

Effects of Tillage Equipment on Moisture Characteristic Curve of Dominant Paddy Soil in Guilan Province

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Abstract

The common method of puddling is using a conventional tiller which requires long time of soil operations. In this study, the effects of tillage equipment on moisture characteristic curve of a paddy soil were investigated. The treatments included tillage equipment (T_1 : conventional tiller, T_2 : rotary puddler, T_3 : cone puddler, T_4 : tractor mounted rotovator) and number of puddlings (P_1 : puddling once, P_2 : puddling twice, P_3 : three times'puddling and P_4 : four times'puddling). The results showed that at saturation point, tractor mounted rotovator presented the highest moisture content. At field capacity and permanent wilting point, the cone puddler showed the highest moisture value. The two newly made units held more moisture and saved water. In different tillage equipment, increasing the number of puddling reduced soil moisture. Available moisture in the soil without tillage (control) was less than in soils under rotary puddler and cone puddler.

Keywords: Paddy fields, Tillage equipment, Number of puddling, Cone puddler, Rotary puddler.

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