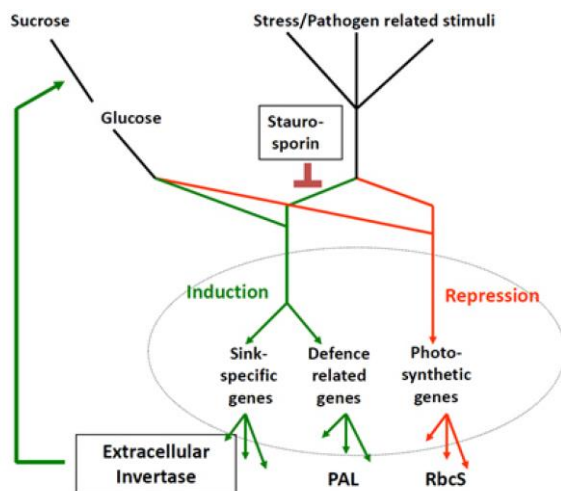


Plant - microbe interactions

Plants are exposed to beneficial and adverse microbial interaction ranging from endo- and epiphytic symbionts to biotrophic and necrotrophic fungal and bacterial pathogens. Based on the coordinated response of primary metabolism and defense responses the spatial and temporal dynamics of the interaction will be characterized and verified by dual functional approaches. Strategies will be developed to increase tolerance while minimizing the cost of defense and the use of pesticides. Special attention will be given to the neglected growth promoting microbes, sugar-signaling and the interaction of hormones with defense pathways.



Co-ordinated regulation of source-sink relations and defence responses by metabolic and pathogen derived stimuli



Application of different types of cytokinins such as thidiazuron (TDZ) or kinetin (KIN) increases the resistance of Arabidopsis against infection by *Pseudomonas syringae* (PSTDC3000)

Key reference:

Großkinsky et al. (2011) Cytokinins mediate resistance against *Pseudomonas syringae* in tobacco through increased antimicrobial phytoalexin synthesis independent of salicylic acid signaling. *Plant Physiol.* 157: 815-830

Review:

Berger et al. (2007) Plant Physiology meets phytopathology: plant primary metabolism and plant pathogen interactions. *J. Expt. Bot.*, 58: 4019-4026