



The estimation of groundwater recharge is very important in the development of the groundwater resource, especially in the areas where surface water sources are scarce. There many methods of estimating recharge; the soil water balance method, the groundwater table fluctuation method and the use of tracers being the ones commonly used. The soil water balance method is a method that is applicable in most climatic conditions.

One of the important parameters that needs to be estimated in the soil water balance method is the actual evapotranspiration, and this parameter is usually estimated from the pan evaporation values using different models. These models depend on the moisture content, type of crop, type of soil and on the climate.

One such model known as the Penman-Grindley model has been found to perform well in the climatic, soil and vegetative conditions in the Untied Kingdom. However, no such information is available for the conditions in the dry zone of Sri Lanka this paper determines the effect of using different models to estimate actual evapotranspiration on the estimation of recharge with a soil water balance.

The results obtained indicate that there is no significant difference (at 5% significance) between the estimates of recharge obtained at a particular study location with the four different models. Therefore, it is concluded that to estimate recharge with a soil water balance in the dry zone of Sri Lanka, any of the models can be safely used to estimate actual evapotranspiration without significant differences resulting among recharge estimates.