

**THE ROOTS RESEARCHES NATURAL SEED RENOVATION OF OAK
(*QUERCUS ROBUR* L.) IN THE WET OAK-PINE FORESTS OF THE
WESTERN POLISSYA**

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A powerful root system is one of the most important factors that contributes to the photosynthetic activity of leaves, and consequently the growth and development of the plant. So important is the research root systems natural seed renovation of oak (*Quercus robur* L.), which is part of the structure natural reproduction uneven forests in terms oak-pine forests.

The purpose of researches - to set parameters and investigate architectonic of root systems natural seed renovation of oak (*Quercus robur* L.) in wet oak-pine forests of the Western Polissya of Ukraine.

Methods of researches. For studying architectonic root systems used the method of skeleton. In this method on plots in three times repetition conducted the excavations root systems of oak undergrowth 1-5-years old. Excavations carried out manually bayonet shovels various sizes, from stem plants until outcrop the thinnest roots.

Results of researches. During the researches were laid 10 plots with excavations 24 root systems of oak (*Quercus robur* L.).

Excavations carried out in wet oak-pine forest under the canopy of ripe stands and completeness not less than 0,60. The research results are presented in table 1.

Because of the results clearly that in terms oak-pine forests oak forms the taproot length of about one meter for 3 years. With that, the length of taproot directly depends on the thickness of humus horizon, due fastidiousness of oak to soil fertility at a young age, especially up to three years. Frequently the taproot had a forked end or refraction in horizontal direction, caused by the relative poverty more profound soil horizons.

A characteristic feature the root system of oak (*Quercus robur* L.) is the existence of so called first-order lateral roots [2], which clearly manifested from three years and may exceed the length of the main taproot in 2,5-3 times or more. Thus, during the excavations, five-year plant with elevated parts of 94 sm and 122 sm taproot was the longest lateral root length of 321 sm.

For comparison researches were conducted excavations in oak-spruce forest cultures created in 2012. Forest type – wet oak-pine forest. Forest cultures created planting two-year seedlings. Excavations carried out in 2014, the results shown in table 2.

Because of the results clearly, that the length of taproot 4-year plants in forest cultures less than that of the undergrowth about 4 times. With that, the taproot has no distinct the end, which bifurcates and bushes. Lateral roots are short and rarely exceed the length of the taproot.

In almost all studied plants present mycorrhizae of ektotrophic type as coralloid branching. That confirms once again that oak in all types of forest conditions where he meets, in all age periods, usually has mycorrhizae. In addition, the root systems infected by pests or diseases were found.

THE CONCLUSIONS

1. In terms oak-pine forests oak forms the taproot length of about one meter for 3 years.
2. First-order lateral roots which clearly manifested from three years may exceed the length of the main taproot in 2,5-3 times or more.
3. The length of taproot 4-year plants in forest cultures less than that of the undergrowth about 4 times.