RESPON PERTUMBUHAN DAN HASIL BAWANG MERAH (*Allium ascalonicum* L.) PADA PEMBERIAN PUPUK KOTORAN KAMBING DAN AGENSIA HAYATI *Paenibacillus polymyxa*

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ABSTRAK

Budidaya tanaman bawang merah di musim hujan rentan terhadap serangan patogen *Alternaria porri* Ell. Cif menyebabkan penyakit bercak ungu pada bawang merah. Agensia hayati *Paenibacillus polymxa* dapat digunakan sebagai pengendalian hayati terhadap penyakit tersebut dengan mekanisme menghambat penyebaran melalui persaingan hidup dan membatasi area pertumbuhan patogen. Tujuan penelitian ini adalah menentukan interaksi antara penggunaan pupuk kotoran kambing dan konsentrasi agensia hayati *P. polymyxa* dalam meningkatkan pertumbuhan dan hasil tanaman bawang merah. Penelitian telah dilaksanakan di Kebun Percobaan Wedomartani, Ngemplak, Sleman, DIY pada bulan Desember 2019–Februari 2020. Penelitian disusun menurut RAKL (Rancangan Acak Kelompok Lengkap) dua faktor dan uji kontras ortogonal (3 x 3) + 1. Faktor pertama dosis pupuk kotoran kambing dengan dosis 10, 20, dan 30 ton/ha. Faktor kedua konsentrasi agensia hayati *P. polymyxa* 5, 10, dan 15 mL/L air. Ditambah kontrol (pupuk kotoran kambing 0 ton/ha dan konsentrasi agensia hayati *P. polymyxa* 0 mL/L air). Hasil penelitian menunjukkan dosis pupuk kotoran kambing 20 ton/ha memberikan hasil terbaik pada parameter tinggi tanaman, bobot basah umbi per rumpun, dan diameter umbi. Konsentrasi *P. polymyxa* tidak menunjukkan adanya beda nyata antara rerata perlakuan terhadap semua parameter pengamatan pertumbuhan dan hasil. Tidak terdapat interaksi pada perlakuan dosis pupuk kotoran kambing dan konsentrasi agensia hayati *P. polymyxa* terhadap semua parameter pertumbuhan dan hasil.

Kata kunci : *bawang merah, pupuk kotoran kambing, dan p. polymyxa.*

RESPONSE OF GROWTH AND YIELD OF SHALLOTS (*Allium ascalonicum* L.) IN VARIOUS DOSES OF GOAT MANURE FERTILIZER AND BIOLOGICAL AGENT *Paenibacillus polymyxa*

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ABSTRACT

Shallots cultivation in the rainy season is susceptible to attack of the pathogen *Alternaria porri* Ell. Cif causes purple blotch of shallots. The biological agent *Paenibacillus polymxa* can be used as biological control of the disease by inhibiting the spread mechanism through life competition and limiting the area of growth of pathogens. The aim of the study was to determine the interaction between the use of goat manure fertilizer and *P. polymyxa* to increase the growth and yield of shallots. The research has carried out in experimental garden Wedomartani, Ngemplak, Sleman, DIY in Desember 2019 until Februari 2020. The experiment was arranged in RCBD (Randomized Complete Block Design) by two factor and contrast orthogonal (3x3)+1. The first factor was the doses goat manure fertilizer 10, 20, and 30 ton/ha. The second factor was the concentration of biological agent *P. polymyxa* 5, 10, dan 15 mL/L of water. Added control (the goat manure fertilizer 0 ton/ha and the concentration of biological agent *P. polymyxa* 0 mL/L of water). The results showed that the doses of goat manure fertilizer 20 ton/ha gave the best result on the parameters of the height of plant, the weight of wet bulbs per clump, and the diameter of bulbs. The concentration of *P. polymyxa* didn't show any difference evident between the average treatment of all growth and yield parameters. There was no interaction with the treatment of goat manure doses and concentration of biological agent *P. polymyxa* on all growth and yield parameters.

Keywords : *shallots, goat manure, and p. polymyxa.*