

RINGKASAN

Melon merupakan salah satu buah yang digemari oleh masyarakat, begitu pula dengan tanaman bawang merah yang sering dipakai sebagai bumbu masakan Indonesia. Kedua komoditas tersebut permintaannya terus meningkat, namun dibatasi oleh lahan pertanian yang semakin sempit. Pemanfaatan lahan marginal pasir pantai merupakan salah satu upaya dalam mengatasi lahan pertanian yang semakin terbatas. Lahan marginal pasir pantai memiliki faktor pembatas seperti kecepatan angin yang tinggi dan membawa garam yang dapat menyebabkan tanaman tercekam salinitas. Selain itu, perlu diberikan pembenah tanah seperti pupuk kandang dan tanah lempung untuk memperbaiki struktur tanah. Tujuan dilakukan penelitian ini adalah untuk membedakan pengaruh jenis musim, jenis pematah angin, dan jenis tanaman yang digunakan terhadap pertumbuhan dan hasil tanaman melon dan bawang merah pada lahan pasir pantai, serta mengetahui interaksi antara jenis musim, jenis pematah angin, dan jenis tanaman terhadap pertumbuhan dan hasil tanaman melon dan bawang merah.

Penelitian ini menggunakan Rancangan Acak Kelompok Lengkap (RAKL) Petak-Petak Terbagi (*Split-Split Plot*) dengan tiga faktor dan tiga ulangan. Faktor pertama yaitu jenis musim (Kemarau dan Penghujan). Faktor kedua yaitu jenis pematah angin (Tanpa pematah angin, pematah angin plastik 1,5 m, pematah angin jagung 3 baris, pematah angin jagung sela). Faktor ketiga yaitu jenis tanaman [Tanaman peka salinitas (melon) dan tanaman tahan salinitas (bawang merah)]. Data hasil penelitian dianalisis menggunakan Uji F dan Uji lanjut DMRT pada taraf kesalahan 5%. Variabel yang diamati pada komponen pertumbuhan tanaman yaitu variabel tinggi tanaman, jumlah daun, luas daun, bobot segar akar, bobot segar batang, bobot segar daun, bobot segar bunga, bobot segar tanaman, bobot kering tanaman, jumlah cabang, jumlah anakan. Variabel yang diamati pada komponen hasil tanaman yaitu variabel bobot segar umbi, bobot segar buah, jumlah umbi, jumlah buah, volume umbi, volume buah, jumlah bunga, jumlah bunga jadi, persentase bunga jadi, dan hasil tanaman.

Hasil penelitian menunjukkan bahwa jenis musim berpengaruh nyata terhadap variabel tinggi tanaman, luas daun, bobot segar batang, bobot segar umbi, bobot segar buah, bobot kering tanaman, jumlah buah, diameter buah, volume umbi, volume buah, jumlah bunga, dan hasil tanaman. Jenis musim terbaik yaitu musim penghujan karena memiliki kadar salinitas yang lebih rendah (0,61 mS/cm) dari musim kemarau (0,74 mS/cm). Jenis pematah angin berpengaruh nyata terhadap semua variabel pengamatan kecuali variabel tinggi tanaman, jumlah cabang, dan jumlah anakan. Jenis pematah angin terbaik yaitu pematah angin plastik 1,5 m pada variabel jumlah daun (27,47 helai daun), luas daun (1116,61 cm²), bobot segar batang (18,14 g), bobot segar daun (22,60 g), bobot segar bunga (0,64 g), bobot segar tanaman (66,68 g), bobot kering tanaman (4,90 g), bobot segar umbi (24,96 g), bobot segar buah (83,35 g), volume umbi (25,11 ml), volume buah (83,08 ml), diameter umbi (1,02 cm), diameter buah (2,11), jumlah buah (0,44 buah), jumlah bunga (10,79 bunga), jumlah bunga jadi (1,11 buah), persentase bunga jadi (5,48%), dan hasil tanaman (10,13 ton/ha). Jenis tanaman

berpengaruh nyata terhadap semua variabel pengamatan kecuali variabel bobot segar daun. Jenis tanaman peka salinitas (melon) menunjukkan hasil terbaik pada variabel tinggi tanaman (61,64 cm), luas daun (786,37 cm²), bobot segar akar (1,75 g), bobot segar batang (22,04 g), bobot segar bunga (0,66 g), bobot segar tanaman (59,87 g), jumlah cabang (1,08), bobot segar buah (129,53 g), volume buah (130,30 ml), diameter buah (3,63 cm), jumlah buah (0,59 buah), jumlah bunga (13,25 bunga), jumlah bunga jadi (1,59) dan persentase bunga jadi (15,88%). Jenis tanaman tahan salinitas (bawang merah) menunjukkan hasil terbaik pada variabel jumlah daun (25,25 helai daun), bobot kering tanaman (4,58 g), jumlah anakan (8,54 anakan), bobot segar umbi (41,17 g), volume umbi (42,30 ml), diameter umbi (1,81 cm), jumlah umbi (8,79 umbi), dan hasil tanaman (9,46 ton/ha). Interaksi perlakuan 2 faktor antara jenis musim dan jenis tanaman berbeda nyata pada variabel bobot segar umbi, volume umbi, jumlah anakan, dan jumlah umbi. Interaksi perlakuan 2 faktor antara jenis pematah angin dan jenis tanaman berbeda nyata pada variabel bobot segar akar, bobot segar umbi, bobot kering tanaman, jumlah umbi dan volume umbi. Interaksi perlakuan 3 faktor antara jenis musim, jenis pematah angin, dan jenis tanaman berpengaruh nyata pada semua variabel, kecuali variabel bobot segar akar, bobot segar umbi, bobot kering tanaman, jumlah cabang, jumlah anakan, jumlah umbi, dan volume umbi. Interaksi 3 faktor menunjukkan hasil terbaik pada perlakuan musim penghujan pematah angin plastik 1,5 m tanaman peka salinitas (melon) di beberapa variabel, diantaranya yaitu tinggi tanaman (98,11 cm), jumlah daun (34,67 helai daun), luas daun (2344,69 cm²), bobot segar batang (39,52 g), bobot segar daun (28,45 g), bobot segar bunga (1,27 g), bobot segar tanaman (122,93 g), variabel bobot segar buah (333,38 g), volume buah (332,32 ml), diameter buah (8,45 cm), jumlah buah (1,75 buah), jumlah bunga (32,58 bunga), jumlah bunga jadi (3,07), dan hasil tanaman (15,81 ton/ha).

SUMMARY

Melon is one of the fruits favored by Indonesian people, as well as shallots which are often used as a spice for Indonesian cuisine. The demand for these two commodities are increased continuously, but the land for agriculture purpose is limited. Utilization marginal land of coastal sand is a solution to deal with increasingly limited agricultural land. Marginal land of coastal sand has limiting factors such as high wind speed that carrying salt which can cause salinity stress for plants. In addition, it is necessary to add soil amendments such as manure and clay to improve soil structure. The purpose of this study was to distinguish the effect of season types, windbreak types, and types of plants used on the growth and yield of melon and shallot plants on coastal land, and to determine the interaction between season types, windbreak types, and plant types on growth and yields of melon and shallot.

This study used a Completely Randomized Block Design (CRBD) of Split-Split Plots with three factors and three replications. The first factor is the type of season (dry and rain). The second factor is the type of windbreaker (without windbreaker, 1.5 m plastic windbreaker, 3 rows corn windbreaker, alley corn windbreaker). The third factor is the type of plant [salinity sensitive plants (melon) and salinity resistant plants (shallots)]. The result of the observation data were observed by means of variance and the Duncan's Multiple Range Test (DMRT) 5% test was performed. The variables observed in the plant growth component were plant height, number of leaves, leaf area, root fresh weight, stem fresh weight, leaf fresh weight, flowers fresh weight, plants fresh weight, plants dry weight, number of branches, and number of tillers. The variables observed in the plant yield components were bulb fresh weight, fruit fresh weight, number of bulb, number of fruit, bulb volume, fruit volume, number of flowers, number of fruit setting, fruit setting percentage, and plant yield.

The results showed that the type of season significantly affected the variable plant height, leaf area, stem fresh weight, bulb fresh weight, fruit fresh weight, plant dry weight, number of fruit, fruit diameter, bulb volume, fruit volume, number of flowers, and plant yield. The best type of season is the rainy season because it has a lower salinity level (0,61 mS/cm) than the dry season (0,74 mS/cm). The type of windbreaker has a significant effect on all observed variables except for plant height, number of branches, and number of tillers. The best type of windbreaker is a 1.5 m plastic windbreaker on the variable number of leaves (27.47 leaves), leaf area (1116.61 cm²), stem fresh weight (18.14 g), leaf fresh weight (22.60 g), flowers fresh weight (0.64 g), plants fresh weight (66.68 g), plants dry weight (4.90 g), bulb fresh weight (24.96 g), fruit fresh weight (83.35 g), bulb volume (25.11 ml), fruit volume (83.08 ml), bulb diameter (1.02 cm), fruit diameter (2.11), fruit number (0.44 fruit), flower number (10.79 flowers), number of fruit setting (1.11 fruits), fruit setting percentage (5.48%), and crop yield (10.13 ton/ha). The type of plant has a significant effect on all observation variables except for leaf fresh weight. Salinity-sensitive plant species (melon) showed the best results on plant height (61.64 cm), leaf area (786.37 cm²), root

fresh weight (1.75 g), stem fresh weight (22.04 g), flowers fresh weight (0.66 g), plants fresh weight (59.87 g), number of branches (1.08), fruit fresh weight (129.53 g), fruit volume (130.30 ml), fruit diameter (3.63 cm), fruit number (0.59 fruit), flowers number (13.25 flowers), the number of fruit setting (1.59) and the fruit setting percentage (15.88%). Salinity resistant plant species (shallots) showed the best results on the variable number of leaves (25.25 leaves), plant dry weight (4.58 g), number of tillers (8.54 tillers), bulb fresh weight (41.17 g), bulb volume (42.30 ml), bulb diameter (1.81 cm), bulb number (8.79 tubers), and plant yield (9.46 tons/ha). The 2-factor treatment interaction between season type and plant type was significantly different in bulb fresh weight, bulb volume, number of tillers, and number of bulb. The 2-factor treatment interaction between types of windbreaks and plant types was significantly different in the variable root fresh weight, bulb fresh weight, plants dry weight, number of bulb and bulb volume. The 3-factor treatment interaction between season type, windbreak type, and plant type had a significant effect on all variables, except root fresh weight, bulb fresh weight, plant dry weight, number of branches, number of tillers, number of bulb, and bulb volume. The interaction of 3 factors showed the best results in the rainy season treatment of 1.5 m plastic windbreakers for salinity-sensitive plants (melons) in several variables, including plant height (98.11 cm), number of leaves (34.67 leaves), leaf area (2344.69 cm²), stems fresh weight (39.52 g), leaf fresh weight (28.45 g), flowers fresh weight (1.27 g), plants fresh weight (122.93 g), fruit fresh weight (333.38 g), fruit volume (332.32 ml), fruit diameter (8.45 cm), fruit number (1.75 fruit), flowers number (32.58 flower), number of fruit setting (3,07), and crop yield (15.81 ton/ha).

