



PRECISION AGRICULTURE CENTER

UTILIZING REMOTE SENSING TO MANAGE NITROGEN AND OPTIMIZE YIELD FOR POTATO

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ENVISIONING A BETTER APPROACH FOR NITROGEN MANAGEMENT EVERYDAY. EVERYWHERE.



- Timely
- Map based
- Actionable
- Calibrated
- MAXIMIZES PROFITABILITY**
by preventing crop yield loss and reduced crop quality

NITROGEN

Soil Variability + Weather Variability = Crop N Variability

REMOTE SENSING

Satellite, Aerial, Drone (UAV)

“Can’t see the density of vines” (Satellite/Aerial) vs “Can’t see tubers underground” (Drone)

NDVI – sensitive to CANOPY COVER: $NDVI = \frac{R_{NIR} - R_R}{R_{NIR} + R_R}$

Identifying Crop N Status

SR8 – sensitive to VINE NITROGEN: $SR8 = \frac{R_{NIR}}{R_{RE} * R_{Green}}$

EXISTING TOOLS MUST BE IMPROVED

Grower: Mr. Potato Grower, Field Name: North Fork Field, Variety: JTL3240, Last Lab Number: 21-15349, E. Date: 6/3/2010

Petioles have LIMITED spatial interpretation

Satellite and drone imagery amounts to LITTLE MORE than a pretty picture

A BETTER AGRONOMIC TOOL

KEY FEATURES: Scientifically-validated, MOST ACCURATE method by using N Nutrition Index. Implemented using our RESEARCH EXPERTISE + patent pending IP.

Using the BEST FEATURES from existing solutions: Economical, scalable, and DAILY data collection; Leveraging EXISTING agronomic data; ADDING VALUE to previous investments.

WHAT ELSE IS POSSIBLE?

Variable rate zone control, Yield forecasting, Irrigation scheduling, Stand counts

COMMERCIALIZATION POTENTIAL

Support from the NATIONAL SCIENCE FOUNDATION: Our group was awarded a Small Business Technology Transfer grant to conduct R&D work that will lead to the COMMERCIALIZATION of INNOVATIVE new products and services.

ON-FARM TRIALS in 2020: We are partnering with potato growers to conduct on-farm trials to TEST OUR NEW TECHNOLOGY and get feedback before our planned initial product offering in 2021.

DESIGN BY LOUANE LEVERICH