

RINGKASAN

Bawang merah merupakan salah satu komoditas hortikultura unggulan yang memiliki nilai komersial tinggi. Permintaan bawang merah terus meningkat setiap tahunnya, salah satu upaya yang dilakukan untuk meningkatkan produksi bawang merah adalah dengan budidaya tanaman secara hidroponik karena semakin minimnya lahan produktif di Indonesia dan aplikasi pupuk guna memenuhi kebutuhan nutrisi tanaman. Ekstrak rumput laut merupakan salah satu pupuk organik yang belum banyak digunakan di Indonesia. Penelitian ini bertujuan untuk: 1) Menentukan konsentrasi ekstrak rumput laut yang memberikan pengaruh terbaik pada pertumbuhan dan hasil tanaman bawang merah pada hidroponik substrat. 2) Menentukan jenis media tanam yang memberikan pengaruh terbaik pada pertumbuhan dan hasil tanaman bawang merah pada hidroponik substrat. 3) Menentukan interaksi antara konsentrasi ekstrak rumput laut dan jenis media tanam dan kombinasi perlakuan yang memberikan pengaruh terbaik terhadap pertumbuhan dan hasil tanaman bawang merah pada hidroponik substrat.

Penelitian dilaksanakan di Desa Krandegan Kecamatan Puring Kabupaten Kebumen pada bulan Februari-April 2021. Rancangan percobaan yang digunakan adalah Rancangan Acak Kelompok Lengkap (RAKL) dengan dua faktor percobaan. Faktor pertama yaitu konsentrasi ekstrak rumput laut (A) yang terdiri atas 4 taraf, A₀ = 0 ml/l, A₁ = 0,5 ml/l, A₂ = 1 ml/l dan A₃ = 1,5 ml/l. Faktor kedua yaitu jenis media tanam yang terdiri atas 3 taraf, B₁ = arang sekam, B₂ = *cocopeat* dan B₃ = arang sekam + *cocopeat*. Percobaan diulang sebanyak 3 kali. Variabel yang diamati yaitu tinggi tanaman, jumlah daun, jumlah anakan, luas daun, jumlah umbi, diameter umbi, bobot umbi segar, bobot kering umbi askip, bobot umbi kering oven, bobot tanaman segar, bobot tanaman kering, bobot akar segar, bobot akar kering dan bobot hasil tanaman. Data di analisis menggunakan ANOVA dan apabila terdapat keragaman dilanjutkan dengan uji DMRT pada taraf 5%.

Hasil penelitian menunjukkan bahwa: 1) Aplikasi ekstrak rumput laut 1,5 ml/l berpengaruh sangat nyata terhadap tinggi tanaman 24,02 cm, bobot umbi segar 16,43 g, bobot umbi kering askip 12,72 g, bobot umbi kering oven 1,59 g dan berpengaruh nyata pada bobot hasil tanaman 4,54 t/ha. 2) Media tanam arang sekam berpengaruh sangat nyata terhadap bobot akar segar tanaman bawang merah 0,96 g. Kombinasi media tanam arang sekam + *cocopeat* (50:50) berpengaruh sangat nyata terhadap tinggi tanaman 24,63 cm, diameter umbi 1,37 cm, bobot umbi segar 18,30 g, bobot umbi kering askip 14,30 g, bobot umbi kering oven 1,63 g, bobot tanaman segar 22,36 g, bobot tanaman kering 3,58 g, bobot hasil tanaman 4,88 t/ha dan berpengaruh nyata terhadap jumlah anakan 3,93 anakan, luas daun 193,97 cm². 3) Interaksi antara konsentrasi ekstrak rumput laut dan jenis media tanam berpengaruh nyata terhadap bobot umbi segar 20,45 g dan bobot umbi kering askip 16,51 g.

SUMMARY

Shallot is one of horticultural commodity that has high commercial value. Market demand for shallot continues to increase every year. One of the efforts that can be done to increase the production of shallots is by hydroponic cultivation because of limited productive land and fertilizer application in Indonesia. Seaweed extract is one of organic fertilizer that is not familiar to use in Indonesia. The research aims to : 1) determine the concentration of seaweed extract that gives the best effect on the growth and result of shallots on hydroponic substrates. 2) determine the media types that gives the best influence on the growth and result of shallot on hydroponic substrates. 3) determine the interaction between the concentration of seaweed extract and media types and the combination of treatments that give the best effect on the growth and result of shallots on hydroponic substrates.

This research was carried out in February – April 2021 at Krandegan, Puring District, Kebumen Regency. The method applied was a Completely Randomized Block with two experimental factors. The first factor is the concentration of seaweed extract (A) which consists of 4 levels, A0 = 0 ml/l, A1 = 0.5 ml/l, A2 = 1 ml/l and A3 = 1.5 ml/l. The second factor is the type of planting medium which consists of 3 levels, B1 = husk charcoal, B2 = cocopeat and B3 = husk charcoal + cocopeat. The experiment was repeated 3 times. The variables observed were plant height, number of leaves, number of tillers, leaf area, number of bulb, diameter of bulb, fresh weight of bulb, dry weight of askip bulb, dry weight of oven bulb, fresh weight of plant, dry weight of plant, fresh weight of root, dry weight of root and plant weight yield. Data were analyzed with Analysis of Variance (ANOVA) and if there is diversity, it is continued with the DMRT test at the 5% level.

The results showed that: 1) Application of 1,5 ml/l seaweed extract had a very significant effect on plant height 24,02 cm, fresh weight of bulb 16,43 g, dry weight of askip bulb 12,72 g, dry weight of oven bulb 1,59 g and significantly affected on plant weight yield 4,54 t/ha. 2) Husk charcoal had a very significant effect on fresh weight of root 0,96 g. Husk charcoal + cocopeat with ratio of 50:50 gave a very significant effect on plant height of 24,63 cm, diameter of bulb 1,37 cm, fresh weight of bulb 18,30 g, dry weight of askip bulb 14,30 g, dry weight of oven bulb 1,63 g, fresh weight of plant 22,36 g, dry weight of plant 3.58 g, plant weight yield 4,88 t/ha and significantly affected on the number of tillers 3,93 tillers, leaf area 193.97 cm². 3) The interaction between the concentration of seaweed extract and media types had significantly affected on the fresh weight of bulb 20,45 g and dry weight of askip bulb 16.51 g.