

Cater, M. és Batic, F. (1999): Some ecophysiological stress indicators of pedunculate OAK (Quercus robur L.) in the north easternen of Slovenia; Zbornik gozdarstva in lesartsva, 58, 1999, s. 47-83

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Short reference: Cater és Batic (1999)

First author: Cater Matzaj

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Abstract

In the last decade in Prekmurje, there has been a noticeable decline and physiologically weakening of the pedunculate oak (Quercus robur L.) because of dry climate, unfavourable precipitation patterns and human influence through changes in watercourses and the water table.

The paper addresses the relationship between water stress of the common oak and indicators of water status in the Murska suma forest complex (groundwater table, precipitation, water level of the rivers Mura and Ledava) using plant stress indicators such as water potential, electrical resistance of the cambial zone and crown defoliation. Two permanent plots with varying levels in decline in pedunculate oak trees were chosen. Water potential, electrical resistance of cambial zone and defoliation were measured once a month. The measurements showed a relationship of considerable importance between the water potential and groundwater table, which was stronger on plot that showed more intensive decline. At the same time a pot experiment was carried out with five common oak seedlings to define water potential at wilting and permanent stomatal closure point. The wilting point was reached at values between -0,5 and - 0,7 MPa and permanent stomatal closure was reached below -1,62 MPa.

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Kovács Gabriella

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