

11. Wood-boring pests

11.1 The common furniture beetle *Anobium punctatum* in museum objects and historic buildings

The results of three years of monitoring of the activity of *Anobium punctatum* and wood moisture content in the roof spaces (lofts) of nine Danish churches were analysed to find possible correlations between pest activity and wood moisture content.

In three churches no activity was found. In the six churches with active infestations, the activity levels were very low. However, the results from the three different monitoring methods applied in 1996 support each other; in lofts with many new exit holes, more beetles were found on the traps (Kirk fly stop and Anobid trap). A high degree of association ($p < 0.05$, $\chi^2 = 12.78$) was found between the activity levels determined by the different methods in a particular church; thus it can be concluded that the activity level is highest in Tågerup Church, followed by Errindlev, Olstrup, Valløby, Lundtofte and lowest in Lellinge Church.

The wood moisture content was monitored by means of recordings of the resistance between two electrodes imbedded in a dowel made of beech wood (length: 33 mm; dia.: 10 mm). The dowels were inserted permanently into tightly fitting holes bored in the timber, 4-6 dowels in each church loft. Recordings were made every 4-6 weeks during the first year, every 3 weeks during the second year and every 2 weeks during the third year.

The recordings of the wood moisture contents in each loft are shown in Figure 1. It can be seen that the values in some lofts are consistently lower than in the others, e.g. Lellinge as opposed to Valløby.

By means of regression analysis and co-variance analysis it was found that the wood moisture levels in Errindlev, Olstrup and Valløby were significantly higher than those in Lellinge, Tågerup and Lundtofte. In most cases, higher *Anobium punctatum* activity coincides with a higher wood moisture level, which thus seems to play an important role in determining the development rate of the pest.

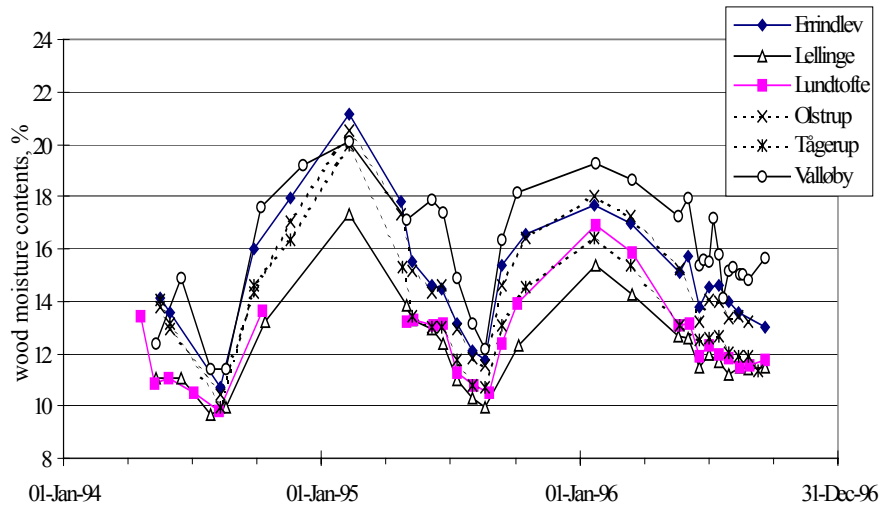


Figure 11a. Wood moisture levels in unheated lofts of six Danish churches monitored for 2½ years. Each value is the mean of recordings of the electric resistance at 12 mm depth in timber in 4-6 permanent locations in each loft space.

A full account of the project results will become available in Danish in 1998.

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