

## RINGKASAN

Penelitian ini bertujuan untuk 1) mengetahui pengaruh pemberian *biofertilizer* terhadap fisiologi, serapan silika dan hasil padi gogo, 2) mengetahui pengaruh pemberian arang sekam dengan berbagai ukuran partikel terhadap fisiologi, serapan silika dan hasil padi gogo, dan 3) mengetahui interaksi *biofertilizer* dan arang sekam terhadap fisiologi, serapan silika dan hasil padi gogo.

Penelitian dilaksanakan pada bulan Juli hingga November 2018 di Desa Kalibagor, Kecamatan Kalibagor, Kabupaten Banyumas. Rancangan yang digunakan adalah rancangan acak kelompok dengan dua faktor dan tiga kali ulangan. Faktor pertama adalah *biofertilizer* yang terdiri atas aplikasi *biofertilizer* dan tanpa aplikasi *biofertilizer*. Faktor kedua adalah ukuran arang sekam yang terdiri atas ukuran partikel 2, 1.5, 1, 0.5 mm dan tanpa aplikasi arang sekam. Variabel yang diamati yaitu panjang akar total, serapan silika, luas daun spesifik, klorofil a, klorofil b, kerapatan stomata, tinggi tanaman, bobot kering, laju asimilisasi bersih, laju pertumbuhan relatif, jumlah anakan total, panjang malai, jumlah anakan produktif, jumlah gabah isi rumpun<sup>-1</sup>, bobot gabah rumpun<sup>-1</sup>, bobot 1000 biji.

Hasil penelitian menunjukkan bahwa *biofertilizer* meningkatkan serapan silika, jumlah anakan produktif, panjang malai, jumlah gabah isi rumpun<sup>-1</sup>. Pemberian arang sekam dengan berbagai ukuran partikel belum mampu memperbaiki fisiologi, serapan silika dan hasil padi gogo. Pengaruh *biofertilizer* terhadap serapan silika dan hasil padi gogo tidak bergantung kepada arang sekam. Jumlah gabah isi rumpun<sup>-1</sup>, jumlah anakan produktif, bobot kering tanaman dan jumlah anakan total adalah variabel yang paling berhubungan erat dengan hasil (bobot gabah rumpun<sup>-1</sup>).

**Kata kunci:** padi, *biofertilizer*, arang sekam, ukuran partikel arang sekam.

## **SUMMARY**

*The aims of the research were 1) to study the effect of biofertilizer to physiology, silica absorption and yield of upland rice, 2) to study the effect of husk charcoal with various sizes to physiology, silica absorption and yield of upland rice, and 3) to study the interaction of biofertilizer and husk charcoal to physiology, silica absorption and yield of upland rice.*

*The research was conducted from July until November 2018 at the Kalibagor Village, Kalibagor Subdistrict, Banyumas Regency. The research was arranged by randomized complete block design (RCBD) with two factors and repeated in three times. The first factor was the biofertilizer application and without biofertilizer application. The second factor was the size of the husk charcoal i.e. 2, 1.5, 1, 0.5 mm and control without rice husk charcoal application. The observed variables were root length, total absorption of silica, leaf area specific, chlorophyll a content, chlorophyll b content, stomata density, plant height, dry weight, net assimilation rate, plant growth rate, the number of tiller, panicle length, the number of productive tiller, the number of filled grain per clump, grains weight per clump, 1000 grains weight.*

*The results showed that biofertilizer increase the silica absorption, the number of productive tiller, panicle length, the number of filled grain per clump. Application of the size of the husk charcoal does not affect to the physiology, silica absorption and yield of upland rice. The effect of biofertilizer to the silica absorption and yield of upland rice does not depended by husk charcoal. The number of filled grains per clump, the number of productive tiller, dry weight and the number of tiller were most related variables with yield (graint weight per clump).*

*Keyword: rice, biofertilizer, husk charcoal, size of husk charcoal.*