RINGKASAN

Bawang merah (*Allium ascalonicum* L.) merupakan komoditas tanaman hortikultura yang banyak dikonsumsi manusia sebagai campuran bumbu masak dan mempunyai nilai ekonomi tinggi. Produksi bawang merah di Indonesia masih rendah, sehingga perlu ditingkatkan diantaranya melalui pemupukan. Formula pupuk majemuk NPK-ZEO Granul ini diperlukan untuk meningkatkan hasil tanaman. Penelitian ini bertujuan untuk 1) mengetahui pengaruh komposisi pupuk majemuk NPK-ZEO Granul terhadap serapan P dan hasil tanaman bawang merah pada tanah Ultisol, 2) mengetahui pengaruh kompos terhadap serapan P dan hasil tanaman bawang merah pada tanah Ultisol, 3) menentukan komposisi pupuk majemuk NPK-ZEO Granul yang paling baik pengaruhnya untuk meningkatkan hasil tanaman bawang di tanah Ultisol.

Penelitian ini dilaksanakan pada bulan November 2019 sampai dengan bulan Februari 2020 di *Green House*, Laboratorium Ilmu Tanah dan Laboratorium Agrohorti, Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto. Metode penelitian meliputi perakitan pupuk Majemuk NPK-ZEO Granul, persiapan sampel tanah, pemupukan, penanaman, pemeliharaan dan pemanenan tanaman. Variabel yang diamati yaitu jumlah umbi, bobot segar akar, bobot segar umbi, bobot segar daun, bobot segar tanaman, bobot kering akar, bobot kering umbi, bobot kering daun, bobot kering tanaman dan serapan P. Pengambilan sampel jaringan tanaman dilakukan pada saat akhir pertumbuhan vegetatif tanaman yaitu 45 hari setelah tanam.

Pupuk majemuk NPK-ZEO Granul berpengaruh nyata terhadap variabel bobot kering daun dan tidak berpengaruh nyata terhadap variabel jumlah umbi, bobot segar akar, bobot segar umbi, bobot segar daun, bobot segar tanaman, bobot kering akar, bobot kering umbi, bobot kering tanaman dan serapan P tanaman. Kompos berpengaruh nyata terhadap variabel bobot segar umbi, bobot segar daun, bobot segar tanaman, bobot kering umbi, bobot kering daun dan bobot kering tanaman. Kompos tidak berpengaruh nyata terhadap variabel jumlah umbi, bobot segar akar, bobot kering akar dan serapan P.Komposisi pupuk majemuk NPK-ZEO Granul yang paling baik pengaruhnya untuk meningkatkan hasil tanaman bawang merah di tanah Ultisol yaitu omposisi pupuk zeolit alam dengan diameter 0,15 mm (100 mesh) dan pupuk majemuk NPK granul dengan ukuran 4 mm dan kompos (M_4O_1). Sedangkan yang pengaruhnya paling baik untuk serapan P yaitu perlakuan dengan komposisi pupuk zeolit alam dengan diameter 0,25 mm (60 mesh) dan pupuk majemuk NPK granul dengan ukuran 2 mm ($M_1O_{1)}$.

SUMMARY

Shallot (Allium ascalonicum L.) is a horticultural plant commodity that is widely consumed by humans as a mixture of cooking spices and has high economic value. Onion production in Indonesia is still low, so it needs to be increased through fertilization. This NPK-ZEO Granule compound fertilizer formula is needed to increase crop yields. This study aims to 1) determine the effect of NPK-ZEO granule compound fertilizer composition on P uptake and shallot yield on Ultisols soil, 2) determine the effect of compost on P uptake and shallot yield on Ultisols soil, 3) determine the composition of compound fertilizer NPK-ZEO Granule had the best effect in increasing the yield of onions in Ultisol soil.

This research was conducted in November 2019 until February 2020 in the Green House, Soil Science Laboratory and Agrohorti Laboratory, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto. Research methods include assembling NPK-ZEO Granule Compound fertilizer, soil sample preparation, fertilizing, planting, maintaining and harvesting plants. Variables observed were number of tubers, root fresh weight, tuber fresh weight, leaf fresh weight, plant fresh weight, root dry weight, tuber dry weight, leaf dry weight, plant dry weight and P. absorption. Plant tissue sampling was done at the end Vegetative growth of plants that is 45 days after planting.

NPK-ZEO Granule compound fertilizer significantly affected the leaf dry weight variable and had no significant effect on the number of tubers, root fresh weight, tuber fresh weight, leaf fresh weight, plant fresh weight, root dry weight, tuber dry weight, plant dry weight and plant P uptake. Compost has a significant effect on tuber fresh weight, leaf fresh weight, plant fresh weight, tuber dry weight, leaf dry weight and plant dry weight. Compost has no significant effect on the number of tubers, root fresh weight, root dry weight and uptake of P. The composition of NPK-ZEO Granule compound fertilizer has the best effect on increasing the yield of shallot plants in Ultisols, namely the composition of natural zeolite fertilizer with a diameter of 0.15. Whereas the best effect for P uptake was treatment with a composition of natural zeolite fertilizer with a diameter of 0.25 mm (60 mesh) and compound fertilizer NPK granule with a size of 2 mm (M1O1).