

## Intisari

Jagung manis merupakan komoditas penting di Indonesia. *Rhizoctonia solani* penyebab penyakit hawar pelepah dapat menurunkan produktivitas jagung. Mikroorganisme non patogen dapat digunakan dalam upaya pengendalian hawar pelepah pada tanaman jagung karena dapat menginduksi ketahanan tanaman sekaligus berperan dalam peningkatan pertumbuhan dan perkembangan tanaman (*Plant Growth Promoting Fungi/ PGPF*). *Aspergillus flavus* isolat HM termasuk dalam mikroorganisme non patogen yang akan diuji potensinya sebagai PGPF untuk meningkatkan pertumbuhan dan ketahanan tanaman jagung manis terhadap hawar pelepah. *A. flavus* isolat HM ditumbuhkan pada media yang selanjutnya diinokulasi pada tanah steril dua hari sebelum penanaman bibit jagung. Perlakuan yang diberikan antara lain K (Kontrol), KA (Tanaman diinokulasi *A. flavus*), KR (Tanaman diinokulasi *R. solani*), P1 (Tanaman diinokulasi *A. flavus*+*R. solani* pada 14 hst), P2 (Tanaman diinokulasi *A. flavus*+*R. solani* pada 28 hst), P3 (Tanaman diinokulasi *A. flavus*+*R. solani* pada 42 hst). Parameter yang diamati antara lain insidensi dan intensitas penyakit hawar pelepah, tinggi tanaman, panjang akar, volume akar, diameter batang, berat segar tajuk dan akar, berat kering tajuk dan akar. Hasil penelitian menunjukkan *Aspergillus flavus* isolat HM tidak berpengaruh secara signifikan terhadap tinggi tanaman, panjang akar, volume akar, berat segar tajuk, berat segar akar, berat kering tajuk, dan berat kering tetapi berpengaruh secara signifikan terhadap diameter batang tanaman jagung manis. *Aspergillus flavus* isolat HM dapat menekan intensitas dan insidensi hawar pelepah pada 14 hingga 28 hari setelah inokulasi *A. flavus* isolat HM.

Kata kunci : *Aspergillus flavus*, hawar pelepah, jagung manis, PGPF, *Rhizoctonia solani*.

### *Abstract*

Sweet corn is an important commodity in Indonesia. *Rhizoctonia solani* which causes sheath blight can reduce the productivity of sweet corn. Non-pathogenic microorganisms can be used to control sheath blight on sweet corn because they can induce systemic resistance of plant as well as play a role in increasing plant growth and development (Plant Growth Promoting Fungi/ PGPF). *Aspergillus flavus* HM isolate is a non-pathogenic microorganisms which was evaluated for its potency as PGPF for increase of growth and resistance of sweet corn plants to sheath blight. *Aspergillus flavus* HM isolate was grown in media and then inoculated on sterile soil two days before planting seed corns. The treatments used were K (Control), KA (Plants inoculated by *A. flavus*), KR (Plants inoculated by *R. solani*), P1 (Plants inoculated by *A. flavus* + *R. solani* at 14 day after inoculation), P2 (Plants inoculated by *A. flavus* + *R. solani* at 28 day after inoculation), P3 (Plants inoculated by *A. flavus* + *R. solani* at 42 day after inoculation). The Parameters observed was incidence and intensity of sheath blight, plant height, root length, root volume, stem diameter, shoot and root fresh weight, shoot and root dry weight. The results showed that *Aspergillus flavus* HM isolate did not affect plant height, root length, root volume, shoot fresh weight, root fresh weight, shoot dry weight, and dry weight significantly but had a significant effect on diameter of stalks sweet corn plants. *Aspergillus flavus* HM isolate could reduce the intensity and incidence of sheath blight on 14 to 28 days after inoculation of *A. flavus* HM isolates.

Keyword : *Asperfillus flavus*, PGPF, *Rhizoctonia solani*, sheath blight, sweet corn.