**RRES Press Release 12th February 2025 New beetle threat to Sitka spruce plantations**

***Eight toothed spruce bark beetle shows a marked preference for fresh cut Sitka wood***

An emerging pest of spruce trees that has devastated European Norway Spruce populations is equally attracted to Sitka Spruce, with direct consequences for commercial forestry in the UK, according to a new study.

The eight-toothed spruce bark beetle (*Ips typographus*) is a major pest of Norway Spruce and has done immense damage to native forests in Northern Europe. It has now been found in the UK, but it was not known initially if it would be as attracted to the principal commercial conifer grown in the UK, Sitka Spruce. The new study used Rothamsted’s semiochemistry expertise to find out whether the volatile chemicals given off by the two tree species were equally attractive to the beetle.

The research team, a collaboration between [Forest Research](https://www.forestresearch.gov.uk/) and the Chemical Ecology group at Rothamsted, assessed how the beetles chose their hosts by setting up laboratory experiments using freshly cut spruce logs, and then verified the findings in the field in an area with an endemic population of the beetle. Overall, colonization and breeding success were found to be similar in cut Sitka and Norway spruce material. The team found that odours of aged wood from the two species were equally attractive, and that fresh Sitka was more attractive than fresh Norway spruce.

“These findings suggest the beetles will select and colonize cut Sitka as readily as cut Norway spruce,” said Rothamsted’s Dr Jozsef Vuts. “It’s not clear yet what the susceptibility of live Sitka trees will be, but in doing this study we have gained a vital understanding of the role of host-emitted volatile organic compounds (VOCs) in attracting the beetle*.”*

Eight-toothed European spruce bark beetles are often associated with windblown, damaged and recently felled spruce trees, where they build up numbers before moving on to attack adjacent live trees. The beetles “mass-attack” trees, overcoming the plant’s usual defences by a combination of large numbers and blue-stain fungus. This phase can lead to extensive tree deaths.

If a tree is infested with eight-toothed spruce bark beetle, inspection of the bark, and the wood under the bark, usually reveals a linear gallery system, where the females lay their eggs. This has led to the beetles being often referred to as ‘engraver’ beetles because of the appearance of the galleries.

Since 2013, more than 100 million cubic meters of Norway spruce (*Picea abies*) have been killed by the eight-toothed spruce bark beetle in Europe.

Woodland owners and managers should continue to check the health of spruce trees on their land, identifying stressed, fallen, and snapped trees, and taking action to remove them and any surrounding susceptible material, say the research team.

Dr Daegan Inward, who led the research on behalf of Forest Research said, “While this study has advanced understanding of cut Sitka spruce as a suitable host for breeding, the logs used in our work have significantly reduced defences compared to living trees. Defensive capabilities of live, growing trees will be different and more responsive. Our current work is therefore investigating the susceptibility to attack of live Sitka spruce trees and this will provide a much clearer picture of the potential impact and risks of *Ips typographus*.”

The study was part-funded through Defra's ‘Future Proofing Plant Health’ programme. Forest Research received additional funding from the Science and Innovation Strategy for Forestry in Great Britain. Rothamsted Research receives strategic funding from the Biotechnology and Biological Sciences Research Council (BBSRC).

*Watch the Forestry Commission video*[*Ips typographus: beat the beetle*](https://eur01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DYG_x01T5FK8&data=05%7C02%7Cjames.clarke%40rothamsted.ac.uk%7C0bc784160f034d63e33b08dd4b715969%7Cb688362589414342b0e37b8cc8392f64%7C0%7C0%7C638749672410638060%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=wCHMtqeOUsT%2F9UJmdpwZgaKGPn%2FdF2G2AJZv5lpWOPA%3D&reserved=0)

Publication

Inward, D., Vuts, J., Thomas, G., Barnard, K., Caulfield, J.C., Powers, S.J., Uglow, A. and Reed, K. (2025), Investigating the threat to Sitka spruce from *Ips typographus*: discrimination and colonization of Britain's principal commercial conifer by a damaging forest pest. Pest Manag Sci. <https://doi.org/10.1002/ps.8644>