

Sureeporn Khemmook 2009: Effects of Soil Moisture Content on Water Table under Different Land Uses at Ban Thung Soong Village, Ao Luek District, Krabi Province, Thailand. Master of Science (Watershed and Environmental Management), Major Field: Watershed and Environmental Management. Thesis Advisor: Associate Professor Wicha Niyom, Ph.D. 130 pages.

Study on effects of soil moisture content (SMC) affected on water table (WT) under different land use practices (oil palm plantation, para rubber plantation and mixed fruit orchard) was investigated at Ban Thung Soong, Ao Luek district in Krabi Province. SMC was studied by the gravimetric method expressed as percent of dry soil at various soil depth levels i.e., 0-25, 25-50, 50-75 and 75-100 cm, respectively. Water table (WT) was monthly measured to determine level of ground water table in shallow wells monthly during November 2006 to October 2007. The objectives of this study were to observe the dependence of monthly SMC on water table levels in different seasons in each land use types, to study the changing of water in shallow water wells.

Results showed that mixed fruit orchard had the highest SMC at all levels of soil depth while oil palm plantation had the lowest SMC. Water table under mixed fruit orchard was found the highest and para rubber plantation had been the lowest.

In dry seasons, the linear relationship between SMC and WT was found by which the  $R^2$  of mixed fruit orchard, oil palm plantation and para rubber plantation were 0.98, 0.87 and 0.80 respectively. In wet season, the relationship was however insignificant.

And in dry seasons, the highest value of relationship between total rainfall 5 days before data collection and WT. The  $R^2$  of mixed fruit orchard, oil palm plantation and para rubber plantation were 0.98, 0.95 and 0.94 respectively.

The relationship of SMC and WT in dry season was highly significant in period lowest SMC and water table. Ground cover such as legume (*Pueraria phaseoloides*) and short grass should be used to protect water in soil and water table to decrease gradually in dry season.

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