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Book of Abstracts



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State and dynamics of natural regeneration of the scotch pine in fresh pine site after narrow clear felling

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Keywords: clear-cut, natural regeneration, density, availability, growth, seedlings.

The regeneration of pine plantations is one of the most urgent problems, especially in case of possible change of the main tree species to less valuable. The natural regeneration of Scotch pine in Kyiv Polissya studied by scientists: N. Kobranov, V. Maurer, S. Kovalevsky, V. Rybak, M. Kocherga et al. Seed artificial and natural regeneration of forest plantations are topical issues in Ukraine and abroad. Researchers J. Delaney, S. González-Martínez and F. Bravo, L. Ackzell., Y. Gong, S. Kellomäki, H. Väisänen, R. Kinnunen, N. Lust, T. Pukkala et. al believe that in the process of natural regeneration tree species are highly productive and stable. However, it is necessary to develop methods of felling and other measures that have a positive effect on the forest environment without violating its biocenotic structure.

The study of natural regeneration was carried out in Boyarka Forest Research Station. We researched regeneration of pine in the conditions of poor pine site with the participation of pioneering species – *Betula pendula* Roth. and *Populus tremula* L. (A2) and fresh pine site (B2) in the absence of squeezing the area. The average annual availability of natural pine observed on an area of 15 ha. The experimental object is put down on a log after a clear narrow felling (50 m) of the 101-year-old plantation, which was characterized by the following forestry and biometric parameters: composition 10 *Pine+Quercus*, average height - 32 m, average diameter - 40 cm, stock - 520 m³·ha⁻¹, the number of trees – 295 pc·ha⁻¹. A Clear-cut was carried out in January-May 2010. The type of forest is a fresh hornbeam-oak-pine association.

The state of growth was characterized by indicators: healthy, normal, healthy, overweight, mournful and doubtful. The following categories were distinguished in quality: healthy or well-established growth, without signs of oppression, disease, mechanical damage; doubtful growth - suppressed specimens with signs of drying above-ground parts that have mechanical damage, etc., but still capable of further life; dry - dead specimens of growth.

The state of the natural regeneration presented as a good and satisfactory state, although at the counting plots 8, 10-13 and 15 unsatisfactory trees were more than satisfactory in connection with the defeat of the tops of trees by the fungus *Lophodermium pinastri* (brown chute or brown snow mold of coniferous tree species).

Our research shows that it is inappropriate to plant forest cultures in the zone of favorable for the emergence of natural regeneration, but it is necessary to focus on natural regeneration, as was done in the block of 275 in Plesetsk Forestry, where two years after the narrow-cutting forest regeneration there were 43.400 of 1-3 year old pine-trees.

Despite the significant decline in self-seeding, especially one-year, during the first years, at the time of recent research on the area, 9.6 thousand seedlings and one self-seeding pine grows on the area, of which 5.2 thousand seedlings are three years old and older. Such a quantity of natural regeneration is quite enough to form pine stand of high density.

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