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**Journal of Forest Science**

**Comparison of the root system architecture between windthrown and undamaged spruces growing in poorly drained sites**

**Štofko P., Kodrík M.:**

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In the locality Hnilé Blatá (High Tatras Mts.) the parameters of root plates and the number, length and diameter of the individual root branches in windthrows and standing Norway spruces (*Picea abies* [L.] Karst.) were measured.

Individual root branches were classified to 12 diameter classes according to their diameter measured in the middle of the root branch length. Using random sampling, 21 windthrows were selected.

In their neighbourhood, another 21 undamaged trees were selected on the basis of their similarity in aboveground parameters and they were uprooted by a tractor winch. We found out significantly higher mean values of the vertical radius, the average width and theoretical surface of root plates in undamaged spruces.

Mean values of root branch frequency in the first six diameter classes (up to 6 cm) were higher in undamaged spruces, but mean values of root branch frequency in the last five diameter classes (12.1–30.0 cm) were higher in windthrows. Mean values of the root branch length in the first

six diameter classes were higher in undamaged spruces. Similarly, mean values of the total root branch length were higher in the first six diameter classes in undamaged spruces, but the mean values of the total root branch length were higher in the last six diameter classes (9.1–30.0 cm) in windthrows. Keywords: Norway spruce; stability; root system; windthrow

**Keywords:**

Norway spruce; stability; root system; windthrow

[ [fulltext](#) ]

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