Intisari

Masalah utama dalam budidaya tanaman jagung yaitu adanya penyakit bulai yang disebabkan oleh *Peronosclerospora maydis***.** Penelitian ini bertujuan untuk mengetahui efektivitas asam salisilat, asam benzoat, natrium benzoat, aspirin, sakarin, dan tiamin dalam menginduksi ketahanan tanaman jagung terhadap penyakit bulai serta mengetahui pengaruh bahan-bahan kimia terhadap diameter lubang stomata dan kerapatan stomata. Uji perendaman benih untuk menentukan kepekatan dan waktu perendaman yang efektif dilakukan dengan kepekatan1 g/l, 2 g/l, 5 g/l, dan 10 g/l serta waktu 30 menit, 60 menit, dan 120 menit. Kepekatan dan waktu perendaman yang paling baik yaitu 2 g/l dalam 60 menit. Percobaan *in planta* dilakukan dengan Rancangan Acak Lengkap dengan 5 ulangan setiap perlakuan. Inokulasi dilakukan pada tanaman berumur 2 mst dengan metode penyisipan daun sakit. Pengamatan terhadap insidensi dan intensitas penyakit bulai dilakukan setiap minggu selama 4 minggu. Pengamatan diameter lubang stomata dan kerapatan stomata dilakukan pada saat tanaman berumur 20 hst. Hasil penelitian menunjukkan penggunaan bahan-bahan kimia tersebut mampu menekan intensitas dan insidensi penyakit bulai. Bahan kimia yang paling efektif dalam menginduksi ketahanan terhadap penyakit bulai yaitu asam salisilat. Ukuran lubang stomata dan kerapatan stomata tidak dipengaruhi oleh perlakuan bahan-bahan kimia tersebut.

Kata kunci: induksi ketahanan, penyakit bulai jagung, bahan-bahan kimia non-pestisida
stomata

Abstract

The main problem in the cultivation of maize is downy mildew caused by *Peronosclerosporamaydis*. This study aims to determine the effectiveness of salicylic acid, benzoic acid, sodium benzoate, aspirin, saccharin, and thiamine in inducing resistance to maize towards downy mildew and to know the effect of chemicals on pore diameter and stomatal density. Seed immersion test was performed to determine the effective concentration 1 g/l, 2 g/l, 5 g/l, and 10 g/l and immersion time 30 minutes, 60 minutes, and 120 minutes. The best concentration and immersion time are 2g/l in 60 minutes. *In planta* experiment was performed in a Complete Randomized Design with 5 replications per treatment. Inoculation was done at two weeks after planting with insertion diseased leaf method. Observation of disease incidence and intensity of downy mildew was done every week for four weeks. Observations of pore diameter and stomatal density were done at 20 days after planting. The results showed that the use of these chemicals is able to suppress the intensity and incidence of downy mildew disease. Chemical that effective in inducing resistance against downy mildew is salicylic acid. The pore diameter and stomatal density were not affected by those chemicals.

Keywords: induced resistance, maize downy mildew, non-pesticides chemicals, stomata