

## RINGKASAN

Gulma adalah tumbuhan yang mengganggu pertumbuhan tanaman budidaya dan mengurangi hasil. Pengendalian gulma secara kimia dianggap cara yang paling mudah. Penggunaan bahan kimia dalam jangka panjang dapat merusak lingkungan, sehingga diperlukan cara baru untuk pengendalian gulma secara ramah lingkungan. Salah satu pengendalian gulma yang sedang dikembangkan yaitu menggunakan jamur patogen gulma. Penggunaan jamur patogen gulma sebagai bioherbisida dianggap sangat penting, karena selain cukup mempan juga mempunyai efek samping yang sangat kecil terhadap lingkungan. Tujuan penelitian yaitu : (1) mengetahui jenis patogen pada gulma berdaun sempit, (2) mengetahui virulensi patogen gulma terhadap beberapa jenis gulma berdaun sempit, (3) mengetahui virulensi patogen gulma terhadap tanaman budidaya, terkhususnya padi, jagung dan sorgum.

Penelitian ini dilaksanakan di Laboratorium Penyakit Tanaman dan di *Screen House* Fakultas Pertanian Universitas Jenderal Soedirman pada bulan Maret sampai Agustus 2019. Pengambilan sampel dengan metode *purposive random sampling* dan rancangan penelitian menggunakan *split-plot design* yang terdiri dari dua faktor, jenis jamur patogen (*Curvularia clavata*, *Fusarium oxysporum* isolat 1, *Fusarium oxysporum* isolat 2 dan *Fusarium oxysporum* isolat 3) sebagai *main plot* dan tanaman uji sebagai *sub plot*. Uji virulensi jamur patogen gulma daun sempit terhadap lima jenis gulma menggunakan gulma *Paspalum conjugatum*, *Eleusine indica*, *Cynodon dactylon*, *Fimbristylis tomentosa*, *Polytrias amaura* sebagai *sub plot*. Sedangkan uji virulensi jamur patogen gulma daun sempit terhadap tiga tanaman budidaya menggunakan tanaman padi, jagung, sorgum sebagai *sub plot*. Variabel yang diamati terbagi dalam tiga tahap, tahap eksplorasi, identifikasi, dan uji virulensi. Pada tahap eksplorasi dan identifikasi variabel yang diamati meliputi gejala penyakit di lapang, pertumbuhan patogen pada medium PDA, bentuk konidium patogen, dan virulensi patogen yang diperoleh. Sedangkan pada tahap uji virulensi variabel yang diamati meliputi gejala penyakit, masa inkubasi, intensitas penyakit, kejadian penyakit, bobot basah, bobot kering, dan jumlah biji.

Hasil dari penelitian ini diperoleh 2 jenis spesies jamur berbeda, yaitu *C. clavata* dan *F. oxysporum*, Patogen *C. clavata* dan *F. oxysporum* isolat 2 virulen terhadap gulma *E. indica* dan *C. dactylon*. Jamur patogen tidak menunjukkan gejala pada tanaman budidaya.

## SUMMARY

Weeds are plants that interfere with the growth of cultivated plants and reduce yields. Chemical weed control is considered the easiest way. The use of chemicals in the long term can damage the environment, so we need a new way to control weeds in an environmentally friendly manner. One of the weed controls that are being developed is using weed pathogenic fungi. The use of weed pathogenic fungi as bioherbicides is considered very important because in addition to being sufficiently effective it also has very little side effects on the environment. The research objectives are: (1) knowing the pathogen types in narrow leaf weeds, (2) knowing the virulence of weed pathogens against several types of narrow leaf weeds, (3) knowing the virulence of pathogenic weeds to cultivated, especially rice, corn and sorghum.

This research was conducted at the Plant Disease Laboratory and at the Screen House of the Faculty of Agriculture, Jenderal Soedirman University in March to August 2019. Sampling with a purposive random sampling method and a research design using a split-plot design consisting of two factors, the type of pathogenic fungi (*Curvularia clavata*, *Fusarium oxysporum* isolate 1, *Fusarium oxysporum* isolate 2 and *Fusarium oxysporum* isolate 3) as main plot and test plants as sub plot. Virulence test of pathogenic fungi of narrow leaf weeds against five types of weeds using *Paspalum conjugatum*, *Eleusine indica*, *Cynodon dactylon*, *Fimbristylis tomentosa*, *Polytrias amaura* as sub plots. While the virulence test of narrow leaf weed pathogen fungi on three cultivated plants used rice, maize, sorghum as sub plot. The observed variables are divided into three stages, the stages of exploration, identification, and virulence testing. In the exploration and identification stages, the observed variables include disease symptoms in the field, growth of pathogens in PDA medium, pathogenic conidium forms, and virulence of pathogens obtained. Whereas at the virulence test stage the observed variables include disease symptoms, incubation period, disease intensity, disease incidence, wet weight, dry weight, and number of seeds.

The results of this study obtained 2 different types of fungal species, namely *C. clavata* and *F. oxysporum*, pathogenic *C. clavata* and *F. oxysporum* isolates 2 virulent against *E. indica* and *C. dactylon* weeds. Pathogenic fungi do not show symptoms in cultivated plants.