

GENERAL INFORMATION

author(s)	Van Miegroet H
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MATERIALS & METHODS

study area	
time period	July 1976–August 1977
goal	Gain insight into the social differentiation of tree species. <ul style="list-style-type: none"> - When does the social differentiation start in a sycamore regeneration that established under a canopy? - What causes the social differentiation? - How does the social differentiation change? - Are social classes easily to distinguish in the early stages of stand development?
set-up	<ul style="list-style-type: none"> - Groups of densely regenerated sycamore: Aelmoeseneie (14), Meerdael (6) - Canopy of oak, ash, beech
data collection	<p>3 blocks (Gontrode), 3 blocks (Heverlee) with 150 sycamore individuals</p> <p>5 sample individuals per height class (Gontrode): age, morphological characteristics, biomass, physiology</p> <p>circular plots around a dominant individual with radius = sycamore height / 2 (Gontrode: 3, Heverlee: 3): distance to dominant, age, biomass, growth, morphology</p> <ul style="list-style-type: none"> - Dominant and dominated class <p>8 pairs of trees = dominant and dominated tree</p> <ul style="list-style-type: none"> - Morphology, growth, physiology <p>variables measured:</p> <p>height, diameter at mid-height, cambial surface, branchiness, age (tree rings, growth flushes), dry weight, leaf area, respiration intensity, chlorophyll content,</p>
remarks	

RESULTS

The mean regeneration period was 10 years, and consisted of three stadia: preregeneration (low density), main regeneration (3 years, high density), postregeneration (additional seedling establishment).

Stem density decreased over time and with increasing height of the sycamore individuals.

The overstorey suppressed height growth of sycamore and slowed down the social differentiation. Diameter growth was small. Still, a relatively high number of well-developed sycamore seedlings can be found.

Dominant seedlings often are the result of the preregeneration, which gave them a head start in height growth. Because of their age, height, and vitality, the difference between dominant and dominated seedlings will further increase during the development. Dominated seedlings will most often remain dominated.

Chlorophyll concentration is similar for dominant/dominated seedlings, but the total amount of chlorophyll is higher for dominant seedlings as their leaf biomass is larger. Dominant seedlings have a larger cambial surface, height growth, wood and leaf biomass, leaf area. Dominated seedlings will fall behind.