

## RINGKASAN

Padi merupakan komoditas tanaman pangan yang mempunyai peran penting dalam perenokomian Indonesia. Salah satu kendala yang dapat memengaruhi produksi padi adalah penyakit hawar pelepah yang disebabkan *Rhizoctonia solani*. Salah satu alternatif pengendalian penyakit hawar pelepah yaitu dengan pengimbasan ketahanan tanaman padi terhadap penyakit hawar pelepah menggunakan glutamat. Glutamat merupakan senyawa organik yang dapat menginduksi ketahanan penyakit secara sistemik pada padi. Penelitian ini bertujuan untuk mengkaji pengaruh pemberian glutamat terhadap ketahanan dan pertumbuhan tanaman padi yang terinfeksi patogen *R.solani*.

Penelitian dilaksanakan di Laboratorium Perlindungan Tanaman dan *Screen house* Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto dari bulan Juni-Agustus 2020. Rancangan yang digunakan pada penelitian ini adalah Rancangan Acak Kelompok dengan 5 perlakuan dan 6 ulangan, yaitu kontrol, 2,5 mM glutamat, 5 mM glutamat , 7,5 mM glutamat & 10 mM glutamat . Variabel yang diamati yaitu masa inkubasi, intensitas penyakit, laju infeksi, AUDPC, tinggi tanaman, jumlah daun, jumlah anakan, panjang akar, bobot segar akar, kerapatan stomata, tebal epidermis, kandungan saponin, kandungan tanin secara kualitatif dan kandungan total fenol.

Hasil penelitian menunjukkan penambahan glutamat tidak mampu meningkatkan pertumbuhan tanaman padi, namun penambahan glutamat mampu meningkatkan ketahanan tanaman padi terhadap jamur *R.solani*. Glutamat mampu menekan perkembangan penyakit hawar pelepah pada padi, dengan menunda masa inkubasi, menurunkan intensitas penyakit, menurunkan laju infeksi, meningkatkan AUDPC dan mampu meningkatkan kandungan fenol pada tanaman.

## ***SUMMARY***

Rice plant is a food crop commodity that plays an important role in Indonesia's economic. One of the obstacles that can affect of rice production is sheath blight disease, caused by *R.solani*. One alternative to control the sheath blight disease is by inducing the resistance of rice plants againts blight using an glutamate. Glutamate is an organic compound which able to induce the systemic disease resistance in rice. This study aims to the effect of glutamate to the rice plants resistance infected by *R.solani* and the growth of rice crop.

The research was conducted at the Plant Protection Laboratory and Screen house of Faculty Agriculture, Jenderal Soedirman University, Purwokerto from June to August 2020. The design used in this research was randomized block design with 5 treatments and 6 replications, namely control, glutamate 2.5 mM, 5 mM, 7.5 mM and 10 mM. The variables observed were incubation period, disease intensity, infection rate, AUDPC, plant height, number of leaves, number of tillers, root length, fresh root weight, stomata density, epidermal thickness, saponin and tannin content qualitatively and phenol total.

The results showed that the glutamate application were not able to increase rice plant growth. However the glutamate application were able to increase the resistance of rice plants againts *R.solani*. Glutamate is able to suppress the development of sheath blight disease, by delay the incubation period, reduce the disease intensity, reduce the rate of infection, increase AUDPC and increase the phenol content in plants.