

RINGKASAN

Padi (*Oryza sativa* L.) merupakan salah satu bahan pangan pokok bagi masyarakat Indonesia. Pemulia tanaman diharapkan dapat memenuhi permintaan untuk merakit padi yang dibutuhkan masyarakat. Salah satu jenis padi yang dibutuhkan adalah padi dengan indeks glikemik (IG) rendah dan memiliki kadar amilosa yang rendah. Perakitan varietas ini dilakukan dengan menyilangkan Cisokan dengan Ciherang. Tahap F₄ dilakukan seleksi untuk memperoleh individu dengan karakter agronomis yang baik dan berdaya hasil tinggi adalah dengan seleksi karakter komponen hasil dan hasil. Penelitian ini bertujuan untuk: 1) mengetahui keragaman karakter komponen hasil dan hasil, 2) mengkaji pengaruh langsung dan tidak langsung antara beberapa karakter komponen hasil terhadap hasil melalui analisis jalur, 3) menyeleksi tanaman padi populasi F₄ hasil persilangan Cisokan dan Ciherang berdasarkan seleksi indeks.

Penelitian ini dilaksanakan di lahan sawah di Desa Pasir Kulon, Kecamatan Karanglewas, Kabupaten Banyumas, Laboratorium Pemuliaan Tanaman dan Bioteknologi, dan Laboratorium Agronomi dan Hortikultura, Fakultas Pertanian, Universitas Jenderal Soedirman pada bulan November 2016 sampai Juni 2017. Rancangan percobaan yang digunakan adalah Rancangan Acak Lengkap Berblok (RBD) dengan rancangan perlakuan *Augmented Design* yang terdiri dari 3 blok. Variabel yang diamati yaitu kerapatan stomata kandungan klorofil saat pengisian bulir, kandungan klorofil sebelum panen, tinggi tanaman, jumlah anakan total, jumlah anakan produktif, waktu pengisian bulir, umur panen, panjang malai, jumlah gabah per malai, persentase gabah isi per malai, bobot 1000 biji, dan bobot gabah per rumpun. Hasil pengamatan dianalisis menggunakan uji F, uji lanjut *Least Significance Increase* (LSI), analisis jalur, dan seleksi indeks.

Hasil penelitian menunjukkan bahwa karakter komponen hasil dan hasil padi populasi F₄ hasil persilangan Cisokan dan Ciherang beragam. Karakter komponen hasil yang memiliki pengaruh langsung yang nyata terhadap variabel hasil (bobot gabah per rumpun) adalah kandungan klorofil sebelum panen, jumlah anakan produktif, waktu pengisian bulir, panjang malai, jumlah gabah per malai, dan persentase gabah isi per malai. Tanaman padi populasi F₄ hasil persilangan Cisokan dan Ciherang yang dapat dilanjutkan untuk seleksi F₅ adalah CSXCH-5-4-37, CSXCH-5-4-34, CSXCH-5-7-44, CSXCH-5-1-87, CSXCH-5-4-31, CSXCH-5-1-1, CSXCH-5-7-32, CSXCH-5-6-22, CSXCH-5-6-34, CSXCH-5-4-40, CSXCH-5-5-29, CSXCH-5-5-36, CSXCH-5-1-44, CSXCH-5-5-32, CSXCH-5-5-53, CSXCH-5-1-17, CSXCH-5-7-31, CSXCH-5-6-48, CSXCH-5-6-56, dan CSXCH-5-7-12.

SUMMARY

Rice (Oryza sativa L.) is one of the staple food for Indonesia's people. Plant breeders are expected to fulfilled demand to assemble rice that people needs. One type of rice needed was rice with low glycemic index and low amylose content. Crossing Cisokan with Ciherang was a way to assembled that kind of variety. On F₄ phase, crop selected to got individuals with good agronomic character and high-yield based on its yield component and yield. This research aims to: 1) study the diversity of yield component and yield, 2) to examine the direct and indirect effects between some of yield component toward yield by path analysis; 3) to select the rice crop from F₄ population of Cisokan and Ciherang crossbreed based on index selection.

This research was conducted in paddy field on Pasir Kulon Village, Karanglewas Subdistrict, Banyumas Regency, Laboratory of Plant Breeding and Biotechnology, and Laboratory of Agronomy dan Horticulture, Faculty of Agriculture, Jenderal Soedirman University from November 2016 to June 2017. The experimental design used was a randomized complete block design (RBD) with an Augmented Design treatment design consisting of 3 blocks. The materials used are 417 genotype F₄ of Cisokan and Ciherang crosses, and 3 check varieties (Cisokan, Ciherang, and Inpago Unsoed 1). The variables research were stomatal density, chlorophyll content during grain filling, chlorophyll content before harvest, plant height, total tillers, number of productive tillers, grain filling time, harvest age, panicle length, grain per panicle, percentage of grain per panicle, 1000 seeds weight and grain weight per clump. Data were analyzed by F test, Least Significance Increase (LSI) test, path analysis, and index selection.

The results showed that yield component and yield of F₄ population from Cisokan and Ciherang crosses were varied. Yield components that have a significant direct effect on yield variables (grain weight per clump) are chlorophyll content before harvest, number of productive tillers, grain filling time, panicle length, number of grains per panicle, and percentage of grain per panicle. Rice crops of F₄ populations from Cisokan and Ciherang crosses that can be continued for F₅ selection were CSXCH-5-4-37, CSXCH-5-4-34, CSXCH-5-7-44, CSXCH-5-1-87, CSXCH- 5-4-31, CSXCH-5-1-1, CSXCH-5-7-32, CSXCH-5-6-22, CSXCH-5-6-34, CSXCH-5-4-40, CSXCH-5- 5-29, CSXCH-5-1-44, CSXCH-5-5-32, CSXCH-5-5-53, CSXCH-5-1-17, CSXCH-5-7- 31, CSXCH-5-6-48, CSXCH-5-6-56, and CSXCH-5-7-12.