UJI ANTAGONIS BEBERAPA ISOLAT *Trichoderma asperellum* TERHADAP *Helminthosporium turcicum* PENYEBAB PENYAKIT HAWAR DAUN PADA TANAMAN JAGUNG (*Zea mays* Linneaus)

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Abstrak

Penyakit hawar daun yang disebabkan oleh *Helminthosporium turcicum* merupakan salah satu penyakit penting pada tanaman jagung. Salah satu upaya pengendaliannya yaitu melalui pemanfaatan *T. asperellum* sebagai agens hayati. Penelitian ini bertujuan untuk memperoleh isolat *T. asperellum* paling efektif dalam menghambat pertumbuhan *H. turcicum* secara *in vitro*. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan 5 perlakuan dan 5 ulangan. Perlakuan terdiri dari kontrol dan 5 isolat *Trichoderma asperellum* (PC21, A116, AB2B3, SD327, SD324). Pengujian dilakukan menggunakan metode biakan ganda dan metode uap biakan. Semua isolat *T. asperellum* yang digunakan mampu menghambat pertumbuhan *H. turcicum*, penyebab penyakit hawar daun tanaman jagung secara *in vitro* dengan daya hambat 42,73%-53,62% pada metode biakan ganda, dan 37,28%-53,81% pada metode uap biakan. *T. asperellum* SD327 merupakan isolat yang paling efektif dalam menghambat pertumbuhan *H. turcicum* penyebab hawar daun pada tanaman jagung dengan rata-rata daya hambat 50,79%.

Kata kunci**:** *Helminthosporium turcicum*, mekanisme antagonis, metode biakan ganda, metode uap biakan, pengendalian hayati, *Trichoderma asperellum.*

ANTAGONISTIC TEST OF SEVERAL ISOLATES OF *Trichoderma asperellum* AGAINST *Helminthosporium turcicum* CAUSE OF LEAF BLIGHT DISEASE IN PLANTS CORN (*Zea mays* Linneaus)

Abstract

The leaf blight disease caused by *Helminthosporium turcicum* is one of the important diseases in maize plants. One of control strategies involves the use of *T. asperellum* as a biological control agent. This study aimed to identify the most effective *T. asperellum* isolate in inhibiting the growth of *H. turcicum* under in vitro conditions. The experiment was arranged using a Completely Randomized Design (CRD) with five treatments and five replications. Treatments included a control and five *T. asperellum* isolates (PC21, A116, AB2B3, SD327, and SD324). Antagonistic activity was assessed using the double culture method and the volatile compound method. All *T. asperellum* isolates tested showed the ability to inhibit *H. turcicum* growth, with inhibition percentages ranging from 42.73% to 53.62% in the dual culture method, and from 37.28% to 53.81% in the volatile compound method. Among all isolates, *T. asperellum* SD327 was the most effective, exhibiting the highest average inhibition rate of 50.79% against *H. turcicum*. These findings indicate that *T. asperellum* SD327 has strong potential as a biocontrol agent for managing northern corn leaf blight.

Keywords**:** Antagonistic mechanism, biological control, double culture method, *Helminthosporium turcicum*, *Trichoderma asperellum*, volatil culture method.