



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Witches' broom sweeping the floor for beetles?

We look for a candidate interested in chemical ecology and/or community genetics to perform an exam work exploring the effects of host resistance on spatial patterns of resource quality among and within birch trees. The community genetic framework suggests that genetically determined resistance may play a prominent role in structuring associated insect communities and thus have a significant influence on biodiversity. Such effect would be predicted if resistance in a shared host effects resource quality (e.g. biochemistry) which in turn translates to divergent responses among the species in the community.

The aim of this project is to explore how resistance in Downy Birch towards the Witches' broom pathogen *Taphrina betulina* affects leaf quality and how this translates to spatial patterns of preference of the leaf rolling beetles *Byctiscus betulae* and *Deporaus betulae*. The successful candidate will identify a set of resistant and susceptible trees in the field and establish beetle populations in the lab. Using leaves from resistant and susceptible trees and of infected and uninfected branches you will conduct bioassays to look into how resistance and infection affects preference of the two beetles.

The results are of relevance for understanding the mechanisms behind the genetic effect on community composition and biodiversity, and may guide tree breeding for multi species resistance.

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