

RINGKASAN

Penelitian ini bertujuan untuk mengetahui pengaruh teknik irigasi terhadap sifat fisiologi bawang merah di lahan pasir pantai, mengetahui pengaruh jenis mulsa terhadap sifat fisiologi bawang merah di lahan pasir pantai, serta mengetahui teknik pengairan dan jenis mulsa yang mampu meningkatkan pertumbuhan dan produksi bawang merah di lahan pasir pantai. Penelitian dilaksanakan di Desa Banjarsari, Kecamatan Nusawungu, Kabupaten Cilacap.

Penelitian menggunakan metode Rancangan Acak Kelompok (RAK) dengan pola split plot design dengan main plot M (mulsa) dan sub plot irigasi (T). Percobaan ini terdiri dari kombinasi faktorial dengan tiga teknik irigasi (T), tiga bahan mulsa (M), dan tiga kali ulangan, yaitu irigasi konvensional (T_0), irigasi tetes (T_1), irigasi springkel (T_2), tanpa mulsa (M_0), mulsa jerami (M_1), mulsa plastik (M_2). Variabel yang diamati meliputi jumlah stomata (stomata), luas stomata (mm), kadar prolin ($\mu\text{mol/g}$), kadar lorofil (mg/l), tinggi tanaman (cm), panjang daun (cm), jumlah daun (helai), luas daun (cm), panjang akar (cm), jumlah akar (helai), bobot segar tanaman (g), bobot kering tanaman (g), bobot segar akar (g), bobot kering akar (g), bobot segar umbi (ton/ha), bobot kering umbi (ton/ha), bobot segar daun (g), bobot kering daun (g), jumlah umbi (umbi).

Hasil penelitian menunjukkan bahwa sistem irigasi konvensional, tetes dan springkel belum mampu meningkatkan gatra fisiologi tanaman bawang merah. Penggunaan mulsa jerami (M_1) mampu meningkatkan gatra fisiologi antara lain lebar bukaan stomata dan kombinasi perlakuan sistem irigasi dan sistem mulsa yang baik terhadap pertumbuhan adalah irigasi tetes dan mulsa jerami (T_1M_1) dalam meningkatkan tinggi tanaman, panjang daun, dan jumlah daun, sedangkan sistem irigasi dan sistem mulsa yang kurang baik yaitu irigasi tetes dan mulsa plastik (T_1M_2) dan irigasi springkel dan tanpa mulsa (T_2M_0).

Kata Kunci :lahan pasir pantai, system irigasi, system mulsa, bawang merah, pertumbuhan dan hasil

SUMMARY

This study aims determine the effect of irrigation technique to the physiological traits of onion in the sandy soil, study the effect of mulch on the physiological traits of onion in the sandy soil, as well as knowing the irrigation techniques and the type of mulch that is able increase the growth and production of onion in the beach sand land. The research was conducted in the Banjar sari village, Nusawungu Sub-District, Cilacap Regency.

The research used Randomized complete block design Design (RAK). a pattern of split plot design with the main plot M (mulch) and the sub- plot irrigation (T), and three replications, the conventional irrigation (T_0), drip irrigation (T_1), sprinkle irrigation (T_2), without mulch (M_0), straw mulch (M_1), plastic mulch (M_2). The observed variables include the stomata number (stomata), the stomata area (mm), the prolin level (umol/l), the chlorophyll conten (mg/l), the plant height (cm), the leaf lenght (cm), the leaves number (leaf), the leaf area (cm), the root lenght (cm), the roots number (pieces), the fresh plant weight (g), the dry plant weight (g), the fresh root weight (g), the dry root weight (g), the fresh tuber weight (ton/ha), the dry tuber weight (ton/ha), the fresh leaf weight (g), the dry leaf weight (g), the tuber total (tuber).

The results showed that conventional irrigation systems , drip and springkel have not been able to increase gatra onion crop physiology ,the use of straw mulch (M_1) have increased gatra fisiologi include a wide stomata and combination treatment of irrigation systems and a good mulch system on the growth is drip irrigation and mulching straw (T_1M_1) in increased plant height , leaf length and number of leaves , whereas the irrigation system and mulch systems are less well that drip irrigation and plastic mulch (T_1M_2) and irigsai springkel and without mulch (T_2M_0) .

Keyword : beach sand land, irrigation system, mulching system, onion, growht and yield