

ROLE OF CELL WALL ARABINOGLACTAN PROTEINS IN PEA ROOT RESPONSES TO OSMOTIC STRESS AND APHANOMYCES EUTEICHES INFECTION: SHARED OR DISTINCT STRESS RESPONSES?

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Abstract text: Pea (*Pisum sativum*) is one of the most widely cultivated legumes of major economic importance. It provides significant nutritional benefits and promotes symbiotic nitrogen fixation. However, pea production is strongly affected by the high variability of spring climatic conditions. Rainy springs favor the spread of devastating root rot disease caused by the oomycete *Aphanomyces euteiches*. Conversely, dry springs induce early water deficits that compromise the growth of pea seedlings. Given the increasing unpredictability of spring weather conditions, cultivars tolerant to both root rot disease and early water stress are required in the context of climate change. To address this challenge, a better understanding of root responses of pea seedlings is required. The Root Extracellular Trap (RET), composed of associated cap-derived cells (AC-DCs) and their surrounding mucilage, acts as a first line of root defense [1]. Interestingly, we have found that both early osmotic stress and *A. euteiches* infection affect RET production in pea seedlings. In addition, the composition of root arabinogalactan proteins (AGPs) was shown to be altered under both stress conditions. However, whether similar or distinct modifications of AGP structure occur in response to these stresses remains to be investigated.

[1] Driouich et al; (2024) Curr Opin Plant Biol.82:102656.