

Thesis Title Available Soil Moisture Simulation Model  
for Some Upland Crops

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#### ABSTRACT

The available soil moisture simulation model for some upland crops is an deterministic model in the aspect of hydrology. The principle model introduced to be modified is crop-soil-water balance model.

The model, consists of three sub-models which are Infiltration Model, Actual Evapotranspiration Model and Capillary Rise Model, is used to simulate available soil moisture by defining the available soil moisture between the permanent wilting point (pwp) and field capacity (pfc).

The model is utilized to simulate the available soil moisture of upland crop area. The employed data is the actual data which is observed by the experimental station of Royal Irrigation Department.

The model was translated into computer language, Turbo Pascal, for micro computer (16 bit). The result is shown in tables and graphs.

In this study two solutions for adjusting the parameters which are manual adjustment and automatic adjustment are used to calibrate the model. The correlation coefficient and the goodness of fit test are used to compare between the simulated available soil moisture and the actual soil moisture.

The model is available to simulate for various location and different growth period. The application for other upland crops is very convenient and the users can adjust the parameters by themselves.