

HUBUNGAN ALIRAN TEMBUS (*THROUGHFALL*) DAN ALIRAN BATANG (*STEMFLOW*) DENGAN TEBAL HUJAN DAN LAMA HUJAN DI HUTAN ALAM (IUPHHK PT SARI BUMI KUSUMA KALIMANTAN TENGAH)

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INTISARI

Proses jatuhnya air hujan ke lantai hutan melalui tiga cara yaitu, tetesan air yang jatuh langsung ke permukaan tanah, melalui sela-sela daun (aliran tembus) dan mengalir ke bawah melalui batang pohon (aliran batang). Besarnya aliran tembus dan aliran batang ini dipengaruhi oleh besarnya tebal hujan dan karakteristik pohon. Penelitian ini bertujuan untuk mengetahui rata-rata aliran tembus dan aliran batang serta mempelajari hubungan antara karakteristik hujan terhadap aliran tembus dan aliran batang. Adapun obyek dari penelitian ini di hutan alam Km 52 IUPHHK PT Sari Bumi Kusuma Propinsi Kalimantan Tengah.

Dalam penelitian ini parameter-parameter yang diukur adalah karakteristik hujan yang dicirikan oleh lama hujan (menit), tebal hujan (mm), aliran tembus (mm), aliran batang (mm) serta karakteristik tegakan yang dicirikan oleh jenis pohon, tinggi pohon, diameter batang, tinggi batang bebas cabang, tebal tajuk, diameter tajuk dan jumlah pohon di dalam PUP. Pengukuran masing-masing parameter tersebut dilakukan pada Agustus 2010 hingga September 2010. Lama hujan diukur manual dengan jam tangan, tebal hujan diukur dengan ombrometer, aliran tembus diukur dengan ombrometer dan aliran batang diukur dengan melilitkan karpet talang pada batang pohon dengan alat penampung menggunakan drum. Aliran batang diperoleh dengan cara membagi volume aliran batang yang tertampung dari aliran batang dengan luas proyeksi tajuk pohon. Untuk mengetahui hubungan aliran tembus dan aliran batang dengan tebal hujan dan lama hujan dipergunakan analisis regresi linier dan analisis linier berganda.

Selama penelitian diperoleh 34 kejadian hujan dengan variasi tebal hujan antara 0,6 mm hingga 55,6 mm, lama hujan antara 25 menit hingga 1.048 menit, aliran tembus antara 0,23 mm hingga 52,93 mm serta aliran batang antara 0,002 mm sampai dengan 0,970 mm. Hasil analisis linier berganda menunjukkan bahwa tebal hujan dan lama hujan mempunyai hubungan yang nyata terhadap aliran tembus ataupun aliran batang. Selanjutnya dari hubungan aliran tembus dengan tebal hujan (X_1) dan lama hujan (X_2) diperoleh persamaan taksiran aliran tembus sebagai berikut :

$$(Y_{tf} = - 0,889 + 0,727 X_1 + 0,005 X_2)$$

Demikian juga hubungan aliran batang dengan tebal hujan (X_1) dan lama hujan (X_2) diperoleh persamaan taksiran aliran batang sebagai berikut :

$$(Y_{sf} = - 0,023 + 0,011 X_1 + (9,077+10^{-5}) X_2)$$

Kata kunci : Aliran tembus, Aliran batang, Tebal hujan dan Lama hujan.

**THE RELATIONSHIP BETWEEN THROUGHFALL AND STEMFLOW
WITH RAINFALL AND LENGTH OF RAINFALL IN A NATURAL
FOREST (IUPHHK PT SARI BUMI KUSUMA CENTRAL
KALIMANTAN)**

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ABSTRACT

Rainfall falls to the forest floor in three processes, water that falls straight to the earth's surface through gaps in the leaves (throughfall) and flow down tree trunks (stemflow). The intensity of throughfall and stemflow is effected by the intensity of rainfall and tree characteristics. This research aimed to observe and ascertain average throughfall and stemflow and also to study the relationship between rainfall characteristics and throughfall and stemflow. The object of this research was the natural forest at KM 52 IUPHHK PT Sari Bumi Kusuma Central Kalimantan.

The parameters measured in this research were rainfall characteristics including, length of rainfall (minutes), amount of rainfall (mm), throughfall (mm), stemflow (mm), and also stand characteristics including type of trees, height of trees, diameter of trees, height of trunk free of branches, crown thickness, crown diameter, crown density, and number of trees is in a plot. Measuring of each parameter was carried out starting in August 2010 until September 2010. The time length of rainfall was measured using a watch, amount of rainfall and throughfall was measured using an ombrometer, and stemflow was measured by folding a champfer carpet around the trunk of the tree with a drum to catch the water. Stemflow was attained by deviding the volume of collected stemflow by the tree crown projected area. To find out the relationship between throughflow and stemflow with amount and time length of rainfall, the linear regression analysis and double linear analysis were used.

It rained 34 times during the research periode with amount of rain varying from 0.6 mm to 55.6 mm, time length of rainfall varying from 25 minutes to 1,048 minutes, throughfall varying from 0.23 mm to 52.93 mm, and stemflow varying from 0.002 to 0.970 mm. The results of the double linear analysis show that there is a clear relationship between the amount and time length of rainfall with throughfall or stemflow. From the relationship between throughfall and the amount (X_1) and time length of rainfall (X_2), the following formula was attained:

$$(Y_{tf} = - 0,889 + 0,727 X_1 + 0,005 X_2)$$

From the relationship between stemfall and the amount (X_1) and time length of rainfall (X_2), the following formula was attained:

$$(Y_{sf} = - 0,023 + 0,011 X_1 + (9,077+10^{-5}) X_2)$$

Key words: throughfall, stemfall, amount of rainfall and time length of rainfall