

## Keynote lecture

# **Plant phenotyping technology adoption and our quest to cope with climate change.**

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## Summary

Adoption to new technology takes time and is a highly complex matter in all domains. Our food production system already suffers from the effects of climate change, therefore it's urgently needed to enable plant scientists in academia and industry to come up with solutions to deal with the effects of climate change. Enabling these experts with efficient new screening technology will boost the quest to find more robust and tolerant crop varieties to cope with climate change effects. Large-scale research infrastructure is a driver for innovation in research and for achieving scientific breakthroughs. In the Netherlands recently the Netherlands Plant Eco-phenotyping Centre (NPEC) was developed, to enable large numbers of users to use high-tech, data driven screening technologies for the next big step forward. Modern plant phenotyping, or phenomics, involves the objective, accurate, detailed and reproducible recording of a range of characteristics of a large number of plants over time, in response to their environment. NPEC provides its users with a multitude of state-of-the-art platforms at which to grow plants in controlled, semi-controlled or natural conditions, equipped with a range of modern sensors for far-reaching automation and digitization of plant phenotyping. Plant phenotyping is currently in the scientific spotlights because of its growing importance as a decisive factor in finding solutions to major global problems related to food security, the climate crisis and the loss of biodiversity. Several examples will be discussed to show the impact of this upcoming technology, including work from the ongoing Dutch-Japanese public private partnership 'Transition Towards A Data-Driven Agriculture (TTADDA)'.