

# PINE WEEVIL

## Host-plant acceptance on mineral soil and humus



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The presence of pure mineral soil around the seedling strongly reduces the likelihood that an approaching pine weevil will feed on it.

### Background

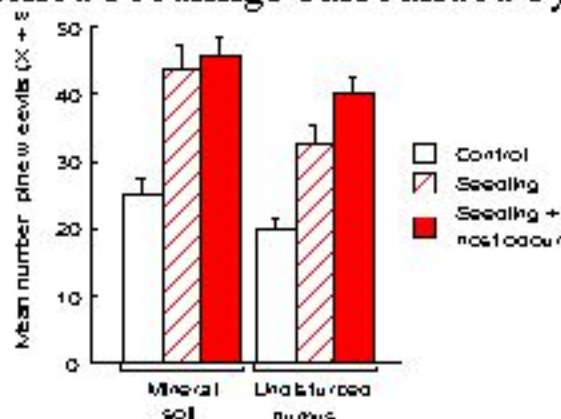
The pine weevil *Hylobius abietis* (L.) (Coleoptera, Curculionidae) is an economically important pest of conifer forest regenerations in Europe and Asia. Soil scarification, which usually exposes mineral soil, is widely used to protect seedlings from weevil attack. However, the mechanism behind this protective effect is not yet fully understood.

### Aim

Field experiments were conducted to determine the pine weevil's responses to visual and odour stimuli from seedlings when moving on mineral soil and on the undisturbed humus surface.

### M&M and Results

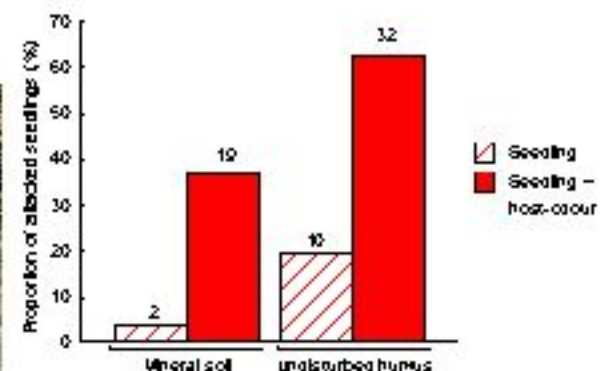
One experiment measured the number of pine weevils approaching seedlings, with and without added host odour, on mineral soil and undisturbed humus. Seedlings with added host odour attracted more weevils on both soil types. Unexpectedly, somewhat more weevils approached seedlings surrounded by mineral soil.



Number of pine weevil caught in pitfall traps



In a similar experiment, feeding attacks on seedlings planted directly in the soil were recorded. Only half as many seedlings were attacked on mineral soil as on undisturbed humus.



Proportions of seedlings, planted directly in the soil, that were attacked

### Discussion

In the first experiment, the weevils were trapped 2.5 cm from the bases of the seedlings' stems, whereas they could reach the seedlings in the experiment where seedlings were planted directly in the soil.

### Conclusion

The pine weevils' decision on whether or not to feed on a seedling is strongly influenced by the surrounding soil type and this decision is taken in the close vicinity of the seedling.

