ANALISIS KEBUTUHAN DAN PRODUKTIVITAS AIR TANAMAN SEMANGKA (*Citrullus vulgaris Schard*) DENGAN IRIGASI KENDI BERDASARKAN PERBEDAAN KOMPOSISI PENYUSUN KENDI DI LAHAN KERING PINGGIR PANTAI DESA TAWUN KECAMATAN SEKOTONG

Analysis of water requirements and water productivity of watermelete plant (Citrullus vulgaris Schard) with pitcher irrigation based on differences of pitcher composition in dry land by the beach in tawun village, sekotong district

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ABSTRAK

Sistem irigasi kendi merupakan salah satu bentuk pemberian air pada tanaman melalui zona perakaran tanaman. Irigasi kendi ini dapat menghemat penggunaan air dengan cara mengatur melalui sifat porositas kendi. Tanaman Semangka berasal dari Afrika dan saat ini telah menyebar ke seluruh dunia, Daya tarik budidaya Semangka bagi petani terletak pada nilai ekonominya yang tinggi. Oleh karena itu perlu dilakukan penelitian irigasi kendi sebagai sistem penghemat air bagi tanaman semangka dengan nilai ekonomi yang lebih tinggi dan masa panen yang lebih cepat. Penelitian ini bertujuan untuk merancang sistem irigasi kendi bawah permukaan (*sub-surface irrigation*), mengetahui respons tanaman, mengetahui komposisi penyusun kendi yang paling baik untuk tanaman Semangka (*Citrullus vulgaris* Schard) pada pertanian lahan kering pinggir pantai. Metode penelitian yang digunakan adalah metode eksperimental dengan percobaan di tanah lempung. Penelitian ini menggunakan irigasi kendi (bawah permukaan) dengan 3 variasi komposisi penyusun kendi. Kendi A dengan campuran 50% tanah liat, 25% pasir, 25% dedak, kendi B dengan campuran 55% tanah liat, 20% pasir, 25% dedak, kendi C dengan campuran 55% tanah liat, 15% pasir, 30% dedak, kendi D dengan campuran 60% tanah liat, 10%pasir, 30% dedak, kendi E dengan campuran 60% tanah liat, 15% pasir, 25% dedak. Parameter yang diamati pada penelitian ini yaitu sifat fisik tanah, konduktivitas kendi, pertumbuhan tanaman, kebutuhan air tanaman dan produktivitas air tanaman. Hasil penelitian menunjukkan bahwa tekstur tanah tergolong lempung berpasir dengan kandungan liat 3,3%, kandungan debu 43,3%, dan kandungan pasir 53,3%, nilai kapasitas lapang sebesar 22,55%, nilai titik layu permanen yang didapat yaitu 8,65%, dan nilai kadar lengas yang didapat yaitu 1,68%. Nilai Konduktivitas kendi A sebesar 0,43 cm/s, kendi B sebesar 0,89 cm/s, kendi C sebesar 1,71 cm/s, kendi D sebesar 0,46 cm/s dan kendi E 0,71 cm/s. Pertumbuhan tanaman dapat dilihat dari panjang batang tanman semangka yaitu: 323,67 (cm) dan jumlah daun sebanyak 52 helai. Kebutuhan air tanaman Semangka pada periode pertumbuhan pertengahan yakni sebesar 4,04 mm/hari, dan nilai evapotranspirasi terendah terdapat pada fase akhir yaitu 2,94 mm/hari. Nilai produktivitas air tanaman Semangka pada kendi A sebesar 51,85 gram/liter, kendi C sebesar 52,59 gram/liter, kendi D sebesar 61,48 gram/liter, dan kendi E sebesar 62,22 gram/liter. Nilai tertinggi produktivitas air tanaman Semangka terdapat pada kendi B yaitu sebesar 74,07 gram/liter. Dapat disimpulkan bahwa pertumbuhan tanaman semangka paling baik terdapat pada kendi B.

Kata kunci: Semangka, irigasi, keseragaman, Kendi.

ABSTRACT

A pitcher irrigation system is a form of giving water to plants through the plant root zone. This jug irrigation can save water use by regulating the porosity of the pitcher. The watermelon plant originates from Africa and has now spread throughout the world. The attractiveness of watermelon cultivation for farmers lies in its high economic value. Therefore, it is necessary to research pitcher irrigation as a water-saving system for watermelon plants with higher monetary value and a faster harvest period. This study aims to design a sub-surface irrigation system, determine plant response, and determine the best pitcher composition for Watermelon (Citrullus vulgaris Schard) in coastal dryland agriculture. The research method used is an experimental method with experiments in clay. This study uses irrigation jugs (subsurface) with three variations of the composition of the pitcher. Pitcher A with a mixture of 50% clay, 25% sand, 25% bran. Pitcher B with a mixture of 55% clay, 20% sand, 25% bran. Pitcher C with a mixture of 55% clay, 15% sand, 30% bran. Pitcher D with a mixture of 60% clay, 10% sand, 30% bran. Pitcher E with a mixture of 60% clay, 15% sand, 25% bran. The parameters observed in this study were soil physical properties, jug conductivity, plant growth, plant water requirements and plant water productivity. The results showed that the soil texture was classified as sandy loam with 3.3% clay content, 43.3% silt content, and 53.3% sand content, the field capacity value was 22.55%, the permanent wilting point value obtained was 8, 65%, and the moisture content value obtained is 1.68%. The conductivity value of pitcher A is 0.43 cm/s; pitcher B is 0.89 cm/s; pitcher C is 1.71 cm/s; pitcher D is 0.46 cm/s pitcher E is 0.71 cm/s. The plant's growth can be seen from the length of the stem of the clover plant, namely: 323.67 (cm) and the number of leaves as many as 52 strands. The water requirement of Watermelon plants in the mid-growth period is 4.04 mm/day, and the lowest evapotranspiration value is in the final phase, which is 2.94 mm/day. The water productivity value of the Watermelon plant in pitcher A is 51.85 grams/litre, pitcher C is 52.59 grams/litre, pitcher D is 61.48 grams/litre, and pitcher E is 62.22 grams/litre. The highest value of Watermelon plant water productivity is in jug B, which is 74.07 grams/litre. It can be concluded that the best watermelon plant growth is found in jug B.

Keywords: *Watermelon, irrigation, uniformity, pitcher*