

The Australian Plant Phenomics Network (APPN) is a coordinated national network of nine research infrastructure nodes hosted by renowned plant research organisations across Australia. We provide open access to state-of-the-art plant phenotyping technologies – including advanced imaging, robotics and FAIR (Findable Accessible Interoperable Reusable) data management and analysis – to enable research excellence and innovation, and to accelerate research output.

APPN is funded through the Australian Government's National Collaborative Research Infrastructure Strategy (NCRIS).



[plantphenomics.org.au](http://plantphenomics.org.au)

We are proudly supported by

**NCRIS**  
National Research Infrastructure for Australia  
An Australian Government Initiative

APPN plant phenotyping infrastructure and expertise is strategically located at nine locations across Australia:



**WESTERN SYDNEY UNIVERSITY**



# Accelerate your next plant research project by partnering with the APPN

APPN's semi- and fully controlled greenhouses, growth rooms and field environments, advanced imaging technologies and climate sensors enable researchers to study plant performance under a range of growing conditions and stresses. A variety of sensors are available with each controlled environment,

and via airborne or ground-based vehicles in field or remote sites.

These systems accelerate the speed, detail and accuracy of crop performance measurement across all growth stages.

Understanding plant physiology and responses to stress is essential

to identify novel traits that improve resilience and yields. Our cutting-edge sensor technologies, combined with image and data analytics, help researchers and industry to tease apart the critical elements of plant development and address the challenges facing Australian agriculture.



## MAP KEY

### Plant phenotyping capabilities

- National suite of controlled environment facilities
- Network of nationally coordinated field sites
- Mobile phenotyping units to serve rural areas and field trials
- National Climate Observation Unit Network
- Collaborative Data Network

A THE UNIVERSITY OF ADELAIDE	B Australian National University	C Charles Sturt University
D Department of Primary Industries and Regional Development	E LA TROBE UNIVERSITY	F THE UNIVERSITY OF QUEENSLAND AUSTRALIA
G THE UNIVERSITY OF SYDNEY	H THE UNIVERSITY OF WESTERN AUSTRALIA	I WESTERN SYDNEY UNIVERSITY

## Core capabilities

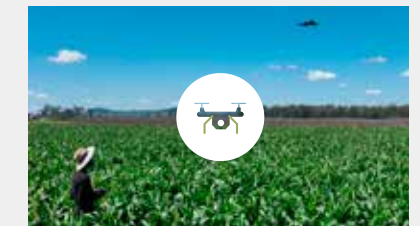
### Plant phenotyping capabilities



National suite of controlled environment facilities



Network of nationally coordinated field sites



Mobile phenotyping units to serve rural areas and field trials

### Climate CropServatory network and innovation framework



Distributed national network of climate observation units



Emerging and frontier technology proofing



Collaborative national plant phenomics missions

### Underpinning collaborative data network



FAIR and open data platforms

## What we offer

### High-throughput phenotyping

APPN provides high-throughput phenotyping using automation and the latest camera and sensor technologies. Using our X-ray, fluorescence, hyperspectral, RGB, thermal, and 2D and 3D LiDAR sensors, researchers can monitor plant growth and performance rapidly, objectively and non-destructively.

This enables a critical temporal dimension in projects, to study plant responses through the entire growth cycle.

### Precision controlled environments

Controlled environment spaces are available in a range of sizes, offering precisely managed light, temperature, drought, CO<sub>2</sub> and other abiotic or biotic stressors. Root and soil study and imaging is available from the millimetre to metre scale.

### Field phenotyping

APPN technology helps agricultural researchers test crop varieties under real-world conditions at semi controlled fixed field sites located across Australia's cropping regions. Sensors, scanners and imaging systems help researchers to make informed decisions about plant performance and identify lines exhibiting promising characteristics.





### Mobile and remote phenotyping

Sophisticated ground and UAV-based mobile phenotyping units, each offering a range of sensors, are available for field deployment anywhere in Australia.

### Data management, analysis and visualisation

We offer the full scope of data management for research results, from statistically designed layouts and best practice protocols at the outset through to innovative data management and visualisation tools on completion.

### Support for long distance studies

A 'research hotel' approach enables distant researchers to use our facilities in person or remotely with APPN support - from applying for quarantine permits to planting and managing experiments.



### Strategic locations

Our infrastructure is housed in nine strategically located nodes, spanning the range of cropping climates across mainland Australia and hosted by renowned plant research institutions:

- The Plant Accelerator® (University of Adelaide)
- Australian National University
- Charles Sturt University
- WA Department of Primary Industries and Regional Development (DPIRD)
- La Trobe University
- University of Queensland
- University of Sydney
- University of Western Australia
- Western Sydney University

### Access our capabilities

APPN is funded through the Australian Government's National Collaborative Research Infrastructure Strategy (NCRIS). Our capabilities are ideal for:

- Crop scientists and breeders
- Plant geneticists
- Biotechnologists and biochemists
- Soil scientists
- Australian and international researchers
- Academic and commercial researchers

Access is affordable and easy. Please visit our website for contact details and arrange a consultation with our team about your research project.

