

Intisari

SOLARISASI TANAH DAN APLIKASI *Bacillus velezensis* B-27 UNTUK PENGELOLAAN PENYAKIT PENTING TANAMAN PAKIS (*Rumohra adiantiformis*)

Tanaman pakis (*Rumohra adiantiformis*) merupakan komoditas florikultura bernilai ekonomi tinggi yang banyak digunakan dalam industri rangkaian bunga. Namun, produktivitasnya menurun akibat serangan penyakit yang disebabkan oleh jamur patogen seperti *Neopestalotiopsis* sp., *Fusarium* sp., *Calonectria* sp., dan *Cladosporium* sp. Penelitian ini bertujuan untuk mengetahui efektivitas solarisasi tanah dan aplikasi bakteri *Bacillus velezensis* B-27 dalam menekan intensitas penyakit serta meningkatkan pertumbuhan tanaman pakis. Penelitian dilaksanakan di lahan PT. Tropika Flora Persada yang terletak di Magelang, Jawa Tengah menggunakan Rancangan Acak Lengkap (RAL) pada tiga lokasi yang memiliki ketinggian berbeda dengan tiga perlakuan yaitu solarisasi tanah, aplikasi *B. velezensis* B-27, dan kontrol, masing-masing diulang tiga kali. Hasil penelitian menunjukkan bahwa perlakuan kombinasi solarisasi tanah dan aplikasi *B. velezensis* B-27 mampu menekan intensitas penyakit secara signifikan dibandingkan kontrol, serta meningkatkan parameter agronomis seperti jumlah tunas. *B. velezensis* B-27 diduga dapat menghasilkan metabolit bioaktif dan fitohormon yang mendukung pertumbuhan tanaman dan menghambat patogen. Penelitian ini membuktikan bahwa strategi pengendalian hayati dan fisik dapat menjadi alternatif ramah lingkungan dalam sistem budidaya pakis yang berkelanjutan.

Kata kunci: *Rumohra adiantiformis*, solarisasi tanah, *Bacillus velezensis* B-27, penyakit tanaman, pengendalian hayati.

Abstract

SOIL SOLARIZATION AND *Bacillus velezensis* B-27 APPLICATION FOR THE DISEASE MANAGEMENT OF MAJOR DISEASES IN LEATHERLEAF FERN

(*Rumohra adiantiformis*)

The fern (*Rumohra adiantiformis*) was recognized as a floricultural commodity with high economic value and was widely utilized in the floral arrangement industry. However, its productivity had decreased due to diseases caused by fungal pathogens such as *Neopestalotiopsis* sp., *Fusarium* sp., *Calonectria* sp., and *Cladosporium* sp. This study aimed to evaluate the effectiveness of soil solarization and the application of *Bacillus velezensis* B-27 in reducing disease intensity and promoting the growth of *R. adiantiformis*. The experiment was carried out in the field of PT Tropika Flora Persada, Magelang, using a Completely Randomized Design (CRD) at three sites with different altitudes. Three treatments was applied, namely soil solarization, application of *B. velezensis* B-27, and a control, each replicated three times. The results indicated that the combination of soil solarization and *B. velezensis* B-27 significantly reduced disease intensity compared to the control and improved agronomic parameters such as the number of leaves and shoots. *B. velezensis* B-27 produced bioactive metabolites and phytohormones that supported plant growth and suppressed pathogen development. It was concluded that the integration of biological and physical control strategies could be an environmentally friendly alternative for the sustainable cultivation of *R. adiantiformis*.

Keywords: *Rumohra adiantiformis*, soil solarization, *Bacillus velezensis* B-27, plant disease, biological control.