

Litterfall and defoliation on six
Norway spruce (*Picea abies* L.) and
Scots pine (*Pinus sylvestris* Karst.)
Level II plots

Liisa Ukonmaanaho & Martti Lindgren

*Forest in a Changing environment - Results of 20
years ICP Forests Monitoring*

October 25-28 2006, Göttingen, Germany

Results

Annual litterfall:

- **Norway spruce** stands varied between 92- 463 g m⁻²
- **Scots pine** 83 -416 g m⁻²

Average degree of defoliation was

- 13 % in the **Norway spruce** stands
- 7 % in the **Scots pine** stands

Norway spruce stands

Total litterfall and defoliation at stands correlated positively (p=0.00, r = 0.94 at Juupajoki and p=0.00, r= 0.86 at Tammela)

Needle litterfall and defoliation at correlated positively at Juupajoki p= 0.00, r =0.89

Scots pine stands

No correlation in total or needle litterfall and defoliation



Conclusions

- Both annual litterfall and defoliation showed considerable year-to-year variation
- 2 of the 3 **Norway spruce** plots both the litterfall flux and defoliation degree had slightly increasing trend → significant correlation between total needle litterfall flux and defoliation degree
- only 1 of the 3 **Norway spruce** plots needle litterfall flux and defoliation degree correlated
- No correlation between **Scots pine** total or needle litterfall flux and defoliation degree
- Most probable cause for these differences in the relationships lies
 - in the different needle-shedding period of the two tree species
 - differences in the litterfall and defoliation assessments
 - weather-related factors
- **Future:** more sites and information about temperature and precipitation should be included