KAJIAN INTEGRASI KONSENTRASI PUPUK KANDANG DAN METODE IRIGASI TERHADAP SIFAT KIMIA TANAH PADA BUDIDAYA SAWI HIJAU (*Brassica juncea* L.) DI LAHAN PASIRAN PANTAI SAMAS, BANTUL, DIY

INTISARI

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Lahan pantai termasuk ke dalam kategori lahan marginal karena kandungan unsur hara yang rendah dan keterbatasan air maka diperlukan pembenah tanah dan teknologi irigasi sehingga menjadi lahan produktif pertanian. Tujuan penelitian ini membandingkan interaksi antara jenis irigasi serta konsentrasi pupuk kandang terhadap sifat kimia tanah serta menemukan hubungan antara EC tanah dan kadar lengas tanah pada lahan pasiran pantai Bantul. Penelitian menggunakan demplot dengan ukuran 1 x 1 m, 2 perlakuan irigasi (Sprinkler/Sp dan Kabut/Kb), 5 konsentrasi pupuk kandang (kontrol/0, 5 kg/m^2, 15 kg/m, 10 kg/m^2, dan 15 kg/m^2). Komoditas yang ditanam adalah sawi hijau (*brassica juncea* L.) dan dilakukan dua kali penanaman. Total ada 30 demplot percobaan dalam sistem Rancangan Acak Kelompok (RAK). Parameter yang diuji meliputi kandungan C-Organik, pH tanah, *Electrical Conductivity* (EC), dan kadar lengas tanah. Data dianalisis melalui uji normalitas dan homogenitas ($p > 0,05$), dilanjutkan dengan uji ANOVA ($p < 0,05$), serta model matematika Michaelis-Menten untuk parameter C-Organik. Penelitian ini membuktikan bahwa konsentrasi pupuk memberikan pengaruh nyata terhadap sifat kimia tanah. C-Organik dapat digambarkan pola peningkatannya dengan model Michaelis-Menten, SSE pada irigasi sprinkler 0,0004 dan irigasi kabut 0,000895. Konsentrasi pupuk kandang mempengaruhi nilai EC dan C-Organik dengan hubungan negatif antara kadar lengas tanah dan nilai EC. Penelitian ini merekomendasikan konsentrasi pupuk kandang 15-20 kg/m^2 untuk memperbaiki kimia tanah pasiran karena mampu meningkatkan C-organik. Jenis irigasi sprinkler dan kabut dapat dipilih karena tidak memberikan pengaruh nyata terhadap C-organik, pH, dan EC tanah. Nilai EC dan lengas tanah menunjukkan hubungan negatif.

Kata Kunci: *Brassica juncea* L., irigasi kabut, irigasi *sprinkler*, pupuk kotoran hewan, pertanian lahan pantai

A STUDY OF INTEGRATION OF MANURE CONCENTRATION AND IRRIGATION METHODS ON SOIL CHEMICAL FEATURES OF GREEN MUSTARD (*Brassica juncea* L.) CULTURE ON THE SANDY SOIL SAMAS BEACH, BANTUL, DIY

ABSTRACT

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Coastal land is categorized as marginal land due to low nutrient content and limited water, so soil conditioners and irrigation technology are needed to make it productive agricultural land. The purpose of this study was to compare the interaction between irrigation type and manure concentration on soil chemical properties and to find the relationship between soil EC and soil moisture content on pasiran land of Bantul beach. The research used a demonstration plot with a size of 1 x 1 m, 2 irrigation treatments (Sprinkler/Sp and Mist/Kb), 5 concentrations of manure (control/0, 5 kg/m^2, 15 kg/m^2, 10 kg/m^2, and 15 kg/m^2). The commodity planted was green mustard (brassica juncea L.) and two plantings were conducted. There were a total of 30 experimental demonstration plots in a Randomized Block Design system. Parameters tested included C-Organic content, soil pH, Electrical Conductivity (EC), and soil moisture content. Data were analyzed through normality and homogeneity tests ($p > 0.05$), followed by ANOVA test ($p < 0.05$), and Michaelis-Menten mathematical model for C-Organic parameters. This study proves that fertilizer concentration has a significant effect on soil chemical properties. C-Organic can be described the pattern of increase with the Michaelis-Menten model, SSE in sprinkler irrigation 0.0004 and fog irrigation 0.000895. Manure concentration affected EC and C-Organic values with a negative relationship between soil moisture content and EC values. This study recommends a manure concentration of 15-20 kg/m^2 to improve sandy soil chemistry because it can increase C-organic. Sprinkler and mist irrigation types can be selected because they do not significantly affect soil C-organic, pH, and EC. EC and soil moisture values showed a negative relationship.

Keywords: *Brassica juncea* L., mist irrigation, sprinkler irrigation, animal manure fertilizer, coastal land farming