan adalah Rancangan Acak Kelompok (RAK). Rancangan perlakuan menggunakan *Augmented design*. Faktor yang digunakan yaitu genotip F_2 hasil persilangan Inpago Unsoed 1 dan Delta 9. Karakter yang diamati yaitu tinggi tanaman, umur berbunga, jumlah anakan produktif, umur panen, panjang malai, jumlah gabah per malai, bobot gabah per malai, bobot gabah per rumpun, bobot 100 biji, kandungan klorofil, kerapatan stomata, indeks luas daun dan warna daun. Data yang diperoleh dianalisis dengan uji Lillifors dan analisis jalur.

Hasil penelitian menunjukkan bahwa pola segregasi tinggi tanaman, umur berbunga, jumlah anakan produktif, panjang malai, jumlah gabah per malai, bobot gabah per malai, bobot gabah per rumpun, bobot 100 biji, kandungan klorofil, kerapatan stomata, dan indeks luas daun berdistribusi normal yang berarti karakter tersebut dikendalikan oleh banyak gen yang diduga merupakan karakter kuantitatif. Umur panen mengikuti nisbah hukum Mendel 9 : 7 yang berarti karakter tersebut dikendalikan oleh gen-gen epistasis resesif duplikat yang diduga merupakan karakter kualitatif. Warna daun mengikuti nisbah hukum Mendel 15 : 1 yang berarti karakter tersebut dikendalikan oleh gen-gen epistasis dominan duplikat yang diduga merupakan karakter kualitatif. Karakter yang paling berhubungan erat dengan hasil tanaman padi yaitu jumlah anakan produktif, bobot gabah per malai dan jumlah gabah per malai. Karakter yang mempunyai nilai pengaruh langsung tinggi terhadap hasil tanaman padi yaitu jumlah anakan produktif, bobot gabah per malai dan bobot 100 biji. Jadi, karakter yang dapat dipertimbangkan sebagai indikator seleksi daya hasil tinggi tanaman padi populasi F_2 hasil persilangan Inpago Unsoed 1 dan Delta 9 yaitu jumlah anakan produktif, bobot gabah per malai, bobot 100 biji, dan jumlah gabah per malai.

Kata kunci: pola segregasi, analisis jalur, populasi F_2 , Inpago Unsoed 1, Delta 9

SUMMARY

The development of new superior varieties is one alternative to increase rice production. The new superior varieties can be obtained through plant breeding activities, namely crossing between Inpago Unsoed 1 and Delta 9 varieties of rice. This study aims to: 1) determine the rice segregation pattern of population F₂ descendants from Inpago Unsoed 1 and Delta 9, 2) knowing the characters most closely related to the yield of rice plants population F₂ off spring from the crossing of Inpago Unsoed 1 and Delta 9, and 3) knowing the character that have a high direct influence on the yield of rice plants population F₂ off spring from Inpago Unsoed 1 and Delta 9.

Experimental research this was carried out at Screen House Faculty of Agriculture, Jenderal Sudirman University, Purwokerto in October 2018 to February 2019. The experimental design used was a Randomized Block Design (RBD). Design treatment using Augmented design. The factors used were F₂ genotype from Inpago Unsoed 1 and Delta 9. The observed characters were plant height, flowering age, number of productive tillers, harvest age, panicle length, number of grain per panicle, grain weight per panicle, grain weight per clump, weight of 100 seeds, chlorophyll content, stomata density, leaf area index and leaf color. The data obtained were analyzed by Lilifors test and path analysis.

The results showed that the segregation pattern of plant height, flowering age, number of productive tillers, panicle length, number of grains per panicle, grain weight per panicle, grain weight per clump, weight of 100 seeds, chlorophyll content, stomata density, and leaf area index were normally distributed which means the character is controlled by many genes that are thought to be quantitative characters. Harvest age follows Mendel 9: 7 legal ratio, which means that the character is controlled by duplicate recessive epistasis genes that are thought to be qualitative characters. Leaf color follows the Mendel 15: 1 legal ratio, which means that the character is controlled by duplicate dominant epistasis genes which are thought to be qualitative characters. The characters that are most closely related to the yield of rice are the number of productive tillers, grain weight per panicle and number of grains per panicle. Characters that have a high direct effect on rice yields are the number of productive tillers, grain weight per panicle and weight of 100 seeds. So, the character that can be considered as an indicator of the yield of rice plant population F₂ from the results of Inpago Unsoed 1 and Delta 9 crosses is the number of productive tillers, grain weight per panicle, weigh of 100 seeds, and number of grain per panicle.

Keywords: segregation pattern, path analysis, population F₂, Inpago Unsoed 1, Delta 9