

GENERAL INFORMATION

author(s)	Lust N, Speleers L
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English title	The establishment of red oak and pedunculate oak seedlings in the experimental forest of Aelmoeseneie at Gontrode (Belgium)
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project	Msc thesis Speleers
supervisor	Lust N
institution	Laboratory of Forestry
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data	

MATERIALS & METHODS

study area	5g, 5i, 5j, 5l (& 5c, 5d, 5f, 5n, 6a for seed rain)
time period	1986
goal	Find out how natural regeneration of oak can be stimulated.
set-up	10 mixed stands: seed rain of red and pedunculate oak under canopy vs. forest edge: growth of seedlings
data collection	<u>seed rain</u> <ul style="list-style-type: none"> - 15 traps with \varnothing 37.5 cm (red oak) stand 6a, 19 traps (pedunculate oak) stand 5c: aborted vs. full-grown acorns (seemingly healthy or worm-eaten) - 5 plots of 0.5 m² in each of the ten stands: nut shell, cupule, aborted acorn, fully-grown acorn (rotten, worm-eaten, normal, germinating, with radicle) <u>morphological analysis of 1-, 2-, 3-year-old seedlings</u> <ul style="list-style-type: none"> - 20 seedlings of both red and pedunculate oak at the shaded/partly-shaded sites - 50 1-year-old, 20 2-year-old, 20 3-year-old seedlings
remarks	Speleers 1987 (Msc thesis)

RESULTS

Seed rain

Red oak seed rain started at the end of August and continued until the beginning of October. Seed rain of pedunculate oak mainly occurred during September and October. Almost 1/4 of the red oak acorns was aborted vs 2/5 for pedunculate oak. Moreover, 60 % of pedunculate oak acorns were worm-eaten whereas most red oak acorns were healthy. The red oak acorns seem to be of good quality.

Seed rain is highly variable between the stands. The number of aborted acorns was high, for both species. By December, most red oak acorns were still healthy while those of pedunculate oak were mostly unhealthy. Many acorns had already germinated by December.

Seedling growth

For pedunculate oak, there were no differences between 1-year-old seedlings growing in shaded/non-shaded conditions. Red oak seedlings in shaded conditions have a slightly smaller diameter, a larger leaf

area. There are no significant differences in biomass. Red oak seedlings seem to grow better under a canopy than at the forest edge; there is no real difference between the two sites for pedunculate oak. Seedling growth is limited during the 2nd and 3rd year (growth crisis), which is most apparent for red oak. More seedlings of pedunculate oak still have the acorn attached during the third year. Pedunculate oak more often forms multiple roots because the species starts to germinate earlier and is more easily damaged.

Opening up the crown after one year seems vital for the seedling growth.