THE EXPRESSION OF C COEFFICIENT AS THE FUNCTION OF LAND COVERING CHARACTERISTICS, AVERAGE RAINFALL INTENSITY, AND INITIAL SOIL MOISTURE CONTENT

(Case Study in Watujali and Silengkong Watersheds)

ABSTRACT

The research aims at modeling the equation showing the characteristics of land covers (manifested as stemflow, throughfall, interception), average rainfall intensity, and initial soil moisture content.

The research was done in two similar watersheds, that are Watujali and Silengkong watersheds, Gombong, Kebumen, Central Java. The collected data are the data of stemflow, throughfall, interception, average rainfall intensity, and initial soil moisture content. To discover the significant relationships, the correlation analysis was used, meanwhile regression analysis was applied to develop the models.

The findings of this research show that the factors which significantly influence the C coefficient of Silengkong Watershed are interception and the initial soil moisture content, while for Watujali Watershed are stemflow, throughfall, and interception. The equation of Silengkong Watershed :

$C_{silengkong}$ = - 0.134 SF + 0.004 TF + 0.001 Int + 0.138 Irerata + 0.280, and

$C_{silengkong}$ = - 0.2661 KL + 2.0094

The equation of Watujali Watershed :

$\text{Log } C_{watujali}$ = -0.355 Log SF + 1.247 Log TF + 1.132 Log Int + 0.531 Log Irerata – 3.709

Key Words : C coefficient, land covering characteristics, average rainfall intensity, initial soil moisture content, correlation, regression