

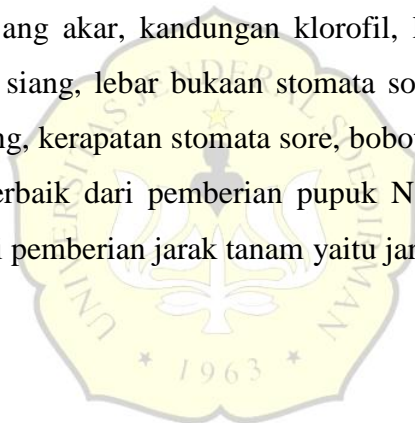
RINGKASAN

Penelitian ini bertujuan untuk: 1) Menentukan pengaruh dosis pupuk N terhadap pertumbuhan dan hasil bawang merah serta mendapatkan konsentrasi pupuk N yang terbaik; 2) Menentukan pengaruh perlakuan jarak tanam terhadap pertumbuhan dan hasil bawang merah serta mendapatkan perlakuan jarak tanam yang terbaik; 3) Menentukan interaksi antara dosis pupuk N dan jarak tanam terhadap pertumbuhan dan hasil bawang merah yang terbaik.

Penelitian dilaksanakan pada bulan September sampai November 2019 di lahan pasir pantai Desa Karanganyar, Kecamatan Adipala, Kabupaten Cilacap, Jawa Tengah. Rancangan penelitian yang digunakan yaitu Rancangan Acak Kelompok Lengkap (RAKL) dengan dua faktor. Faktor pertama yaitu konsentrasi Pupuk nitrogen (N) yang terdiri dari 3 taraf, yaitu N1= pupuk 90 N kg/ha, N2= pupuk 180 N kg/ha, N3= pupuk 270 N kg/ha. Faktor kedua yaitu berbagai jarak tanam (J) yang terdiri dari 3 taraf, yaitu J1= jarak tanam 10 cm x 10 cm, J2= jarak tanam 15 cm x 15 cm, J3= jarak tanam 20 cm x 20 cm. Variabel yang diamati yaitu tinggi tanaman, jumlah daun, panjang akar, bobot tajuk segar, bobot tajuk kering, bobot akar segar, bobot akar kering, bobot umbi segar per rumpun, bobot umbi kering per rumpun, diameter umbi, kandungan klorofil, luas daun, lebar bukaan dan kerapatan stomata, jumlah umbi dan hasil umbi segar. Data yang diperoleh dianalisis menggunakan uji F, apabila terdapat keragaman dilanjutkan dengan uji *Duncan Multiple Range Test* (DMRT) taraf 5%.

Hasil penelitian menunjukkan bahwa: 1) Pemberian pupuk N mampu meningkatkan lebar bukaan stomata bawang merah pada sore hari, dengan hasil lebar bukaan stomata sore pada perlakuan pupuk 270 N kg/ha sebesar 7,07 μm dan hasil umbi segar pada perlakuan pupuk 90 N kg/ha sebesar 9,89 ton/ha tetapi tidak menunjukkan peningkatan terhadap tinggi tanaman, jumlah daun, luas daun, jumlah akar, panjang akar, kandungan klorofil, lebar bukaan stomata pagi, lebar bukaan stomata siang, kerapatan stomata pagi, kerapatan stomata siang, kerapatan stomata sore, bobot segar dan bobot kering akar serta bobot segar dan bobot

kering daun; 2) Penggunaan jarak tanam berpengaruh meningkatkan kandungan klorofil sebesar 36,89 unit dengan perlakuan jarak tanam 15 cm x 15 cm, bobot segar umbi sebesar 36,98 g dengan perlakuan jarak tanam 20 cm x 20 cm, bobot kering umbi sebesar 5,4 g dengan perlakuan jarak tanam 20 cm x 20 cm, diameter umbi sebesar 3,55 cm, hasil segar tanaman dengan perlakuan jarak tanam 10 cm x 10 cm sebesar 12,60 ton/ha dan hasil umbi askip dengan perlakuan jarak tanam 10 cm x 10 cm sebesar 10,26 ton/ha, tetapi tidak berpengaruh terhadap tinggi tanaman, jumlah daun, luas daun, jumlah akar, lebar bukaan stomata pagi, lebar bukaan stomata siang, lebar bukaan stomata sore, kerapatan stomata pagi, kerapatan stomata siang, kerapatan stomata sore, bobot segar dan bobot kering akar serta bobot segar dan bobot kering daun; 3) Terdapat interaksi antara pupuk N dan jarak tanam terhadap jumlah akar 73,33 unit, bobot kering akar 0,14 g dan bobot kering daun 2 g, tetapi tidak berpengaruh terhadap tinggi tanaman, jumlah daun, luas daun, panjang akar, kandungan klorofil, lebar bukaan stomata pagi, lebar bukaan stomata siang, lebar bukaan stomata sore, kerapatan stomata pagi, kerapatan stomata siang, kerapatan stomata sore, bobot segar akar dan bobot segar daun; 4) Perlakuan terbaik dari pemberian pupuk N adalah pupuk 90 N kg/ha sedangkan terbaik dari pemberian jarak tanam yaitu jarak tanam 15 cm x 15 cm.



SUMMARY

The purpose of this research is to: 1) Determine the effect of N fertilizer dose on the growth and yield of shallots and obtain the best N fertilizer concentration; 2) Determine the effect of spacing treatment on onion growth and yield and get the best spacing treatment; 3) Determine the interaction between N fertilizer dosage and spacing on the best shallot growth and yield.

The research is conducted from September until November 2019 in the sand land of Karanganyar Village, Adipala District, Cilacap Regency, Central Java. The research design used a Randomized Complete Block Design (RCBD) with two factors. The first factor is the concentration of nitrogen fertilizer (P) consisting of 3 levels, N1 = fertilizer 90 N kg/ha, N2 = fertilizer 180 N kg/ha, N3 = fertilizer 270 N kg/ha. The second factor is the various spacing (J) which consists of 3 levels, namely J1 = spacing 10 cm x 10 cm, J2 = spacing 15 cm x 15 cm, J3 = spacing 20 cm x 20 cm. The variables observed were plant height, number of leaves, root length, fresh shoot weight, dry shoot weight, fresh root weight, dry root weight, fresh tuber weight per clump, dry tuber weight per clump, tuber diameter, chlorophyll content, leaf area, width of opening and density of stomata, number of tubers and yield of fresh tubers. The data obtained were analyzed using the F test, if there was diversity, it was continued with the Duncan Multiple Range Test (DMRT) of 5% level.

The results showed that: 1) The application of N fertilizer can increase the width of the stomata opening of the shallot in the afternoon, with the result that the width of the opening of the stomata in the afternoon in the fertilizer treatment of 270 N kg/ha is 7.07 μm and the yield of fresh tubers in the 90 N kg/ha fertilizer treatment is 9,89 tonnes/ha but did not show an increase in plant height, leaf number, leaf area, root number, root length, chlorophyll content, morning stomatal opening width, afternoon stomata opening width, morning stomata density, afternoon stomata density, afternoon stomata density, weight fresh and dry weight of roots and fresh weight and dry weight of leaves; 2) The use of spacing has the effect of increasing the chlorophyll content by 36.89 units with the

treatment of 15 cm x 15 cm spacing, 36.98 g fresh weight with 20 cm x 20 cm spacing treatment, 5.4 g tuber dry weight with a treatment spacing of 20 cm x 20 cm, tuber diameter of 3.55 cm, fresh yields of plants with a treatment spacing of 10 cm x 10 cm of 12.60 tons/ha and yield of tubers of tuber with a treatment spacing of 10 cm x 10 cm amounted to 10.26 tonnes/ha, but did not affect plant height, number of leaves, leaf area, number of roots, width of morning stomata openings, width of afternoon stomata openings, width of afternoon stomata openings, morning stomata density, afternoon stomata density, afternoon stomata density, fresh weight and dry weight of roots as well as fresh weight and dry weight of leaves; 3) There is an interaction between N fertilizer and spacing on the number of roots of 73.33 units, root dry weight of 0.14 g and leaf dry weight of 2 g, but it does not affect plant height, number of leaves, leaf area, root length, and chlorophyll content, morning stomatal opening width, afternoon stomatal opening width, afternoon stomatal opening width, morning stomatal density, afternoon stomatal density, afternoon stomatal density, fresh root weight and leaf fresh weight; 4) The best treatment of N fertilizer is 90 N kg/ha while the best of spacing is 15 cm x 15 cm.

