

GENERAL INFORMATION

author(s)	Muys B
year	1993
English title	Synecological evaluation of the earthworm activity and litter decomposition in forests of the Flemish region: contribution to sustainable forest management
original title	Synecologische evaluatie van regenwormactiviteit en strooiselafbraak in de bossen van het Vlaamse Gewest als bijdrage tot een duurzaam bosbeheer
reference	PhD thesis, Ghent University, Ghent
pages	335
type	dissertation (d1)
ecosystem service	supporting – soil formation and fertility
keywords	soil fauna – litter – tree species effect
taxa	<i>Quercus palustris</i> , <i>Tilia platyphyllos</i> , <i>Prunus avium</i> , <i>Alnus glutinosa</i> , <i>Fraxinus excelsior</i> , <i>Quercus robur</i>
project	PhD thesis Muys
supervisor	Lust N
institution	Laboratory of Forestry
document	hardcopy (copies with Evy Ampoorter)
data	

MATERIALS & METHODS

study area	3b, 3c, 5h, 5k, 5m, 5n
time period	1987-1989
goal	inventory of the biological soil activity and nutrient content of the soils in Flemish forests: biomass and composition of the earthworm community & rate of litter decomposition
set-up	25 forest stands through Flanders: 83 variables measured effect of afforestation with different tree species on a former pasture effect of tree species and liming in an old forest with degraded soils (Zoniënwoud)
data collection	83 variables: <ul style="list-style-type: none">- physical soil characteristics- nutrient content of litter and soil- litter decomposition rate- earthworm biomass
remarks	The ash plot in stand 5n was also included in Muys_1986_Msc and was part of the level II monitoring network between 1991-2003.

RESULTS

The soil of 75 % of the Flemish forest area is degraded, chemically and biologically, i.e., almost all stands of beech, pedunculate oak, and coniferous trees on sandy and loamy soils. These soils have a pH < 4, a CEC < 30 %, and lack all endogeic and anecic earthworm species.

The studied stands could be classified into two groups: mull humus + high earthworm activity, moder or mor humus + low earthworm activity. The development of both types is mainly caused by tree species, but stand history and soil clay content are also important. The climate, sand and loam content, drainage class, and light availability are less influential.