

RINGKASAN

Gulma merupakan salah satu kendala dalam budidaya pala. Pengendalian gulma menggunakan herbisida kimia menimbulkan dampak negatif terhadap lingkungan. Pengendalian hayati dengan memanfaatkan patogen gulma merupakan alternatif pengendalian yang ramah lingkungan. Tujuan dari penelitian ini yaitu mengetahui: 1) jenis patogen penyakit gulma berdaun sempit pada pertanaman pala, 2) virulensi patogen terhadap gulma berdaun sempit pada pertanaman pala, dan 3) terhadap tanaman budidaya pala, jagung, dan serai.

Penelitian ini dilakukan Laboratorium dan Screen House Fakultas Pertanian Universitas Jenderal Soedirman, dilaksanakan bulan November 2019 hingga Agustus 2020. Rancangan yang digunakan adalah rancangan petak terbagi (split plot). Petak utama terdiri atas jamur *Fusarium solani*, *Curvularia* sp., dan *Torula heteromorpha* serta anak petak terdiri atas gulma *Cyperus rotundus*, *Cyperus brevitolius*, *Eleusine indica*, *Axonopus compressus*, dan *Cyperus iria*; serta tanaman budidaya tanaman pala, jagung, dan serai. Masing-masing kombinasi di ulang 3 kali. Variabel yang diamati adalah masa inkubasi, intensitas penyakit, bobot basah, dan bobot kering.

Hasil penelitian menunjukkan bahwa ditemukan tiga jenis jamur patogen gulma daun sempit, yaitu *Fusarium solani*, *Curvularia* sp., dan *Torula heteromorpha*. Masa inkubasi tercepat adalah jamur *T. heteromorpha* yang menyerang gulma selama 2 hari. Jamur *T. heteromorpha* virulen terhadap 5 jenis gulma *A. compressus* yang di ujikan, yang di tunjukan oleh intensitas serangan *C. rotundus* sebesar 2,12%, *C. brevitolia* sebesar 1,94%, *E. indica* sebesar 2,27%, *A. compressus* sebesar 2,27%, dan *C. iria* sebesar 2,04%, serta enurunan bobot basah dan bobot kering gulma sebesar 50% dibanding dengan kontrol. Jamur *F. solani* virulen terhadap tanaman jagung yang ditunjukkan oleh masa inkubasi tercepat selama 4 hari setelah inokulasi, intensitas serangan 1,46%, dan tidak ada serangan patogen terhadap tanaman serai dan tanaman pala. Penurunan bobot basah dan bobot kering pada tanaman budidaya yang disebabkan oleh jamur patogen sebesar 15% dibanding dengan kontrol.

SUMMARY

Weeds are one of nutmeg cultivation obstacles. Weed control using chemical herbicides has a negative impact on the environment. Biological control by the use of weed pathogenic fungi is an environmentally friendly alternative control. The study aimed to determine: (1) type of narrow leaf weeds pathogenic fungi at nutmeg plantation, (2) virulence of the pathogenic fungi on narrow leaf weeds, and (3) on nutmeg, corn, and lemon-grass crops.

This research was conducted at the Laboratory of Plant Protection and the screen house, Faculty of Agriculture, Jenderal Soedirman University, from November 2019 to August 2020. Split plot design was used with main plot consisted of the pathogenic fungi and subplots consisted of *Cyperus rotundus*, *Cyperus brevitoli*, *Eleusine indica*, *Axonopus compressus*, and *Cyperus iria*, and consisted of nutmeg, corn, and lemon-grass crops; each combination was repeated 3 times. Observed variables were incubation period, disease intensity, and crop wet and dry weight.

Result of the research indicated that the pathogenic fungi of narrow leaf weeds identified were *Fusarium solani*, *Curvularia sp.*, and *Torula heteromorpha*. The fastest incubation period was *T. heteromorpha* attacking the weeds for two days after inoculation. The highest pathogenic fungus virulence was *T. heteromorpha* indicated by disease intensity on *C. rotundus*, *C. brevitolia*, *E. indica*, *A. compressus*, and *C. iria* as 2.12, 1.94, 2.27, 2.27, and 2.04%, respectively, and decreased the weeds wet and dry weight as 50% compared to control. *F. solani* was virulent fungus to maize indicated by the fastest incubation period as 4 days after inoculation and disease intensity of 1.46%, but no virulence found on lemon grass and nutmeg crops. The wet and dry weight of the cultivated crops decreased by the pathogenic fungi as 15% compared to control.

