

Forest Health: Research Perspectives

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Forest health: research perspectives

How sanitary problems affect forest stands?

- ➡ Tree defoliation
- ➡ Tree and seedling mortality
- ➡ Reduction of biomass production



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How to assess damage caused by forest pests and diseases?



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How to predict sanitary risks?

- ➡ Tools to estimate local density of forest pests and diseases
 - Pheromone trapping
 - Quantitative molecular estimate for forest pathogens
 - ➡ Spatial modelling of pest and disease
 - ➡ Models to predict risk
- ➡ Link with decision models



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How to prevent sanitary risks?

- ➡ Management risks

How silvicultural practices such as fertilising, thinning, pruning or shortening rotation time are associated with sanitary risks?

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How to prevent sanitary risks?

- ➡ Genetic risks

Susceptibility to pest and diseases of genetically improved tree varieties.

Long term resistance in tree varieties improved to better resist pest and diseases.

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How to prevent sanitary risks?

➡ Biodiversity and pest control

- Evaluation of sanitary benefits from maintaining understorey plant diversity at the stand level
- Assessment of sanitary benefits from preserving tree diversity at the landscape level



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How to control pests and diseases?

Use of IPM strategies

➡ Biological control

➡ Use of semiochemicals

Pheromones
kairomones
Host and non-host volatiles



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How to decide about IPM strategies?

➡ Cost and Benefits Analysis

- direct costs and benefits
- off site effects (e.g. watershed management, landscape quality, recreation)
- off market effects (e.g. protection of the biodiversity)

➡ Modelling decision support systems