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Ecological requirements of some ant species of the genus Formica (Hymenoptera, Formicidae) in spruce forests

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Five types of stand stages (clearings-samplings, plantations, thinnings, thickets, and mature forests) of spruce forests were examined at the foothills of the Jizerské hory Mts. in summer 2005 and 2006. The presence of ants was surveyed by catching them into pitfall traps and observing on baits. Higher numbers of Formica fusca ants were found in clearings-samplings and in plantations. Their activity was higher at the soil and air temperature of 20–30°C. The peak of activity was observed in July. Most specimens were trapped at lighter habitats and in the sites with more than 50% herbaceous and gramineous vegetation cover. F. pratensis was trapped in plantations and thickets. It was active at the soil temperatures 12–21°C and air temperatures 16–25°C. It occurred both in dark and light areas. F. sanguinea most commonly occurred in thinnings. This species was the most active at the soil temperature 20–30°C. Its activity depending on air temperature grew almost linearly. It occurred both in dark and in light stand stages with at least 60% vegetation cover. F. truncorum was observed only in thinnings. The activity of F. truncorum was the highest at the air and soil temperatures 15–25°C. The peak of activity was recorded in July. It was observed only in stands with the quantity of incident radiation 1,030 lx and with 20–80% of undergrowth cover.

Keywords:

Formica; ecological requirements; spruce forests

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