

GENERAL INFORMATION

author(s)	Tabari-Kouchaksaraei M
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MATERIALS & METHODS

study area	scientific zone (5n)
time period	1995-1998
goal	Identification of the factors that inhibit regeneration of ash and formulation of forest management measures.
set-up	<ul style="list-style-type: none"> - monitoring of the natural regeneration in 40 permanent sample plots (4 m x 5 m) in the oak-beech and the ash stand for 3 years - survival and growth of ash seedlings in 3 humus types (typical mull, acid mull, mull moder) under a closed canopy (2.5 % light) - effects of light and humus on survival and growth of ash potted seedlings - germination and establishment restraints of broadleaves in canopy gaps - regeneration dynamics in an alluvial dense ash stand based on two plots of 14 m x 60 m
data collection	<ul style="list-style-type: none"> - seedlings tagged in September 1995, resampled in September 1997 and 1998 - 541 2-month old ash seedlings in 10 plots of 1m x 2 m: survival rate between April 1996 – November 1996 – April 1997 – November 1997 - 250 ash seedlings of 10-40 cm tall in 12 plots of 2 m x 3 m: height growth, collar diameter growth, number of leaves/branches/growth flushes (September 1995&September 1997, 116 of the 250 seedlings) + root length, root/shoot ratio on (September 1997, 30 seedlings) - 12 ash seedlings of 20–30 cm tall: cross section at stem base examined with a microscope - 300 3-month old seedlings planted in pots with 3 types of humus and 5 light treatments (2.5, 10, 18, 28, 92 %): survival and height growth - 4 gaps of 20, 30, 40, and 55 m² (formed between 1985–1990) in the ash stand + 4 gaps of 35, 45, 50, and 60 m² (1990–1995) in the oak-beech stand: count and height of regeneration, vegetation records - summer 1996: all trees, shrubs, regeneration, seedlings inventoried in the two plots along the brook in the ash stand
remarks	

RESULTS

Regeneration of the main tree species, i.e., oak, ash, and beech, is not successful. Seedlings-of-the-year occur for ash, but they do not survive into the taller regeneration classes. Only sycamore shows successful regeneration, mainly in the ash stand in which old canopy gaps occur.

In general, humus type did not affect growth and survival of ash seedlings. The soil conditions, i.e., the Ca, Mg, K, or P content, were also not the limiting factor. The low light availability under the closed canopy limited the survival of the ash seedlings. Height growth did increase with light availability and humus nutrient content in the pot experiment.

In the canopy gaps in the ash stand, regeneration of tree species was limited because of the dense herb layer. In the oak-beech stand, ash, oak, sycamore and beech germinated in the thick litter layer, but were not able to establish because of the dense herb layers.