



FARM 2050
NUTRIENT TECHNOLOGY TRIALING
PLATFORM (NTTP)

CONSORTIUM FOR PRECISION CROP NUTRITION
(CPCN)

26 JULY 2021

AGENDA

- ▶ Innovation and Start Ups
- ▶ Farm 2050 history and overview
- ▶ NTTP overview
 - ▶ Premise
 - ▶ Context
 - ▶ Technology
 - ▶ Opportunities
 - ▶ Details
 - ▶ Phases
 - ▶ Organizational structure
 - ▶ Timeline
 - ▶ Application and assessment process
- ▶ Sequence of events to date
- ▶ Considerations moving forward

INNOVATION AND START UPS

- ▶ Innovation for innovation's sake or innovation to solve a problem?
- ▶ Innovation does not make the business, the value proposition associated with it does.
- ▶ Innovation is just a power word until the value proposition is demonstrated at commercial scale.
- ▶ The 80:20 rule applied to innovation is often ignored.
- ▶ Failure is not an option vs fear of failure is not an option.
- ▶ Trialing - the thing that can prove the innovation is value added - is often considered separate from business development rather than an integral part of it.
- ▶ Where's your agronomist?

FARM 2050 OVERVIEW

- ▶ Global initiative launched in 2014 by Finistere Ventures and Innovation Endeavors, two of the leading Venture Capital firms in the agricultural technology space.
- ▶ **MISSION:** Overcome the challenge by year 2050 to feed 10 billion people requiring 70% increase in global food production by leveraging deep technology solutions.
- ▶ Focused outcome of greater sustainability generally and nutrient usage specifically.
- ▶ “Coalition of the willing” includes input producers/providers, technology startups, distribution channel players, large industry players, investors, and NGO/Government entities.
- ▶ Equates to approximately 38 partners and 85 total current participants.
- ▶ Offer of an opportunity for participants to collaborate towards better economic, sustainability and environmental outcomes.

NTTP PROJECT PREMISE

- ▶ Macronutrient fertilizers, (N, P, K) are the single largest input spend on modern broad acre farming systems, estimated to be valued over [\$120B.]
- ▶ The total quantum applied annually averages 200M Metric Tons.
- ▶ It is estimated less than 50 percent of this industrial volume is utilized by the targeted planted crops to which they are applied.
- ▶ The balance is volatilized or is transmitted into the water table with often negative environmental impacts.
- ▶ Historically, direct and supplemental nutrient technologies were developed to help farmers in production with Yield as the primary target.
- ▶ Increasing scrutiny of environmental impact on farm has also raised the need for remediation and analytics to meet increasing and stricter regulatory requirements.
- ▶ This offers an economic motivator for farmers and Ag industry players and an opportunity for the program participants.
- ▶ Many new available agtechnologies are focusing on this nutrient use efficiency challenge.

NTTP PROJECT CONTEXT

- ▶ The validation of new agtechnologies is critical to their adoption.
- ▶ Nutrient related technologies have received significant focus in field trials as a key component of a healthy ecosystem.
- ▶ Many nutrient use efficiency challenges are common throughout the world.
- ▶ “State of the art” in agtechnology application varies greatly by geography.
- ▶ Counterseasonal opportunities can be leveraged to accelerate both general and specific solutions.
- ▶ Utilizing existing trial and research efforts will avoid duplication/repetition of ongoing work among participants/partners.
- ▶ Investment opportunities will be generated for technologies that are identified as a result of the Project.

NTTP PROJECT

MAIN TECHNOLOGY COMPONENTS FOR EVALUATION

- ▶ Analysis of nutrient content and usage in soil with both chemical and biological/genetic datasets, enabling improved insight into agronomic practices;
- ▶ Improvement of soil health (both traditional fertilizers, formulations and via novel modes of action including biologicals) and economic/sustainable usage, noting that this goes beyond nutrients;
- ▶ Improved application of nutrients, through digital agronomy and improved physical delivery systems;
- ▶ Mitigation of the outcome of nutrient application, with a particular focus on the dairy industry in New Zealand and Ireland.

NTTP PROJECT OPPORTUNITIES FOR PARTICIPANTS

- ▶ Third party validation of their technologies on a multi-regional level.
- ▶ A global platform to demonstrate their technologies and associated value propositions.
- ▶ A less costly trialing program.
- ▶ Wide exposure to investors, collaborators and potential customers.
- ▶ Added value public relations offered through Farm 2050 in general and the NTTP project specifically.

NTTP SPECIFIC DETAILS

- ▶ First concrete project under the Farm 2050 mandate
- ▶ Scheduled 4-year global project with a counterseasonal format
- ▶ Crops
 - ▶ Dairy pasture - New Zealand, Ireland
 - ▶ Maize - USA, New Zealand
 - ▶ Grapes - USA ,New Zealand
- ▶ Targeted foci
 - ▶ Nutrient analysis
 - ▶ Nutrient delivery
 - ▶ Nutrient uptake efficiency
 - ▶ Nutrient environmental impact measurement and mitigation
- ▶ Initial funding through Callaghan Innovations for New Zealand trials.
- ▶ Participants are expected to provide time and resources to the project.

NTTP PHASES

- ▶ Phase 1 - Testing and calibration of technologies
 - Testing under controlled/homogenous conditions to ensure the technology is fit to accurately quantify nutrient and water dynamics within the plant/soil system
- ▶ Phase 2 - Testing at different spatial and temporal scales
 - Understand what the spatial and temporal capabilities or limitations of the selected technologies
- ▶ Phase 3 - Demonstration at large scale
 - Compare the impact of standard practice vs technology directed practice on production and profitability

NTTP ORGANIZATIONAL STRUCTURE

- ▶ Farm 2050 Liaisons
 - ▶ Jennifer Place, Finistere Ventures
 - ▶ Sara Holman, Innovation Endeavors
- ▶ Project Leads
 - ▶ Technical - Mike Pereira, Finistere Chief Agronomist
 - ▶ Business - Dean Tilyard, Finistere Investment Director New Zealand
- ▶ Geographical Technical Leads
 - ▶ New Zealand - Plant and Food Research
 - ▶ USA Maize - Nutrien
 - ▶ USA Grapes - Western Growers Innovation Center
- ▶ Geographical Advisory Groups
 - ▶ TBD
- ▶ NTTP Steering Committee
 - ▶ 11 members from 10 entities

NTTP STEERING COMMITTEE

- Role is advisory and not managerial
- A clear understanding of the project scope and strategic goals.
- Ensure project performance and approves project deliverables. Make sure the project is meeting its intended objectives from a functional, strategic, and budgetary point of view.
- Project governance – help resolve issues.
- Provide overall direction and guidance to the project to assist in the progression of the project.
- Establish risk tolerances and limits.
- A rotating chairman to manage the meetings and agenda.

NTTP REGIONAL TRIALING LEADS

- ▶ New Zealand - Plant and Food Research
- ▶ Maize USA - Nutrien
- ▶ Grapes USA - Western Growers
- ▶ Ireland Dairy - TBD
- ▶ Regional Advisory Groups - TBD

NTTP COUNTERSEASONAL TIMELINE

- ▶ H2 2021
 - ▶ Launch Dairy in New Zealand
 - ▶ Scoping study Maize and Grapes in USA, and Dairy Ireland
- ▶ H1 2022
 - ▶ Continue Dairy in New Zealand
 - ▶ Prepare for Northern Hemisphere launch
- ▶ H2 2022
 - ▶ Launch Maize and Grapes in USA, and Dairy in Ireland
- ▶ 2023 onward
 - ▶ Use counterseasonal approach to accelerate the pace of the project

NTTP

REQUEST FOR PROPOSALS SUBMISSION FORM

1. Target focus of the technology (check all that apply)

- a. Nutrient Analysis
- b. Nutrient Delivery
- c. Nutrient Uptake
- d. Nutrient Environmental Impact Measurement and Mitigation

2. Brief description of the technology (please also provide access to a non-confidential deck on your company and your technology and any publications/information you wish to provide on technology proof points so far)

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3. Current Stage of development

- a. R&D phase
- b. Proof of Concept phase
- c. Expanded trials
- d. Scale up

[Click or tap to enter any clarifying notes](#)

4. Participation Details

- a. Agreement to comply with information sharing policy (to be defined)

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- b. Internal resources available for trial support (including people and available direct funding)

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- c. Key decision-maker(s) for project interaction

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- d. Company contact person for the project (include current role and CV)

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NTTP ASSESSMENT CRITERIA

I. ASSESSMENT CRITERIA

1. The technology is directed towards positively impacting nutrient usage and reducing nutrient loss to the environment in real time and under real practices within farming systems in terms of:
 - a. Nutrient analysis, and/or
 - b. Nutrient delivery, and/or
 - c. Efficient nutrient uptake, and/or
 - d. Nutrient environmental impact measurement and mitigation
2. The technology demonstrates the high likelihood that it will positively impact farmer/grower economics.
3. The technology has a high likelihood of:
 - a. Coming to commercial scale within 4 years.
 - b. Global relevancy within the target industry.
 - c. Relevancy across a wide range of crops.
4. The participant has a clear plan of involvement in field level execution of the trials and financial contribution to the trialing effort.
5. Reliable data supporting the technology is already available.
6. The technology company has strong Venture Capital or Private Equity funding.

NTTP SELECTION PROCESS

II. SELECTION PROCESS

STEP 1 – Screening by NTTP Business and Technical Leads (Dean Tilyard and Mike Pereira, respectively) against assessment criteria.

STEP 2 – Screening by PFR against relevancy to New Zealand circumstances.

STEP 3 – Joint recommendation to Steering Committee from NTTP Business and Technical Leads, and PFR.

STEP 4 – Selection of Participants by Steering Committee.

NTTP PROJECT SEQUENCE OF EVENTS TO DATE

- ▶ May, 2021 - Call for collaboration within Farm 2050 members
- ▶ June, 2021 - Selection of Steering Committee
- ▶ July, 2021 - Project open for applications
- ▶ August, 2021 - Selection of finalists
- ▶ September, 2021 - Draft trial plans by PFR based on discussions with finalists
- ▶ October, 2021 - Finalize trial plans and public announcement of New Zealand trial participants

NTTP PROJECT CONSIDERATIONS MOVING FORWARD

- ▶ Continue advertising, which is critical, particularly via social media.
- ▶ Continue to revise the FAQ sheet, which is helpful to candidates.
- ▶ Consider this as an iterative process, given the 4-year timeframe of the project.
- ▶ Keep open the application process for the next regional and crop phases.
- ▶ Understand that participant agritech companies may be at different project phases and accommodate that accordingly in the trialing plans.
- ▶ Continue to respect individual company IP while sharing relevant results in an anonymized manner.
- ▶ Facilitate as much as possible the cross-border movement of agritech products where regulatory hurdles may exist (e.g., biologicals).
- ▶ Always keep top of mind that solutions to nutrient use efficiency and other agricultural challenges need to be demonstrated at large scale.
- ▶ Consider the NTTP project to be the first of other projects within the purview of the Farm 2050 mission.

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FOR MORE INFORMATION

[FARM2050.COM/TRIALINGPLATFORM](https://farm2050.com/trialingplatform)