

KEBUTUHAN AIR UNTUK PENGOLAHAN TANAH PADA DEMPLOT MODERNISASI IRIGASI BERDASARKAN TEBAL GENANGAN DAN DAMPAKNYA TERHADAP DRAFT PEMBAJAKAN

INTISARI

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Penelitian ini bertujuan untuk menghitung kebutuhan air pengolahan tanah sawah pada berbagai tebal genangan, dan mengkaji pengaruhnya terhadap draft pembajakan. Penelitian ini dilakukan di petak sawah *demonstration plot* (demplot) Modernisasi Irigasi, yang berada di Desa Prasutan, Kecamatan Ambal, Kabupaten Kebumen, Jawa Tengah. Demplot dibagi menjadi empat petak, sesuai dengan variasi tebal genangan air irigasi. Variasi tebal genangan yang digunakan adalah Pd0, Pd1, Pd2, dan Pd3 yang besarnya secara berturut-turut adalah 0 mm, 5 mm, 30 mm, dan 74 mm. Variasi tebal genangan yang diberikan menentukan besarnya kebutuhan air pengolahan tanah serta draft pembajakan. Hasil penelitian menunjukkan bahwa draft pembajakan menurun seiring bertambahnya kebutuhan air untuk pengolahan tanah namun laju penurunannya semakin melambat. Kebutuhan air pengolahan tanah terbesar didapatkan dari variasi Pd3 yaitu 198 mm, sedangkan yang terkecil didapatkan dari variasi Pd0 yaitu 112 mm. Draft pembajakan terbesar didapatkan dari variasi Pd0 yaitu 1,398 kg/cm², sedangkan yang terkecil didapatkan dari variasi Pd2 yaitu 1,258 kg/cm². Variasi yang umum digunakan petani adalah variasi Pd3. Dengan mengganti variasi Pd3 ke Pd2 dapat dilakukan penghematan air sebanyak 29,7%.

Kata kunci: kebutuhan air pengolahan tanah, draft pembajakan

**TILLAGE WATER REQUIREMENT IN IRRIGATION
MODERNIZATION DEMONSTRATION PLOT BASED ON WATER
PUDDLE THICKNESS AND ITS IMPACT ON PLOWING DRAFT**

ABSTRACT

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The aims of this research were to calculate the water requirement for tillage in wetland paddy fields at various water puddle thickness, and examine its effect on the plowing draft. This research was conducted in the irrigation modernization demonstration plot, located in Prasutan Village, Ambal District, Kebumen Regency, Central Java. The demonstration plot was divided into four treatments, based on the variations in the water puddle thickness. The variations used for the water puddle thickness were Pd0, Pd1, Pd2, and Pd3 which thickness were 0 mm, 5 mm, 30 mm, and 74 mm, respectively. The variations of the water puddle thickness determines the amount of water requirement for tillage and also the plowing draft. The results showed that the plowing draft decreases as the water requirement for tillage increases with lower rate of decrease. The largest water requirement for tillage was obtained from the Pd3 variation, which was 198 mm, while the smallest was obtained from the Pd0 variation, which was 112 mm. The largest plowing draft was obtained from the Pd0 variation, which was 1,398 kg/cm², while the smallest was obtained from the Pd2 variation, which was 1,258 kg/cm². The variation commonly used by farmers is the Pd3 variation. By changing the variation from Pd3 to Pd2, it can save water as much as 29,7%.

Keyword: tillage water requirement, plowing draft