

Invasive plants as a source of biologically active lipids

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Invasive plants can be considered as a major threat to biodiversity and provision of ecosystem services worldwide, thus their eradication and control is an important task in many countries and even globally. Still the knowledge of many invasive species is limited and thus the efficiency of control activities often do have limited resultativity. Thus to develop knowledge based solutions of invasive plant eradication and control strategies it is essential to gain knowledge on their composition as well as methods of their biomass safe utilisation at the same time promoting use of valuable biomass components. In this study biochemical composition of widely distributed invasive plants Canadian goldenrod (*Solidago canadensis*), Sosnowsky's hogweed (*Heracleum sosnowskyi*), Himalayan balsam (*Impatiens glandulifera*), Japanese knotweed (*Fallopia japonica*) and other knotweed species were studied. Using extraction with following gas/liquid chromatography – mass spectrometry the substances present in these plants has been studied. As groups of substances with allelopathic activity, possibly affecting invasiveness of studied plants polyphenolics, lipids, essential oils have been identified and their concentrations in different parts of studied plants have been compared. Amongst lipids unsaturated fatty acids, phytol, unsaturated alkanes (n=18 – 26) and others. Several parts of studied invasive plants, for example, rhizomes of Japanese knotweed have high concentrations of polyphenolics, for example, resveratrol, emodin and others, with application potential. Thus, eradication of invasive plants can be combined with the use of their biomass to achieve plant control aims.

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