

# APPLICATION OF HERBICIDES IN THE CONTROL OF THE INVASIVE SPECIES *HERACLEUM SOSNOWSKYI* MANDEN. (SOSNOWSKY'S HOGWEED) IN FORESTRY

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A representative of the family Apiacea, Sosnowsky's hogweed (*Heracleum sosnowskyi* Manden.) previously cultivated as a fodder plant and now occupying vast territories along roads and railways, in and near settlements, uncultivated agricultural lands, on farms and in many other areas, poses a serious threat to human health. On these lands, an active eradication campaign has been going on for over 15 years. This invasive species also spreads actively on the lands of the forest fund including plantations, felling sites, young stands of natural origin, clearings and hayfields, forest stands of different ages with a small basal area, and in the most productive forest conditions. As a result, in forest plantations growth of woody plants (primarily of coniferous species) is inhibited, their death is observed, and environmental, aesthetic and industrial damage increases due to the growth and dominance of Sosnowsky's hogweed.

As a result of field experiments in the Leningrad Region, a high effectiveness of a number of modern herbicides (Roundup, Anchor-85, and Magnum) for control of Sosnowsky's hogweed and other unwanted herbaceous vegetation, as well as their selectivity in relation to pine and spruce, has been demonstrated.

**Key words:** hogweed, forest plantations, herbicides, pine, spruce, effectiveness, selectivity

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## Introduction

As a result of cultivation of Sosnowsky's hogweed as a silage plant in the past, it is now widely spread in the Leningrad, Pskov, Novgorod, Vologda, Tver, Moscow, Ivanovo, and Kirov Regions, in the Republics of Karelia, Komi, Mordovia, as well as in Belarus, Lithuania, Latvia, Estonia and other Eastern European countries. The areas occupied by Sosnowsky's hogweed in the European part of the Russian Federation continue to increase dramatically. It is believed that Sosnowsky's hogweed annually increases its distribution area by at least 10%, by actively displacing native species and forming monodominant communities [Luneva, 2014; Filatova, Vlasov, 2002].

In Europe, Sosnowsky's hogweed escaped cultivation in the 1970s, and in Russia, in the 1980s [Vinogradova et al., 2010]. Currently, the scale of invasion of this species in Russia has reached alarming proportions [Luneva, 2013, 2014; Luneva and others. 2018]. Many botanists have long expressed concern about the transformation of this species into a malicious weed

[Moskalenko, 2000]. The biological characteristics of Sosnowsky's hogweed, its high ecological plasticity and seed productivity on the one hand, and inattention to its dispersal on the other, as well as the lack of economic activity on agricultural lands for many years, allowed this species to get out of control and move into the category of malicious weeds to be eradicated [Dalke, 2014; Kondratyev, 2015; Krivosheina, 2011; Panasenko, 2016; Sadovnikova, 2015; Sadovnikova et al., 2018].

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