



# Centre for Agricultural Engineering

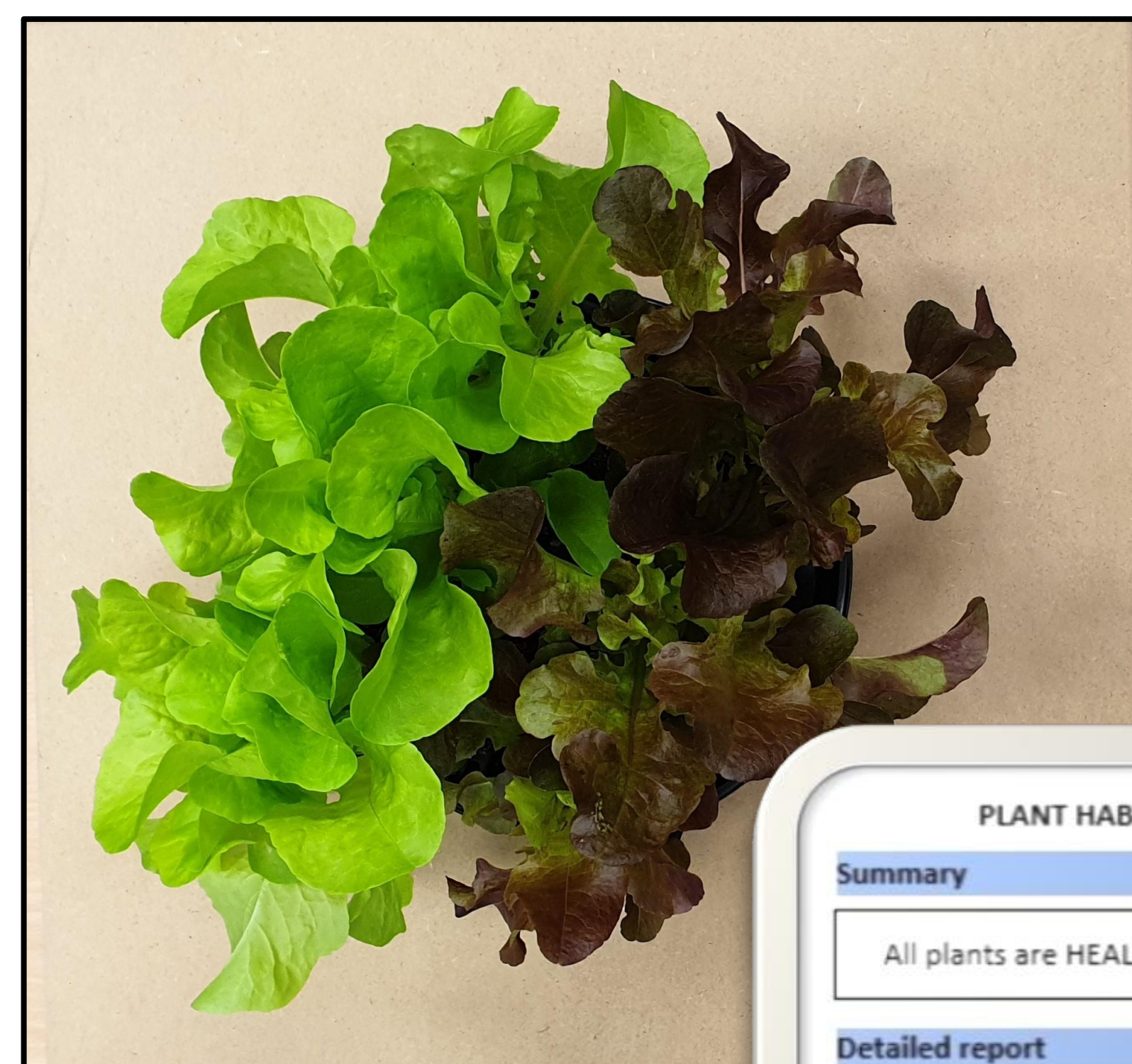
## Early plant stress detection for food safety in space

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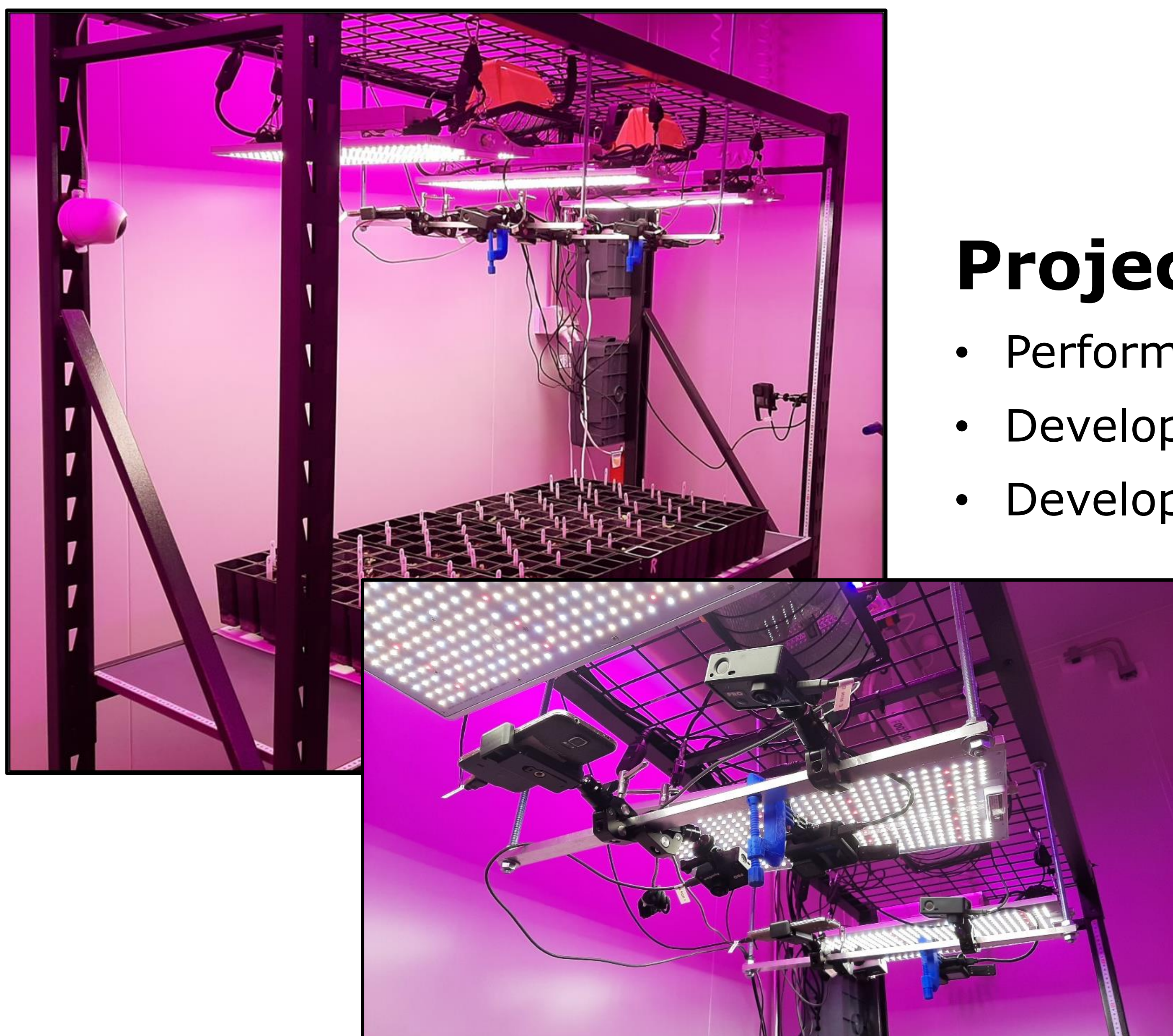
### Research Objectives

- Develop autonomous plant monitoring software
- Expected deployment through NASA's existing mission programs



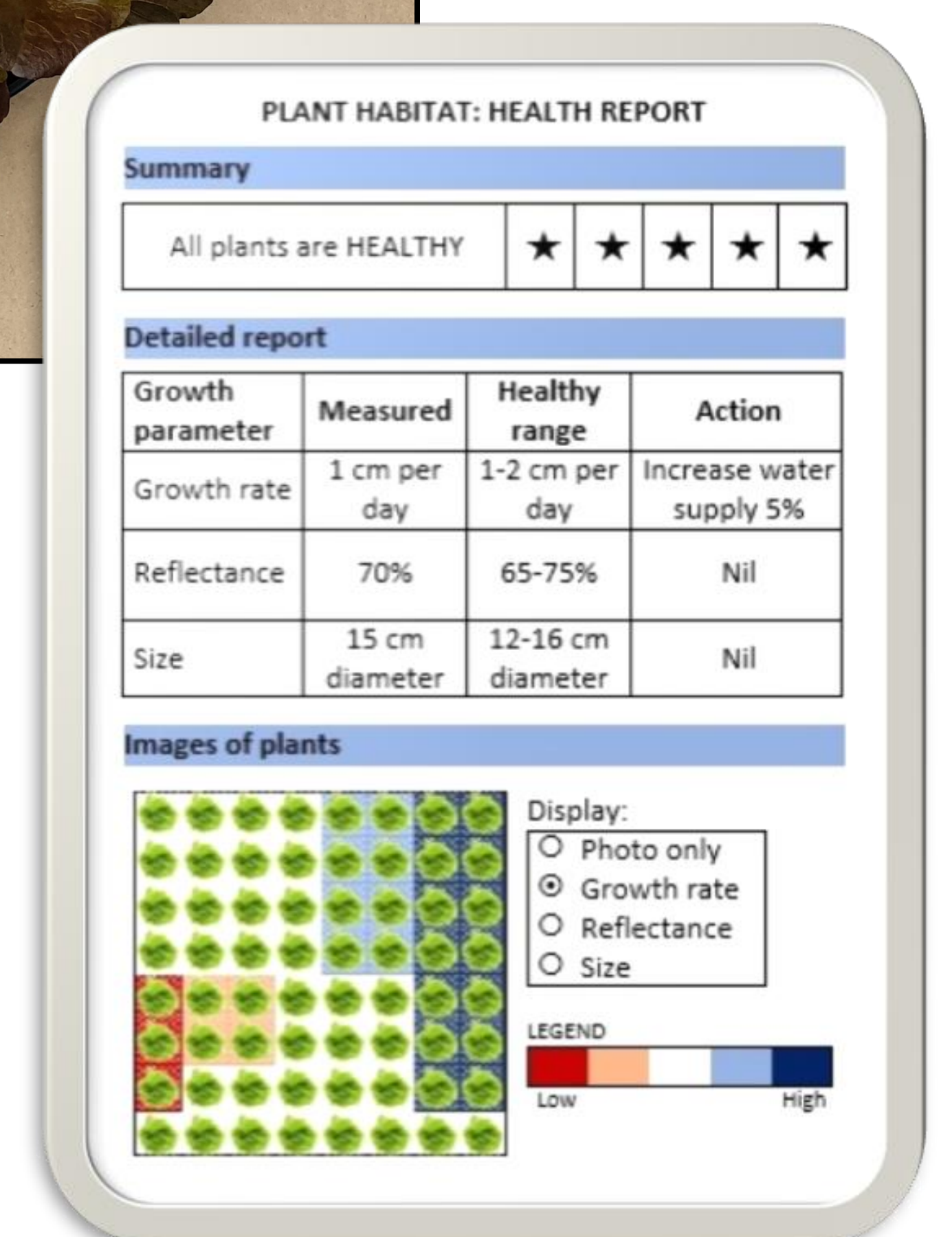
- Space exploration allows new discoveries that improve life and science on Earth
- Food plants are needed in Space for longer missions
- Tending to plants in Space is currently a manual task for astronauts

Sensor test rig, camera and lighting setup



### Project Approach

- Perform ground experiments
- Develop automated algorithms
- Develop software and user interface



Proposed user interface

### Conclusion

This project led by USQ is supporting food production for Space missions by developing automated machine vision techniques and software.

### Why Plants in Space?

- Meet nutrition needs
- Vitamins break down
- Longer missions
- Increased communications lag
- Aesthetics and mental health

Acknowledgements: Australian Space Agency, Colleagues at Kennedy Space Center