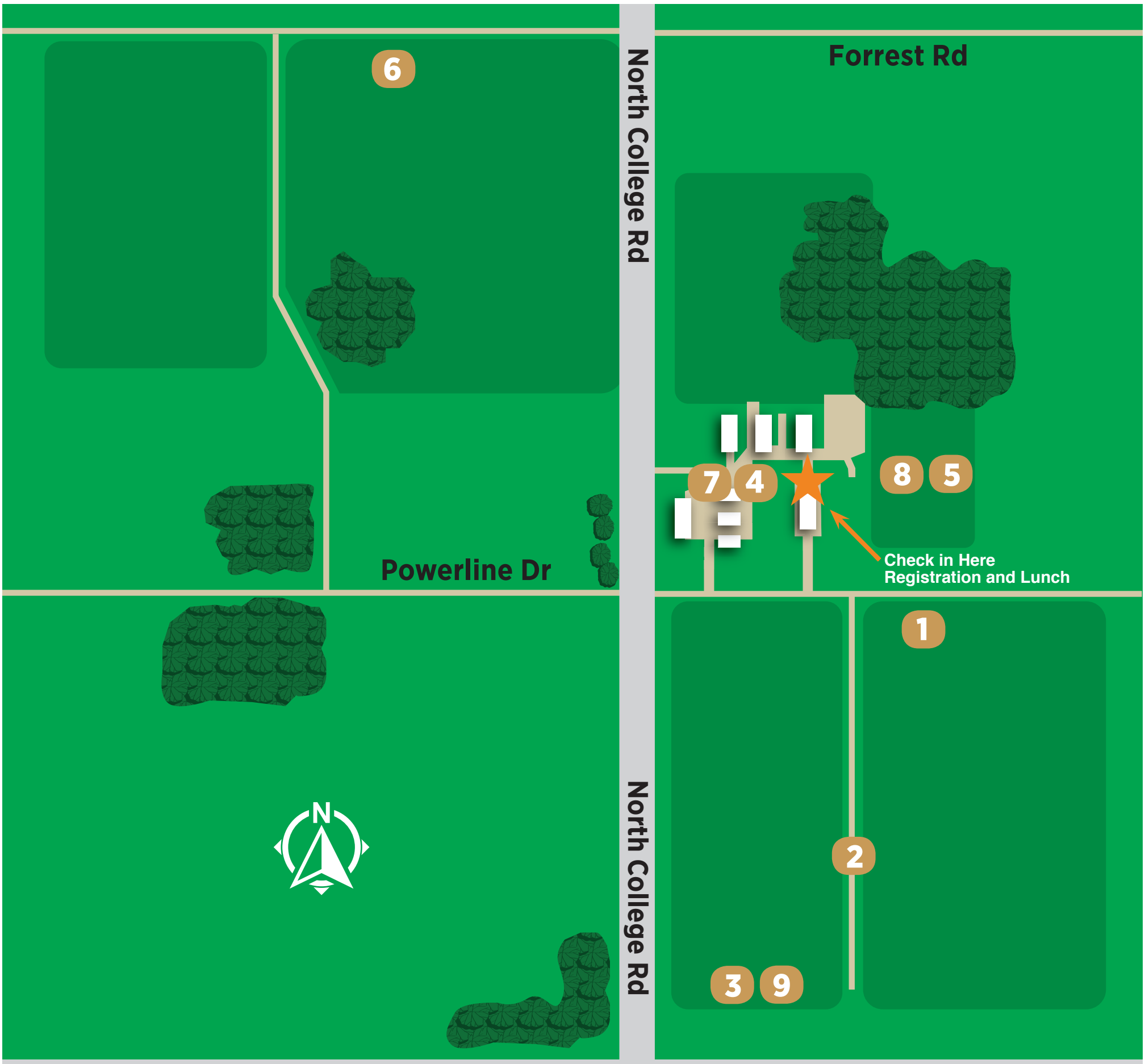
College of Agriculture and Natural Resources
MICHIGAN STATE UNIVERSITY

MSU AGRICULTURE INNOVATION DAY

FOCUS ON PRECISION TECHNOLOGY THAT PAYS



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FOCUS ON PRECISION TECHNOLOGY THAT PAYS

Producers will gather at MSU Farms in Lansing, Michigan, where experts from throughout the country will detail how implementing technology that aids in decision-making can improve yields, increase profit margins and reduce environmental impacts.

The free event, which runs from 8:30 a.m. to 5 p.m., features nine field-based sessions focused on specific technological aids that will assist producers in making farm technology goals.

3750 N. COLLEGE RD. LANSING, MI 48910

Schedule

8 a.m.	Check-in/Registration
8:30 a.m.	Welcome
8:45 a.m.	Load Wagons
9:00-11:40 a.m.	Educational Sessions: (5 sessions: 9:00 a.m., 9:40 a.m., 10:20 a.m., 11:00 a.m., 11:40 a.m.)
12:15 p.m.	Lunch and Program
1:30 p.m.	Load Wagons
1:45-4:45 p.m.	Educational Sessions: (4 sessions: 1:45 p.m., 2:30 p.m., 3:15 p.m., 4:00 p.m.)

RUP credits = 8

Approved CEUs

Nutrient Management: 1
Soil & Water Management: 0.5
Crop Management: 1
Precision Ag: 2

Presentations

Focus on Technology that Pays Featured Sessions

1 Smart Ag: Where Is It Going?

Making data-based decisions to improve the farm's bottom line is advancing at a rapid pace with improvements in technology. This session explores how independent technology solutions can be combined into a suite of technology options to increase productivity and profitability on your farm. Jason Witkop of John Deere will specifically explore the use of sensors for nutrient and pesticide management and briefly discuss where trends in "Smart Ag" are headed including autonomy in agriculture. Participants will learn how smart agriculture can improve production, boost the farm's bottom line and even help protect the environment. Participants will leave with an understanding of "Smart Ag" and whether investing in it is right for their farming operations.

2 There's an Ag App for That.

With thousands of apps available for mobile devices that help manage nearly every aspect of an agricultural operation, farmers want to know which ones are worth their time. Presenters will share recommendations on several useful, free apps as well as fee-based ones available for both iOS and Android devices, and see a real-time demonstration of a field-based application.

3 Precision Soil Sampling: Every Farm Needs It!

This session explores proper technology and protocol of soil sampling fields for precision agriculture. Participants will learn how accurate soil sampling and GPS equipment aid in assessing soil fertility levels, how grid size affects fertility maps and how fertility management zones help farmers follow soil fertility plans that allow for precise variable rate applications of nutrients.

4 Remote Sensing to Develop a Prescription Map

Well-timed, overhead bird's-eye view pictures can be useful, but the true power of drone imagery comes from the combination of multi-spectral images and analytics to turn pictures into information that drives decision-making. Participants will learn how drones and other options, including airplane and satellite-based imagery, are used to develop a prescription map of spatially variable input (seeds, nutrient etc.). While the best platform ultimately depends on goals, requirements and scale, drones have the advantages of being able to collect detailed images on short notice and without interference from cloud cover. Presenters will illustrate how historical yield

5 Planter Calibration: Seed Placement Pays.

While advances in planter technology have given producers tools to improve seed placement, management is still key. This session looks at seed placement, discusses the fate of seeds not planted uniformly and presents steps producers can take to improve placement, yield and the bottom line. Participants will be able to see the impact of plant spacing on crops recently emerging following wheat and crops planted in the spring.

6 The Art and Science of Variable Rate Seeding

Precision GPS systems and variable rate seeding (VRS) planters give growers access to more data than ever before, but knowing which data is needed to maximize profitability can be confusing. Participants will learn how to evaluate various data layers, exploring which data layers should be used to create prescriptions. Presenters will give live on-screen demonstrations creating management zones using various commercially available platforms and later show the results as they walk field demo plots planted to variable and fixed seeding rates to evaluate agronomic response to seeding rates.

7 Yield Monitor Data and Proper Calibration: A Four-Step Process.

When yield monitor data is used to make management decisions, it is critical to identify high- and low-yielding areas of each field. Determining yield rates is not possible without proper calibration of the mass flow sensor, moisture sensor, distance measurement and vibration calibration of a yield monitor. Presenters will demonstrate how yield monitors work and how to use them for developing accurate yield maps, especially when using them for variable rate nutrient application, creation of management zones and other uses. Participants will learn how to calibrate a monitor at four flow rates and how improper calibration could over- or under-estimate yield.

8 Feeding Crops with Sensor-Based Variable Rate Nitrogen Technology.

Variable Rate Nitrogen Application (VRA-N) is a management approach for applying the correct amount of nitrogen in the right place based on spatial variability across the field. Real-time sensor-based VRA-N adjusts the application rate on the go, based on reflected light from crop foliage at sidedress time. Presenters will evaluate and compare the economics and effectiveness of on-farm, real-time VRA-N with single-rate applications based on grid soil sampling, crop yield potential, pre-sidedress nitrogen test (PSNT) results, in-field chlorophyll readings and other best practices. Participants will have an opportunity to interact with the VRA technology, learn about the economics and accuracy of VRA-N versus single-rate applications, and take home practical recommendations for implementing VRA-N technologies.

9 Using the Michigan EnviroImpact Tool when Applying Manure.

Manure is a good source of nutrients for crops and it is important for farms to focus on ways to reuse this valuable resource for crop production. With better planning of manure nutrient applications, farmers can protect the environment and reduce the use of commercial fertilizers while saving money. The Michigan EnviroImpact tool shows daily runoff risk across Michigan using National Weather Service data about precipitation, soil moisture, temperature and landscape characteristics. Presenters will discuss how the tool works and how farmers can use this information as a decision-support tool to effectively plan manure application.

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