

Jørgen Bille-Hansen; Karin Hansen (2001) **Relation Between Defoliation and Litterfall in Some Danish *Picea Abies* and *Fagus Sylvatica* Stands**. Scandinavian Journal of Forest Research, Volume 16, Issue 2 March 2001, pages 127 - 137

Abstract

Assessing defoliation and measuring litterfall are two different ways of estimating the shedding of needles and leaves from the forest canopy. Both variables can be said to reflect the crown condition, but the two methods have rarely been compared. In this study the visual observations of defoliation of individual trees were compared with sampled litterfall data for the two main tree species in Denmark, *Fagus sylvatica* and *Picea abies*. Defoliation assessments and litterfall measurements were performed in seven level II plots. Six of the stands were 40 yrs old and the remaining stand was 81 yrs old. Both a positive and a negative correlation, which were not significant, were observed between defoliation and total leaf litterfall on the beech sites. Similarly, no significant correlation was observed between defoliation and the yearly needle litterfall on the younger Norway spruce plots. However, the defoliation and the yearly needle litterfall at the old stand at Klosterhede were positively correlated on a 10% significance level. A positive correlation was also apparent at the younger stands between the defoliation and the needle litterfall from the period April-July of the same year in which defoliation was assessed. The absence of a clear connection between the two assessments is discussed. The two assessments are apparently of widely different origin, which makes comparison difficult.

Keywords: Defoliation; Forest; Health; Level; Ii; Network; Litterfall