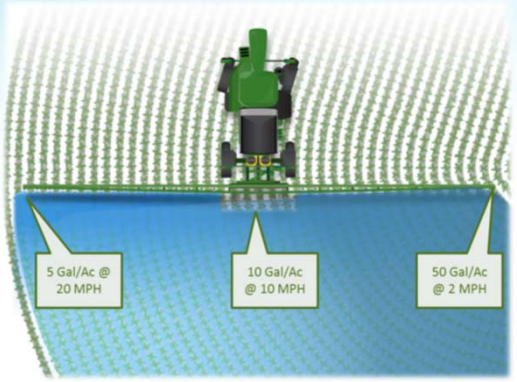
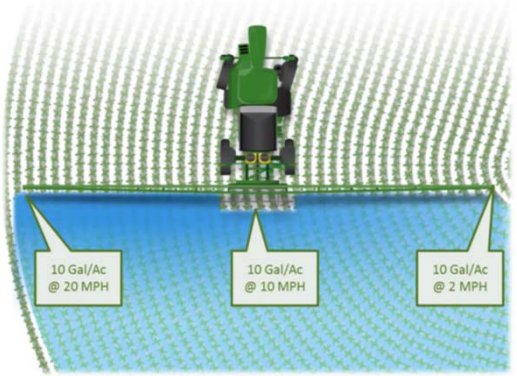
MSU AGRICULTURE INNOVATION DAY

FOCUS ON PRECISION

TECHNOLOGY THAT PAYS





Increased Resolution Results in Increased ROI

Capability	Value
Automated Section Control	Potential of 15 – 20% input savings over manual section control
Individual Nozzle Control (INC)	Potential of 2 – 5% additional savings over Automated Section Control
INC + PWM Control	Curve Compensation capabilities reduce over & under application on curves
Auto Nozzle Switching Capabilities	Increased rate and speed range
Increased PWM Hertz	Improved rate range without skip risk

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- Section Control is the first level of automation technology that delivers immediate RIO
- PWM Nozzle Control enables more precise rate control at a nozzle by nozzle resolution
- PWM Nozzle Control enables a sprayer boom to perform curve compensation, reducing over application on the inside of the curve (phytotoxicity) and under application on the outside of the boom (escapes)
- Curve Compensation on planter works the same way to provide a consistent rate through curves
- Improved PWM frequency reduces risk of skips

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BLUE RIVER TECHNOLOGY

Expanding You Toolbox Provides New Intelligence

- Up to 90% Herbicide Savings
- Improved Weed Control
- Environmental Responsibility
- Future Capabilities

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In-Field Sensors Provide Real-Time Data and Actionable Insights

Sensors	Decision Opportunities
Temperature & Relative Humidity (RH)	Evapotranspiration, Chill hours, Degree days, Frost alert
Wind speed & direction	Evapotranspiration, Spray, Disease modeling
Rain gauge	Field condition, Irrigation scheduling
Leaf wetness	Disease modeling, Spray timing
Solar radiation	Evapotranspiration
Moisture Probe	Field condition, Irrigation scheduling, Stress Management

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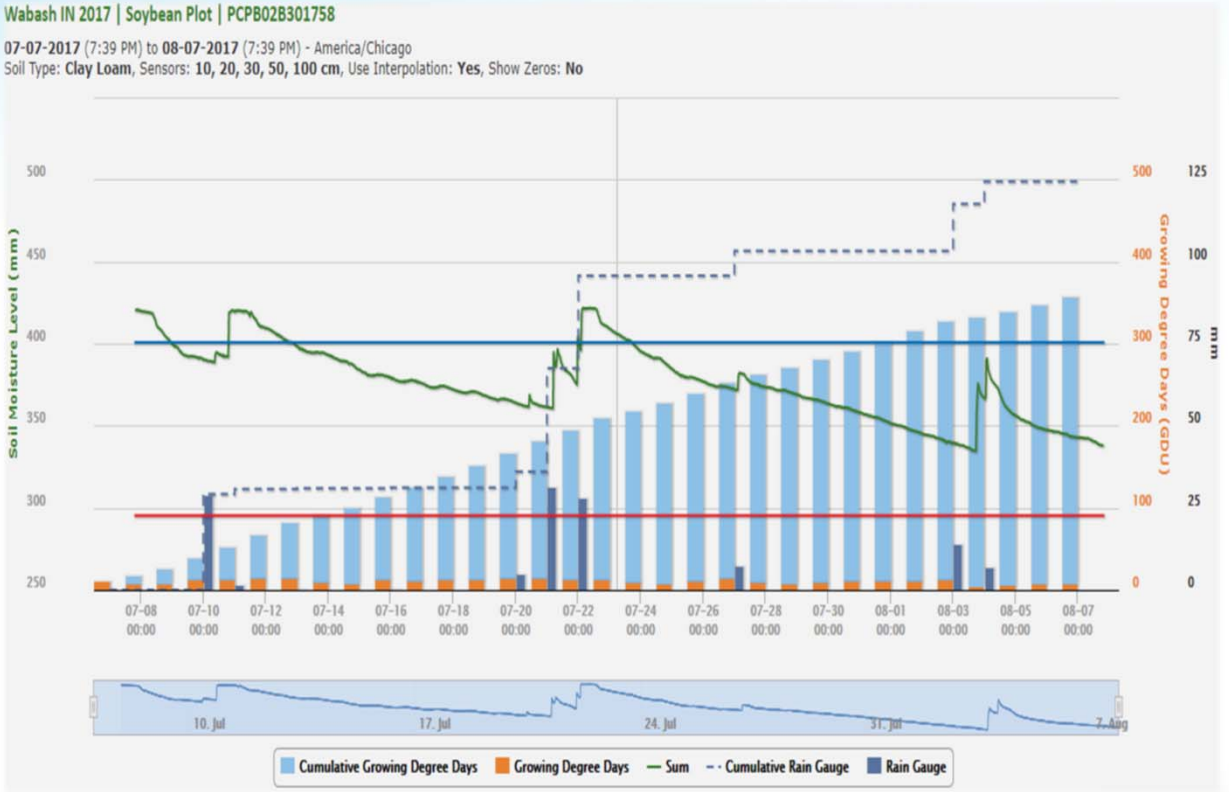

- Few decisions can be made in-season that will drive actions to directly impact ROI
- Leveraging in-field sensors may provide the highest resolution, real-time data
- Decisions should be based on *Intelligence*
- *Intelligence* must be derived from proper analysis of multiple, accurate pieces of information

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Precise Application Data Enables Optimal Nutritional Placement

Feature	Detail
Nutrients Detected	Nitrogen, Ammonium-N, Phosphate, Potassium, Dry Matter
Detection Frequency	>4000 times per second
Target	Product can be applied based on a target rate for one nutrient and a limit rate for a second nutrient
Control	Tractor Speed Control + Flow Control (on compatible models)
Documentation	2630 Display, 4600 Display, 4640 Display, John Deere Operations Center

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- Deliver targeted rate of a specific nutrient without exceeding a secondary
- Determine site specific mineral requirements remaining for the optimal nutritional profile
- Manage variability between loads and provide detailed data for records without requiring samples
- Provides documentation of manure quality as opposed to quantity

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