

**Preliminary Study of evaporation and transpiration in Dry-Evergreen forest
of Sakaerat Experiment Station**

(Amphoe Pak Thong Chai, Changwat Nakkon Ratchasima)

SANGA SABHASRI, KASEM CHUNKEO, CHOOMPHOL NGAMPONGSAI.

Kasetsart University, 1968.

ABSTRACT

Under the conditions of the experiments, i.e. in dry-evergreen forest environment on sunny days in the rainy season when soils are saturated, it appears:

(1) That following clear cutting, evaporation from the free soil surface (3.73×10^{-2} cm/h) is higher than the transpiration rate of the former forest cover (1.17×10^{-2} cm/h).

(2) That evaporation and transpiration rate vary inversely with atmospheric humidity and directly with air temperature. (Water losses were greatest when the air temperature was above 22°C and humidity below 88 per cent; at lower temperatures and higher humidities water losses were very low.)

(3) That in a cleared area, evaporation from a free soil surface increases rapidly early in the day until the surface soil particles dry out, the rate then decreases until surface soil moisture is reinforced from ground water, when the evaporation rate increases again.

(4) That evaporation from such a free soil surface occurs only in the daytime, with higher rates on sunny days.

(5) That transpiration of leaves in the crown (equivalent to leaves exposed in the clearing) is at a higher rate than below the canopy.

(6) That the rate of transpiration depends on the tree species, its root system and water available in the soil.

It is suggested that additional studies be made to examine: (1) monthly and annual evaporation, (2) transpiration of individual species in the dry-evergreen forest, (3) effect of cutting on micro-climate phenomena, (4) relationship between physiological characteristics and transpiration in some tree species, and (5) determination of thermal conductivity, heat capacity and heat flux density in soils by non-stationary methods.