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NON-HOST VOLATILES AND ANTIFEEDANTS FROM ANGIOSPERMS DIRECTING HOST SELECTION IN CONIFER-INFESTING BEETLES: FROM CHEMICAL ECOLOGY TO FOREST PROTECTION.

Two projects regarding the host selection of conifer feeding Coleoptera influenced by non-host chemical signals are overviewed. In both cases the knowledge has reached a level where a use of these signals can be foreseen to be of practical value.

It has been known since long that insects are attracted to their host plants by odours for feeding and egg-laying. A prominent example is attraction to monoterpene hydrocarbons by conifer-inhabiting bark beetles. Odours from non-host plants were believed not to be of importance, or reacted upon only at close distance or very high doses. The picture has changed dramatically during the last 10 years. We know now that both Lepidoptera and Coleoptera (moths and beetles) have receptors highly sensitive and specific to key host compounds and that non-host volatiles elicit specific responses.

The role of angiosperm volatiles in conifer bark beetle (mainly *Ips typographus*) host selection will be discussed. Non-host volatiles like leaf and bark C6-alcohols, bark C8-alcohols, a bark spiroketal and the old host indicator verbenone are all active. The sequence from CG-EAD, behavioural assays, field trapping test, and to practical forest tree protection will be illustrated.

The role of taste and olfaction signals in the host choice in the pine weevil *Hylobius abietis* is the second project. The possible use of these signals in seedling protection in Scandinavian commercial forestry represents a project with a more directly applied approach. Two lines of investigation, 1) screening of synthetic lead compounds and their analogues as well as 2) the activity of non-host woody plants are followed. Our mode of investigation from laboratory micro feeding assays to successful protection of seedlings on the field is demonstrated.

Some further information at <http://www.vsv.slu.se/schlyter/schlyter.htm>