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Responses of Scots pine to waterlogging during growing season

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For the future management and sustainable use of boreal forests it is crucial to consider the rate and strength of tree responses to an elevated water table and the concurrent oxygen limitations, especially in peatlands. We examined the response dynamics of 7-year-old Scots pine (Pinus sylvestris L.) seedlings to a five-week waterlogging (WL) during a growing season in a root lab experiment. WL took place after shoot elongation had ended whereas growth of the trunk diameter was still in progress. We monitored shoots and roots before, during and after WL treatment. Relations between the shoot and root responses, the latter being the primary target of the WL stress, will be discussed. We hypothesize that root responses, in terms of growth by minirhizotron imaging, will appear with delay as compared with the first symptoms in physiology of above-ground organs.