ANALISIS POLA PEMBASAHAN TANAH SANDY LOAM DAN LOAM UNTUK DESAIN IRIGASI TETES

INTISARI

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Penelitian ini bertujuan untuk menggambarkan *front* pembasahan dan ditribusi lengas tanah *sandy loam* dan *loam* serta menghitung volume pembasahan tanah untuk perancangan jarak emiter dan waktu pemberian air irigasi. Penentuan pola pembasahan dilakukan dengan mengkaji lebar pembasahan dan kedalaman pembasahan. Pengamatan pola pembasahan menggunakan *camera* atau visual dan pengamatan distribusi lengas menggunakan sensor berkapasitansi. Pengamatan dilakukan pada bak kaca dengan ukuran 40 cm x 40 cm x 40 cm dengan ketebalan 10 cm. Hasil penelitian diperoleh *front* pembasahan *sandy loam* maksimum pada lebar pembasahan 39,7 cm dan kedalaman sebesar 25,0 cm. Sedangkan tanah *loam*pada kedalaman pembasahan 16,7 cm dan lebar pembasahan 40 cm. Berdasarkan uji T-*test*lebar dan kedalaman pembasahan pada tanah *sandy loam* dan *loam* tidak beda nyata. Air irigasi 2,025 cm^3 selama 1,5 jam mampu membasahi tanah *sandy loam* 19.988 cm^3dengan kebasahan 0,13%vol, sedangkan tanah *loam* 12.662 cm^3 dengan tingkat kebasahan 0,28%vol .

Kata Kunci: tanah *sandy loam* dan *loam*, pola pembasahan, volume pembasahan, irigasi tetes

SOIL PATTERNS ANALYSIS OF SANDY LOAM AND LOAM SOIL TEXTURE FOR DRIP IRRIGATION DESIGN

ABSTRACT

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This study aimed to describe wetting front and soil moisture distribution of sandy loam and loam soil texture and to calculate the soil wetting volume for design of emitter distance and time of the drip irrigation design. Determination of wetting pattern was conducted by examining the width and depth of wetting. Observation of wetting pattern used camera or visual, while moisture distribution observed by using capacitance sensor. Observations were made on a glass tube sized of 40 cm x 40 cm x 40 cm with the thickness of 10 cm. This researh revealed that the maximum wetting front of sandy loam was 39,7 (width) and 25,0 cm (depth). While,the loam soil texture had dimension of wetting 40 cm (width) and 16,7 cm (depth). Based on the T-est, the width and depth ofboth soil texture were not significantly different. Irrigation 2,025 cm^3 during 1,5 hours generated soil wetting volume of sandy loam19.988 cm^3, while loam texture 12.662 cm^3. The soil mositure rate for sandy loam soil moisture was 0.13%vol and loam was 0.28% vol.

Keywords:sandy loam and loam soil, wetting pattern, wetting volume, drip irrigation