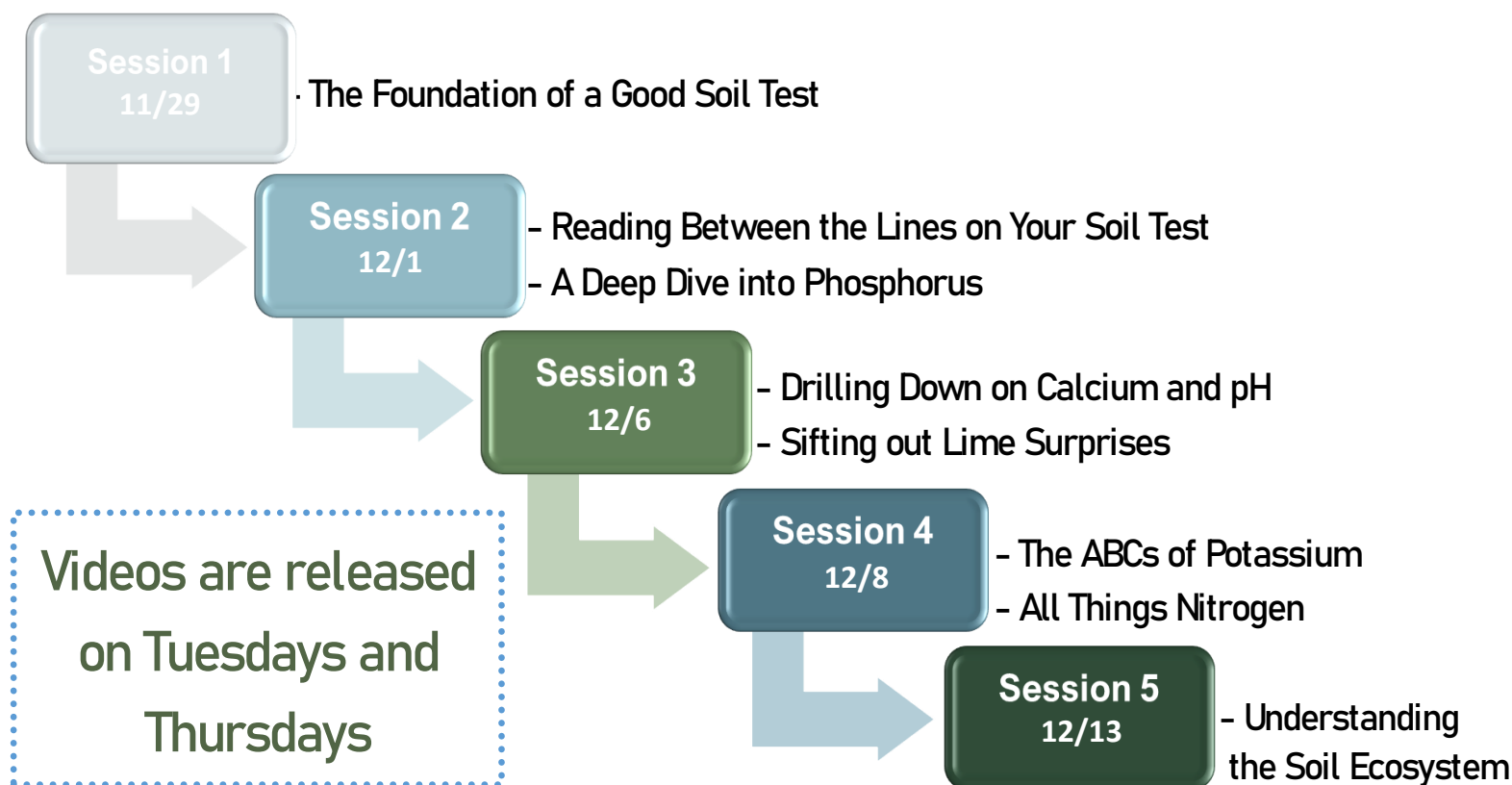


# Crop-Tech Consulting Inc.

## 2022 Beyond the Basics

5-part series on the 4R systems approach to soil tests, fertility, and nutrient management.



### To Register :

- ⇒ Register at: <https://www.croptechinc.com/BeyondTheBasics>
- ⇒ You will receive an email with a username and password to log into the viewing site
- ⇒ Videos will be on a metered release at 12:01 AM on 11/29, 12/1, 12/6, 12/8, 12/13
- ⇒ You can submit questions on the viewing site and a Q & A video will be posted after 12/13 answering questions that were sent in.
- ⇒ Your log in and password will get you access to the material through December 31st, 2022.

# Beyond the Basics

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## Session 1 – Released: Tuesday, November 29, 2022

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### The Foundation of a Good Soil Test

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- ⇒ Major schools of thought for how to pull samples and write recommendations
- ⇒ What method Crop-Tech uses and why
- ⇒ What the soil test can tell you
- ⇒ Why we build zones in a field, and how that plays into a systems approach
- ⇒ Using layers of data to build your zones (aerial, LiDAR, yield maps, soil lines)
- ⇒ The importance of knowing before making a recommendation:
  - \* How the sample was pulled
  - \* When the sample was pulled
  - \* What lab ran the test, and what extraction method was used
  - \* What units are the results reported in

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## Session 2 – Released: Thursday, December 1, 2022

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### Reading Between the Lines on Your Soil Test

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- ⇒ How to read the values reported and how to interpret them to make the best management decisions regarding:
  - \* Organic Matter
  - \* Cation Exchange Capacity
  - \* P1 and P2
  - \* Base Saturation
  - \* pH

### A Deep Dive into Phosphorus

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- ⇒ Availability in the soil, and the plant uptake process
- ⇒ What role it plays in the plant
- ⇒ Phosphorous tie-up and what that changes in terms of management
- ⇒ All things starter fertilizer

# Beyond the Basics

## Session 3 – Released: Tuesday, December 6, 2022

### Drilling Down on Calcium and pH

- ⇒ Availability in the soil, and the plant uptake process
- ⇒ What role it plays in the plant
- ⇒ How to use the pH values on a soil test to decide when, how much, and what type of lime to apply
- ⇒ What can cause false or varying pH results

### Sifting out Lime Surprises

- ⇒ How to evaluate a lime source
- ⇒ Vocabulary for understanding acronyms on a lime sample
- ⇒ How lime quality standards differ between states.
- ⇒ Why a good spread pattern matters and overcoming obstacles to achieve it.

## Session 4 – Released: Thursday, December 8, 2022

### The ABCs of Potassium

- ⇒ Availability in the soil and what affects it
- ⇒ Plant uptake process and what impedes it
- ⇒ What role it plays in the plant
- ⇒ What causes a  $K^+$  deficiency, how to identify it, and what it does to the plant
- ⇒ Effects of an abundance of  $K^+$  creating imbalances in the soil

### All Things Nitrogen

- ⇒ Different sources: Ammonium Nitrogen ( $NH_4^+$ ), Nitrite ( $NO_2^-$ ), Nitrate ( $NO_3^-$ )
- ⇒ The conversion process between the different forms, and factors that influence it
- ⇒ What source the soil microbes like best, and what the plants use most efficiently
- ⇒ How and when to protect against volatilization and leaching
- ⇒ Nitrogen Extenders
- ⇒ Illinois Soil Nitrogen Test (ISNT) and how we use it to variable rate Nitrogen
- ⇒ VRT Nitrogen and it's affect on soil health and organic matter

# Beyond the Basics



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 Session 5 –Released: Tuesday, December 13, 2022 

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## Understanding the Soil Ecosystem

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- ⇒ Examining soil microbes' role in growing a crop
  - \* Heterotrophs vs autotrophs
  - \* Bacteria and fungi, small particles with big roles
  - \* Stages of organic matter
  - \* The carbon cycle and the importance of the carbon to nitrogen ratio
  - \* Nutrient cycling-what is involved and when do you see returns



Crop-Tech Consulting Inc.

Phone: 646-801-0591

Email: [Events@CropTechConsulting.com](mailto:Events@CropTechConsulting.com)

Website: [www.croptechinc.com](http://www.croptechinc.com)