

APLIKASI PUPUK NPK, *PLANT GROWTH PROMOTING RHIZOBACTERIA*, DAN SILIKA NANO TERHADAP PERTUMBUHAN DAN HASIL BAWANG MERAH TSS DI LAHAN PASIR PANTAI

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ABSTRAK

Bawang merah (*Allium ascalonicum* L.) merupakan komoditas strategis sayuran di dataran rendah. Salah satu permasalahan yang dihadapi adalah produktivitas khususnya pada lahan yang kurang subur dan rentan terhadap cekaman lingkungan. Salah satu strategi yang dapat dilakukan untuk meningkatkan produktivitas dengan mengintegrasikan penggunaan pupuk NPK, PGPR (*Plant Growth Promoting Rhizobacteria*), dan silika nano. Penelitian ini bertujuan mengetahui pengaruh pemupukan tersebut terhadap pertumbuhan dan hasil bawang merah asal biji (*True Shallot Seeds*). Penelitian dilaksanakan pada bulan Mei hingga Agustus 2025. Penelitian menggunakan Rancangan Acak Kelompok Lengkap satu faktor dengan 6 perlakuan terdiri dari P1 = 1 D + 0 ml/L PGPR + 0 ml/L Silika nano, P2 = 1 D + 60 ml/L PGPR + 0 ml/L Silika nano, P3 = 1 D + 60 ml/L PGPR + 10 ml/L Silika nano, P4 = 2 D + 0 ml/L PGPR + 0 ml/L Silika nano, P5 = 2 D + 60 ml/L PGPR + 0 ml/L Silika nano, dan P6 = 2 D + 60 ml/L PGPR + 10 ml/L Silika nano. Aplikasi NPK, PGPR, dan silika nano memberikan hasil berbeda nyata pada parameter jumlah anakan 30 HST perlakuan P4, berat kering akar perlakuan P3, XRF daun unsur K₂O perlakuan P6, dan XRF umbi unsur ZnO perlakuan P2.

Kata Kunci: Bawang Merah, NPK, PGPR, Silika Nano, *True Shallot Seed*

**THE EFFECTS OF NPK FERTILIZER, *PLANT GROWTH*
PROMOTING RHIZOBACTERIA, AND NANO SILICA ON THE GROWTH
AND YIELD OF TSS ONIONS IN COASTAL SANDY SOIL**

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ABSTRACT

Shallots (*Allium ascalonicum* L.) are a strategic vegetable crop in lowland areas. One of the challenges faced is low productivity, particularly on less fertile land that is vulnerable to environmental stress. One strategy to increase productivity is to integrate the use of NPK fertilizer, PGPR (Plant Growth-Promoting Rhizobacteria), and nano-silica. This study aims to determine the effect of this fertilization on the growth and yield of true shallot seeds. The study was conducted from May to August 2025. The study used a one-factor completely randomized block design with six treatments: P1 = 1 D + 0 ml/L PGPR + 0 ml/L nano-silica, P2 = 1 D + 60 ml/L PGPR + 0 ml/L nano-silica, P3 = 1 D + 60 ml/L PGPR + 10 ml/L nano-silica, P4 = 2 D + 0 ml/L PGPR + 0 ml/L nano-silica, P5 = 2 D + 60 ml/L PGPR + 0 ml/L nano-silica, and P6 = 2 D + 60 ml/L PGPR + 10 ml/L nano-silica. The application of NPK, PGPR, and nano-silica produced significant differences in the following parameters: the number of tillers (30 DAP) in treatment P4, dry root weight in treatment P3, leaf K₂O content (XRF) in treatment P6, and tuber ZnO content (XRF) in treatment P2.

Keywords: Shallot, NPK, PGPR, Nano-Silica, *True Shallot Seed*