

EVALUATION OF BIOLOGICAL ACTIVITY OF *PICEA ABIES* (L.) KARST SEEDS COLLECTED IN LITHUANIA

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Picea abies (L.) Karst is one of the most important forest trees in Europe, both economically and ecologically [1]. Studies show that *Picea abies* bark extracts exhibit different biological activity [2,3]. Stilbene glycosides, phenolic acids, aromatic compounds, free stilbenes and flavonoids are the main compounds detected in the bark of *Picea abies* [3]. It is possible, that other parts of the plant also have biologically active compounds. To our knowledge, the literature data about biological activity of *Picea abies* seeds are scarce.

Different biological activities have been evaluated in different plants, such as antioxidant, antibacterial, antifungal, anticancer, anti-inflammatory, allelopathic, etc. Various classes of chemical compounds are responsible for different actions. Antioxidants inactivate free radicals and protect the cells from the effects of oxidative stress [4]. Antimicrobial activity prevents microorganisms (bacteria, viruses, fungi) life-threatening effects [5]. Allelopathic, can identify the positive or harmful effect of one plant to another plant [6]. Phenolic compounds and flavonoids protect plants from different biotic and abiotic stresses and act as unique UV filters, signal molecules, allelopathic compounds, phytoalexins, detoxicants and are antimicrobial defense [4, 7].

The aim of the study was to evaluate antioxidant, antibacterial and allelopathic activities of *Picea abies* (L.) Karst seeds extracts and their essential oils. Antioxidant activity in methanolic extracts and essential oils of the seeds were evaluated by spectrophotometric tests. Antibacterial activity methanolic extracts and essential oils were evaluated by agar well diffusion assay against three bacterial. Chemical composition of essential oil was determined by gas chromatography.

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