

Aplikasi Abu Sekam pada Padi Gogo (*Oryza sativa* L.) terhadap Kandungan Silikat dan Prolin Daun serta Amilosa dan Protein Biji

Application of Burned-Rice Husk on Upland Rice (*Oryza sativa* L.): the Contents of Leaf Silicon and Proline as well as Seed Amylose and Protein

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Abstract

Objective of the study was to investigate the effects of burned-rice husk applied on proline and silicon leaf contents and seed protein and amylose contents of upland rice and correlation among their components under 80 percent of field capacity in pot. The pot study was conducted at screen house Faculty of Agriculture of Jenderal Soedirman University. Randomized complete block design was applied with the factors of variety (Situ patenggang, Limboto, Towuti, Batutegi dan Aek sibundong) and burned-rice husk (0, 2, 4, 6 t/ha), and three times replication. The result showed that application of burned-rice husk dosage 2–6 t/ha resulted improving leaf silicon about 18.49–29.43% but decreasing seed amylose content about 4.19–6.92% at five upland rice varieties. The application of burned-rice husk dosage 2–6 t/ha improved leaf proline about 27.56–70.6% and seed protein content about 2.35–16.71%. Of the whole variety, Batu tegi and Situ patenggang gained the highest proline and seed protein contents of 18.58 % and 9.55%, respectively. There were some correlations among physiological characters of leaf silicon – proline (0.62) and seed protein – amylose (-0.78).

Key words: Upland rice, leaf silicon, leaf proline, seed protein, seed amylose

Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui pengaruh aplikasi abu sekam terhadap kandungan prolina dan silikat daun serta kualitas hasil yaitu protein dan amilosa biji padi gogo dan hubungan korelasi antar keempat komponen tersebut pada kondisi pertanaman 80 persen kapasitas lapang pada skala pot. Penelitian dilakukan di polibag dalam *screen house* Fakultas Pertanian Unsoed dengan menggunakan rancangan acak kelompok pola faktorial dengan faktor varietas (Situ patenggang, Limboto, Towuti, Batutegi dan Aek sibundong) dan faktor abu sekam (0, 2, 4, 6 t/ha), diulang tiga kali. Hasil penelitian menunjukkan bahwa pemberian abu sekam dosis 2–6 t/ha mampu meningkatkan kandungan silikat daun antara 18,49–29,43% dan menurunkan kandungan amilosa biji pada lima varietas sekitar 4,19–6,92%. Pemberian abu sekam dosis 2–6 t/ha mampu meningkatkan kandungan prolina daun antara 27,56–70,63% dan protein biji antara 2,35–16,71%. Antarvarietas menunjukkan bahwa kandungan prolina tertinggi dihasilkan oleh varietas Batu tegi 18,58 persen dan protein biji pada varietas Situ patenggang 9,55%. Terdapat korelasi antar karakter fisiologis yaitu antara silikat-prolina (0,62) dan kandungan protein-amilosa biji (-0,78).

Kata kunci: Padi gogo, silikat daun, prolina daun, protein biji, amilosa biji