GENERAL INFORMATION

author(s)	Funwi J
year	2007
English title	Analysis of tree-water relations in a forest ecosystem based on the dynamic measurement of sap flow and stem diameter variations
original title	
reference	Msc thesis, Ghent University & Free University of Brussels, Ghent & Brussels
pages	64
type	dissertation (d2)
ecosystem service	regulating – water cycle
keywords	
taxa	*Fagus sylvatica*
project	
supervisor	Lemeur R, Steppe K
institution	Laboratory of Plant Ecology
document	hardcopy
data	

MATERIALS & METHODS

study area	5n (scientific zone)
time period	April–August 2005
goal	Determination of the effect of environmental factors (net radiation, vapour pressure deficit, air temperature, soil temperature, relative humidity, soil water potential) on the diurnal and seasonal patterns of transpiration (sap flow) and stem diameter variation in a beech tree. Characterization of swelling and shrinking of the beech stem.
set-up	beech tree next to the measuring tower
data collection	sap flow at branch (d 13.1 mm, height 21 m) & stem level (d 68 cm, h 1.3 m) with heat balance sensors stem diameter with linear variable displacement transducer (h 1.3 m) meteorology: air temperature (level 0, 3, 5), net radiation (level 5), relative humidity (soil surface), PAR (level 5) soil: temperature (- 10 cm), soil water potential (- 40 cm)
remarks	the soil water potential measurements were not recorded

RESULTS

	May	June	July
transpiration (kg)	3283	5185	3598
water uptake (kg)	3298	5366	3598
internal storage water use (kg)	414	857	574
net radiation (MJ/day)	11	13.68	10.09
vapour pressure deficit (kPa)	1.17	0.73	0.41

Stem diameter growth was 30 micrometer/day.