

## Smart Agriculture Research

### 2023 Summary: Snow Acres Satellite Connectivity - Evaluation of the Fitness, Accuracy & Efficiency of "The Well" Version 2 Devices

#### INTRODUCTION

Snow Acres Canada developed 'The Well' to be a self-contained soil moisture monitoring system that uses two probes to record measurements every 20 minutes with results reported back to the user via mobile app.

Olds College Center for Innovation (OCCI) provided Snow Acres with observations and data collection surrounding the newest edition of their soil sensor, The Well Version 2 (V2).

#### OBJECTIVES

- Record user experience and observations during inground field installation and seasonal use of 'The Well' V2.
- Create a troubleshooting manual for Snow Acres technical support.
- Identify and quantify portable satellite internet companies.
- Provide a product setup design for the satellite internet connection to create a plug and play solution.

#### STUDY DETAILS

'The Well' V2 has been evaluated in-lab and within a greenhouse environment to complete the following:

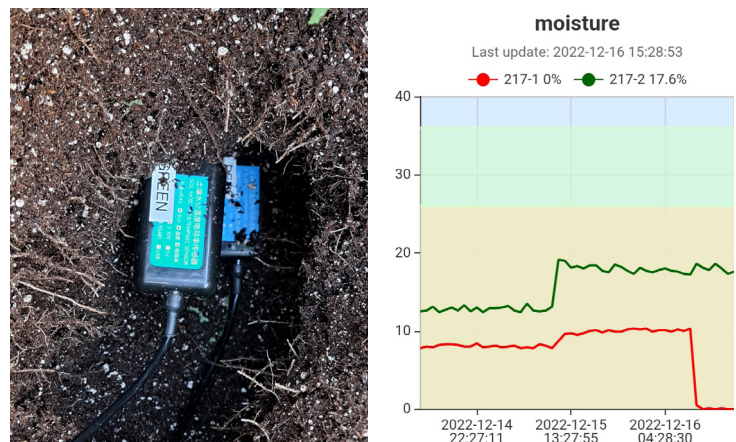
- Compiled a 'Frequently Asked Questions' manual that included:
  - Information acquired from the activation of the 'The Well' V2.
  - Evaluations included: item identification; establishing connections to LoRaWan & Cloud via WiFi; reliability of the LoRaWan & Cloud connections; and continuity of probe recording (missed data).
- Provided satellite connectivity options that included:
  - Identifying compatible satellite companies.
  - Qualification criteria from compatible satellite companies: geographical area coverage, costing models, and devices supported.
  - Functional compatibility analysis and analyzed hardware compatibility, and provided feedback for future satellite connectivity development and testing.

#### RESULTS

The Well V2 is a major improvement and shows great potential for Plug n Play readiness. An evaluation was provided to Snow Acres Canada for their review for further testing and development with recommendations from OCCI to further improve connectivity and user experience.

#### FUTURE RESEARCH

Snow Acres Canada will be evaluating the validation results and determining next steps.



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