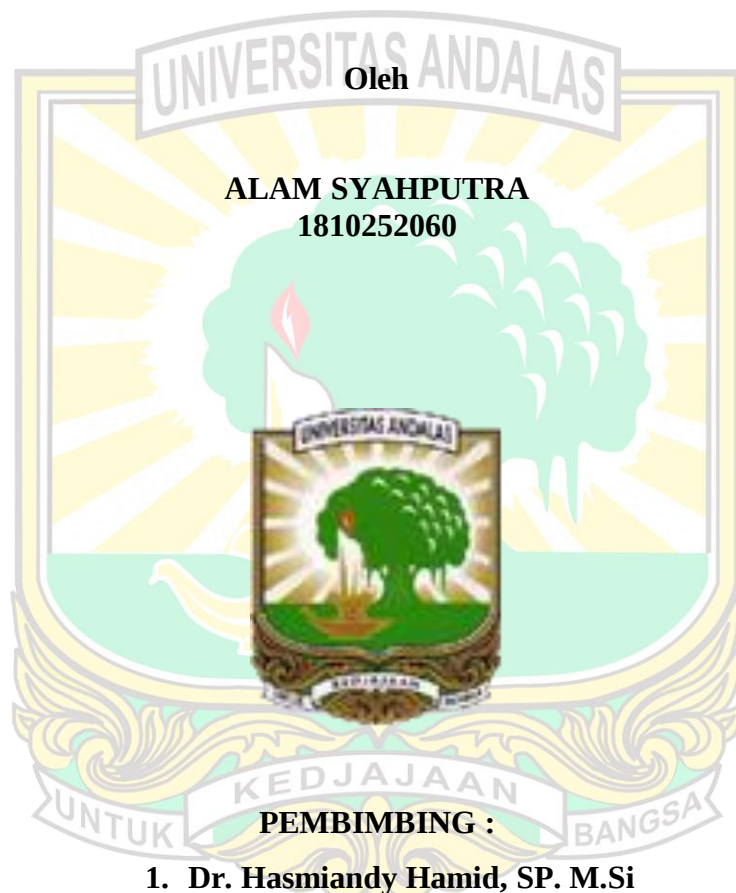


**PENGARUH INTRODUKSI STRAIN *Bacillus* spp. TERHADAP
PERTUMBUHAN TANAMAN, SERANGGA HAMA DAN
MUSUH ALAMI PADA PERTANAMAN BAWANG MERAH
(*Allium ascalonicum* L.)**

Skripsi



Oleh

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ABSTRAK

Bacillus spp. termasuk ke dalam kelompok PGPR (*Plant Growth Promoting Rhizobacteria*) yang dapat berperan dalam pertumbuhan dan ketahanan tanaman. Penelitian ini bertujuan mengetahui pengaruh beberapa strain *Bacillus* spp. terhadap pertumbuhan tanaman, hama dan musuh alami pada pertanaman bawang merah. Penelitian dilaksanakan di Laboratorium Mikrobiologi, Departemen Proteksi Tanaman dan lahan pertanaman bawang merah di Nagari Sungai Nanam, Kecamatan Lembah Gumanti, Kabupaten Solok, Sumatera Barat. Penelitian telah dilaksanakan dari bulan Agustus sampai Desember 2022. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) yang terdiri dari 11 perlakuan yang diulang sebanyak 3 kali. Perlakuan terdiri dari 10 strain *Bacillus* spp., ditambah dengan perlakuan kontrol (tanpa *Bacillus* spp.). Variabel yang diamati adalah tinggi dan jumlah daun tanaman, kelimpahan hama dan musuh alami, persentase dan intensitas serangan hama, serta bobot segar dan bobot kering. Hasil penelitian menunjukkan bahwa aplikasi strain *Bacillus* spp. pada tanaman bawang merah mampu menekan serangan hama utama *Liriomyza* spp. dan *S. exigua* serta meningkatkan bobot umbi bawang merah dibandingkan kontrol, meskipun tidak berpengaruh nyata terhadap pertumbuhan vegetatif tanaman. *B. mycoides* strain MRSNUMBE 2.2 merupakan strain paling efektif utamanya dalam meningkatkan hasil panen bawang merah. Penelitian ini menunjukkan bahwa, *Bacillus* spp. berpotensi sebagai agensia hayati untuk mengendalikan hama dan meningkatkan produktivitas tanaman bawang merah.

Kata Kunci : Bawang merah, *Bacillus* spp., hama, musuh alami

EFFECT OF INTRODUCTION OF STRAINS *Bacillus* spp. ON PLANT GROWTH, PESTS AND NATURAL ENEMIES IN ONION PLANTS (*Allium ascalonicum* L.)

ABSTRACT

Bacillus spp. was included in the PGPR (Plant Growth Promoting Rhizobacteria) group, which can play a role in plant growth and resilience. This research aimed to study the effect of several strains of *Bacillus* spp. on plant growth, pests, and natural enemies in shallot plantings. The research was conducted at the Microbiology Laboratory, Department of Plant Protection, and shallot planting areas in Nagari Sungai Nanam, Lembah Gumanti District, Solok Regency, West Sumatra. The research was carried out from August to December 2022. This research used a randomized block design (RBD) consisting of 11 treatments that were repeated three times. The treatment consisted of 10 strains of *Bacillus* spp., plus a control treatment (without *Bacillus* spp.). The observed variables were plant height and number of leaves, pest and natural enemy abundance, percentage and intensity of pest attack, as well as fresh weight and dry weight. The results showed that the application of *Bacillus* spp. strains on shallot plants was able to suppress the attack of the main pests, *Liriomyza* spp. and *S. exigua*, and increase shallot bulb weight compared to control, although it did not significantly affect vegetative growth. *B. mycoides* strain MRSNUMBE 2.2 was the most effective strain, especially in increasing shallot crop yields. This study demonstrated that *Bacillus* spp. has the potential to serve as a biocontrol agents to manage pests and improve shallot crop productivity.

Keywords: Shallots, *Bacillus* spp., pests, natural enemies

