

Abstract:

European spruce bark beetle (*Ips typographus*) is a natural forest pest that feeds on coniferous trees, mainly on spruce. Previous studies showed that population growth of bark beetle is supported by warm and dry weather and hindered by cold and humid weather. Temperature affects development rates and influences the number of generations bark beetle may produce during one season; furthermore, it affects survival rates during the winter. Low precipitation leads to water stress of spruce trees which become more prone to bark beetle infestation. High precipitation promotes growth of mold and other natural enemies of bark beetle.

The aim of the experimental part of this thesis was to analyze the relationship between population dynamics of bark beetle and weather, using data from the Šumava national park. Data did not show a significant effect of temperature and precipitation on the population growth rate of bark beetle. The growth rate was significantly correlated only with the abundance of bark beetle in the previous year. For further examination of population dynamics of bark beetle in connection with climate characteristics, it would be required to obtain better and more long-term data on bark beetle abundance; harvested bark beetle wood may be influenced by a variety of interfering (e.g. economical) effects.

Keywords

spruce bark beetle, Šumava, gradation, climate, temperature, precipitation