

**PROJECT TITLE**

How does root developmental plasticity affect stress tolerance?

**CONSORTIUM**

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# SUMMARY OF THE REPORT

During salt stress architecture of the root changes. However, little is known about the link between these changes in root architecture and their effect on shoot growth and ultimately salt tolerance. Our project aims to investigate this relation between root and shoot growth after salt stress. For long term shoot growth, two types of altered root growth patterns were investigated; (1) mutants with an altered root system architecture and (2) mutants with an altered halotropic response (salt evasion of the main root). Sixteen mutants were selected and the rosette area was measured exposure to salt stress over 5 weeks.

Besides the long-term effects on root architecture, salt has an immediate effect on root growth rate. Upon salt stress the root growth rate is known to decrease, a phase called the quiescent root growth phase. After this quiescent phase, the root growth rate partially recovers. The second objective of the project aimed to understand the implications of this root quiescent phase on shoot growth rate. Little is known about this quiescent phase in the shoot, thus the first question was whether a similar growth reduction occurs in the shoot. Secondly, the relation between root and shoot quiescent phase was investigated using a selection of mutants in hormone signaling pathways thought to influence the root quiescent phase.