

RINGKASAN

Beras adalah sumber karbohidrat yang mengandung gizi dan menyediakan protein dan mineral dalam proporsi yang baik. Produksi beras pada tahun 2020 mengalami kenaikan yaitu sekitar 31,33 juta ton. Bertambahnya jumlah penduduk setiap tahunnya membuat produksi padi harus selalu ditingkatkan agar stok penyimpanan beras dapat selalu tersedia sehingga kebutuhan beras masyarakat Indonesia dapat tercukupi pada berbagai kondisi. Beras mengandung banyak gizi yang dibutuhkan oleh tubuh, salah satunya protein. Beras berprotein tinggi dapat menjadi dasar untuk mengembangkan produk makanan padat nutrisi sehingga kebutuhan gizi pada tubuh dapat terpenuhi. Belum banyaknya penerapan budidaya padi protein tinggi dan minimnya studi mengenai respon genotip padi protein tinggi terhadap pupuk nitrogen, maka untuk mengatasi permasalahan tersebut dilakukan penelitian tentang respon genotip padi protein tinggi terhadap pemberian pupuk nitrogen. Penelitian ini bertujuan untuk: (1) Mengetahui respon genotip padi protein tinggi terhadap pemberian pupuk N. (2) Menentukan dosis optimal pemberian pupuk N pada beberapa genotip padi protein tinggi.

Penelitian dilaksanakan di screen house di Fakultas Pertanian Universitas Jenderal Soedirman, Purwokerto Utara, Kabupaten Banyumas. Lokasi penelitian berada pada ketinggian ± 110 meter di atas permukaan laut. Penelitian dilaksanakan selama 4 bulan yaitu pada bulan Februari sampai bulan Mei 2021 dengan menggunakan *polybag*. Rancangan percobaan yang digunakan yaitu Rancangan Acak Kelompok Lengkap (RAKL) dengan dua faktor yaitu pupuk nitrogen 0 kg/ha Nitrogen, 46 kg/ha Nitrogen, 92 kg/ha Nitrogen, 138 kg/ha Nitrogen dan Genotip yang digunakan yaitu Inpago Unsoed Protani, Inpari Unsoed P20Tanggung, TAD-P-CH//MR-GN95, TAD-P-G39//CH-MKD, dan Inpago Unsoed 1. Data yang diperoleh dianalisis dengan analisis varian pada taraf kesalahan 5%. Hasil analisis varian yang menunjukkan pengaruh nyata diuji lanjut menggunakan uji DMRT (*Duncan's Multiple Range Test*) pada taraf nyata 5%. Variabel yang diamati yaitu tinggi tanaman padi umur 30, 45 dan 60 HST, jumlah anakan total per rumpun pada umur 30, 45, dan 60 HST, kandungan klorofil, jumlah anakan produktif, bobot 1000 butir, bobot gabah kering panen, bobot gabah kering simpan, persentase gabah isi, dan jumlah gabah total per malai.

Hasil penelitian menunjukkan bahwa (1) Beberapa genotip padi protein tinggi yang telah dicoba memberikan respon yang berbeda terhadap peningkatan hasil bobot tanaman. Respon genotip padi protein tinggi yang terbaik di temukan pada genotip Inpago Unsoed protani. (2) Dosis optimal pemupukan N untuk pertumbuhan dan produksi beberapa genotip padi protein tinggi yaitu berkisar antara 72,79 sampai dengan 104,22 kg/ha.

SUMMARY

Rice is a rich source of carbohydrates and provides protein and minerals in good proportions. Rice production in 2020 has increased by around 31.33 million tons. The increasing number of people every year makes rice production must always be increased so that rice storage stocks can always be available so that the rice needs of the Indonesian people can be fulfilled in various conditions. Rice contains many nutrients needed by the body, one of which is protein. High protein rice can be the basis for developing nutrient-dense food products so that the nutritional needs of the body can be met. There are not many applications of high protein rice cultivation and the lack of studies on the response of high protein rice genotypes to nitrogen fertilizers, so to overcome these problems, research is carried out on the response of high protein rice genotypes to nitrogen fertilizers. This study aims to: (1) determine the response of high protein rice genotypes to the application of N fertilizer. (2) Determine the optimal dose of N fertilizer in several genotypes of high protein rice.

The research was conducted in a screen house at the Faculty of Agriculture, Jenderal Sudirman University, North Purwokerto, Banyumas Regency. The research location is at an altitude of \pm 110 meters above sea level. The research was carried out for 4 months, from February to May 2021 using polybags. The experimental design used was Completely Randomized Block Design with two factors, namely nitrogen fertilizer 0 kg/ha Nitrogen, 46 kg/ha Nitrogen, 92 kg/ha Nitrogen, 138 kg/ha Nitrogen and the genotype used was Inpago Unsoed Protani, Inpari Unsoed P20Tanggung, TAD-P-CH//MR-GN95, TAD-P-G39//CH-MKD, and Inpago Unsoed 1. The data obtained were analyzed by analysis of variance at an error rate of 5% . The results of the analysis of variance that showed a significant effect were further tested using the DMRT (Duncan's Multiple Range Test) test at a 5% significance level. The variables observed were rice plant height at 30, 45 and 60 DAP, total tillers per clump at 30, 45, and 60 DAP, chlorophyll content, number of productive tillers, 1000 grain weight, weight of harvested dry grain, weight of stored dry grain, percentage of filled grain, and total grain per panicle.

The results showed that: (1) Several genotypes of high protein rice that have been tried gave different responses to the increase in plant weight yield. The best high protein genotype response was found in the Inpago Unsoed protani genotype. (2) The optimal dose of N fertilization for the growth and production of several genotypes of high protein rice ranged from 72,79 to 104,22 kg/ha.