

Original article

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Bioindicators of the Stages of Destruction of Wind-Blown Windbreak Wood of European Spruce in Coniferous-Deciduous Forests of the Moscow Region

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Abstract. The process of natural destruction of wood combines two lines of decomposition of wood matter: mycogenic destruction of wood, which occurs under the influence of xylophages and mechanical destruction of the structure of wood matter during the vital activity of xylobionts. To identify the sequence of destruction and identify organisms capable of acting as bioindicators, 65 model trees of European spruce in the zone of coniferous-deciduous forests of the Moscow region were examined. To conduct the study, a method for studying a model tree has been developed that allows to obtain integrated data on the destruction of wood under the influence of biological and abiotic factors. A scale of stages of the destruction of spruce wood under the influence of xylotrophic basidiomycetes and saproxyll insects is proposed. Based on data from model trees, bioindicators of biodestruction stages and the sequence of their change depending on the state of the wood substrate are identified. It is concluded that xylolysis is a single dynamic process that takes place under the influence of complexes of mycodestructors and zoodestructors. Determination of bioindicators is possible for 1–4 stages of destruction of wood. Stage 5 is characterized by brown soft rot with a wood decomposition level of more than 80 %, which makes it almost impossible to identify biological indicators of xylolysis in the field.

Key words: xylolysis, fungi ordo Aphyllophorales, saproxyll insects

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