

P019 Jasmonate signalling in plant mineral nutrition
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Jasmonate (JA) signalling plays an important role in plant responses to biotic and abiotic stress. Recent results from our laboratory indicate that this plant hormone might also be an important factor in integrating adaptive responses of plants to mineral deficiency. Using microarrays we analysed the genome-wide transcriptome of *Arabidopsis thaliana* seedlings exposed to various potassium (K^+) regimes. A significant proportion of K^+ -dependent transcripts could be assigned to oxylipin metabolism, jasmonate signalling and jasmonate-dependent downstream events. Comparison of K^+ -related transcript profiles of wildtype plants with those of *coi1* mutants allowed us to further dissect processes induced by changes in K^+ supply with respect to JA signalling. On the basis of our results we propose that JA-regulated nutrient management involves storage of nutrients in energy-rich compounds, re-allocation of nutrients via regulation of transporters, and recovery of nutrients from senescent leaves.

In sharp contrast to the large number of JA-related genes within the K^+ -regulated transcriptome, very few K^+ -regulated transcripts could be linked to salicylic acid or ethylene. The implications of a constitutively increased JA level during K^+ -deficiency for effective cross-talk between different pathogen-inducible signalling pathways are currently under investigation and will be discussed in the light of enhanced susceptibility of K^+ -deficient plants to biotic stress.