

THE FAT DORMOUSE (*GLIS GLIS* L.) AS A CAUSE OF  
DAMAGE TO THE COMMON SPRUCE (*PICEA ABIES* (L.)  
KARST.) IN THE FORESTS OF GORSKI KOTAR (CROATIA)

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The forests of Gorski Kotar cover an area of ca 125,000 ha and consist mostly of common beech (*Fagus sylvatica* L.), fir (*Abies alba* MILL.) and common spruce (*Picea abies* (L.) KARST). There are three species of dormice in this area: the fat dormouse (*Glis glis* L.), the forest dormouse (*Dryomys nitedula* PALL.) and the common dormouse (*Muscardinus avellanarius* L.). The most numerous is *Glis glis* which gnaws the bark of the common spruce, causing intense damage and desiccation of the trees. It is evident that they caused the damage to the common spruce over an area of 323.12 ha during the period from 1972 to 1998. Detailed research was carried out into the damage caused by the fat dormouse, during 2001, at eight experimental sites whose median area was about 0.5 ha, four of which were in plantations and four in natural forests. The ages of the spruce trees were from 20 to 28 years.

In the experimental plantation areas 151 fat dormice were caught and 80 in the natural forests. The dormice gnaw the bark of the common spruce on the upper third to half of the trunk during the period late June to early July. The intensity of the damage correlates with the breast height diameter of the trunk, thickness of the bark in the chewed zone, the chemical composition and amount of moisture in the bark. The chemical composition of the bark was investigated in a lower part of the trunk, in and above the chewed zone, to investigate the cause of the damage. It was found that the intensity of the damage depends on the numbers in the dormouse population, height, thickness and age of the tree, the general state of the plantation and other causes. It is recommended that planted spruce trees should be replaced by natural species.