

# ADVANCED SOILS & AGRONOMY

## Laboratory Course

Hyatt Place, Lenexa, Kansas | December 9-12, 2026

### THE OPERATOR'S MANUAL YOU WERE NEVER GIVEN

#### WHY THIS COURSE

Farmers today - conventional, regenerative, transitional, or organic - face rising input and fuel costs, increasingly unpredictable weather, tighter margins, resistant weeds, insects and diseases, and ongoing nutrient, soil, water, and carbon losses. For decades, the answer to shrinking margins has often been "**get bigger or get out.**" But increasing acreage does not necessarily increase efficiency or profitability. The next step is different: "**get smarter or get out.**"

Most farmers have an extraordinary command of machinery. They can diagnose, maintain, adjust, and operate precision planters, combines, sprayers, and tractors. Yet few have been given the same level of training in the mechanics of soil and crop function. **Our objective is to bring crop and soil knowledge up to the same level as machinery knowledge.**

#### WHAT YOU WILL LEARN

- **Plant physiology:** Understand how plants function, why they function that way, and how plant performance changes under different conditions.
- **Plant nutrition:** Understand how nutrition alters plant function and how to manage nutrition from the soil to the leaf - including field observation, testing, nutrient selection, timing, and application.
- **Field diagnostics:** Learn to interpret and manage insects, disease, weeds, soil compaction, water infiltration, erosion risk, and other signals that reveal what is happening in the crop-soil system.
- **Brix and crop performance:** Understand what crop Brix can indicate, why it changes, and what management decisions can improve plant performance when conventional approaches fall short.
- **Yield and ROI:** Understand where crop yield comes from, what limits it, and how to make management decisions that improve efficiency, resilience, and net return.

#### FROM BASIC SCIENCE TO PRACTICAL AGRONOMY

The course connects foundational science - including water, carbon, photosynthesis, mineral nutrition, soil microbiology, plant signaling, and energy processes - to practical crop management. The purpose is not to turn farmers into chemists or microbiologists, but to give them enough understanding of the system to diagnose problems, understand why they are happening, and know what to adjust.

#### WHAT YOU TAKE HOME

The goal is for every participant to leave with an actual **operator's manual and a plan of action** that can be applied on the farm the following season. Many operations have already adopted cover crops, precision planting, improved equipment, and new management practices without seeing the increase in net ROI they expected. They may still face the same weeds, insects, diseases, and rising input costs. This course addresses the underlying system rather than simply adding another practice or product.

**WHAT IS HAPPENING? • WHY IS IT HAPPENING? • WHAT CAN I CHANGE?**