

RINGKASAN

Padi merupakan sumber karbohidrat utama bagi sebagian besar penduduk dunia. Salah satu kendala dalam budidaya tanaman padi adalah penyakit hawar pelepah daun yang disebabkan *Rhizoctonia solani*. Kehilangan hasil padi akibat gangguan penyakit hawar pelepah di Indonesia sebesar 20-35%. Teknik pengendalian penyakit hawar pelepah padi dapat dilakukan melalui induksi ketahanan dengan menggunakan Si. Unsur Si diketahui dapat meningkatkan ketahanan tanaman terhadap serangan hama dan infeksi patogen. Salah satu sumber unsur Si adalah abu sekam dengan kandungan 40,62 % Si. Penelitian ini bertujuan untuk mengetahui tingkat ketahanan tiga varietas padi terhadap *R. solani* dan pertumbuhan tanaman padi dengan pemberian abu sekam dalam media tanam.

Penelitian dilaksanakan di Laboratorium Perlindungan Tanaman, Laboratorium Agronomi dan Hortikultura, dan Screen House Fakultas Pertanian Universitas Jenderal Soedirman, Purwokerto dari bulan Juni - Desember 2020. Percobaan di dalam rumah kaca dilakukan dengan Rancangan Acak Kelompok Faktorial dengan 2 faktor yaitu abu sekam dan varietas. Variabel yang diamati yaitu masa inkubasi, intensitas penyakit, *Area under disease progress curve* (AUDPC), laju infeksi, kandungan saponin, kandungan tanin, kandungan fenol total, tebal epidermis, kerapatan stomata, tinggi tanaman, jumlah daun, jumlah anakan, jumlah anakan produktif, panjang malai, bobot malai, bobot 100 biji, bobot basah tanaman dan bobot kering tanaman.

Hasil penelitian menunjukkan pemberian Si oleh abu sekam padi dosis 11,2 g/polybag dapat meningkatkan ketahanan tanaman padi terhadap patogen *R. solani*, yaitu mampu menekan masa inkubasi hingga 3,9 hari, intensitas penyakit yang tergolong sedang yaitu 31,44%, menurunkan laju infeksi dan nilai AUDPC. Abu sekam padi mampu meningkatkan pertumbuhan tanaman seperti jumlah anakan, bobot basah dan kering tanaman serta mampu meningkatkan kandungan biokimiawi tanaman dan ketebalan epidermis daun padi. Namun, perlakuan abu sekam dosis 5,6 dan 11,2 g/polybag belum mampu meningkatkan hasil tiga varietas padi gogo.

SUMMARY

*Rice is the main source of carbohydrates for most of the world's population. One of the obstacles in rice cultivation is sheath blight disease by *Rhizoctonia solani*. Loss of rice yields due to midrib blight in Indonesia is 20-35%. Techniques for controlling sheath blight disease can be done through by inducing the resistance using silica. Elemental Si is known to increase plant resistance against pests and pathogenic infections. One source of the element Si is husk ash with a content of 40.62% Si. This study was aimed to determine the level of resistance of three rice varieties to *R. solani* and the growth of rice plants by giving husk ash in the growing medium.*

The research was carried out at the Plant Protection Laboratory, Agronomy and Horticulture Laboratory, and Screen House of the Faculty of Agriculture, Jenderal Soedirman University, Purwokerto from June to December 2020. The experiment in the greenhouse was carried out with a randomized factorial block design with 2 factors, namely husk ash and varieties. The variables observed were incubation period, disease intensity, area under disease progress curve (AUDPC), infection rate, saponin content, tannin content, total phenol content, epidermal thickness, stomata density, plant height, number of leaves, number of tillers, number of productive tillers, panicle length, panicle weight, 100 seeds weight, plant wet weight and plant dry weight.

*The results showed that giving Si by rice husk ash at a dose of 11.2 g /polybag can increase the resistance of rice plants to the pathogen *R. solani*, which was able to suppress the incubation period of up to 3.9 days, the disease intensity was classified as moderate, namely 31.44%, reduced infection rate and AUDPC value. Rice husk ash can increase plant growth such as the number of tillers, wet and dry weight of plants and can increase the biochemical content of plants and the thickness of the epidermis of rice leaves. However, treatment of husk ash at a dose of 5,6 and 11,2 g/polybag was not able to increase three varieties of gogo rice.*