“To most people, this is just dirt. To a farmer it’s potential.”

This is NOT a talk about Soil Health, this is a talk about making Soil Healthy

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What we aren’t going to talk about
Definition of Soil Health

• NRCS: the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans.

• Continuum Ag: Balance
Benefits of Soil Health

- Long term sustainability
- Biomimicry
- Reduce inputs
- Improve yield
- Per acre profitability
- Balance soils
- Improve water quality
Tests for Soil Health

- Haney Soil Health Test
- Cornell Soil Health Assessment
- PLFA
- SLAN
- VAST
- Organic Carbon
- Lots of others - all are tools to help!
Not a talk about soil health...so what are we going to talk about?

- What we aren’t going to talk about
- What we’ve learned so far
- How we together can make soil healthy
What we’ve learned so far
Study and Document improving Soil Health

- Simple trials evaluating practices and products
- Use testing to quantify progress
  - Continuum Ag Haney testing:
    - 2016 = 200 Tests
    - 2017 = 1,000 Tests
    - 2018 = 7,000 Tests
- Document with videos and pictures
Logistics of Soil Health

• What practices work for me?
  • Cover crop species
  • Cover crop rates
  • Termination timing

• What products can help?

• How is my soil health today?

• How can I monitor improvements?
Economics of Soil Health

• Reducing risks

• Improving yield while reducing inputs

• Lost 20bu/ac our first year with cover crops

• Farming based on profit not yield
Tillage vs No-Till - Solvita Respiration

Respiration via Weather

Solvita CO2 Concentration (ppm) & Temp.

- Till
- No Till

Max F
Soil F

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We can improve Soil Health

- Soil parameters fluctuate throughout the year
  - Pulling samples twice/month

- During the 2017 season, respiration was increased by:
  - Manure up 11%
  - Cover crops up 5%
Optimizing Nutrients

• Evaluate nutrient availability as driven by:
  • Management
  • Products
  • Weather
  • Soil Biology

• Improved soil health can help improve nutrient use. Improved nutrient use pays for improving soil health.
Nitrogen: Cover vs No Cover
Nitrate: Winter of ’16–‘17

- Harvest and high biological activity
- Massive N release
- Mineralization
- Cover holding the N

Graph showing inorganic N levels in lbs/ac from June to April.
How Much is Tied Up?

Inorganic N via Weather

Cover vs No Cover

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The “Carbon Penalty”

• “Carbon Penalty” from cover crops caused an average C:N of 70:1
  • Desired = >20:1
  • Successful cover crop use averaged 12:1
How can we all make Soil Healthy?
Collaborate Together

- Learning synergies
- Network
- Share on social media
- Side-by-side trials
- Repetitive testing
Applications Today

- Evaluate your current soil health
- Spring test
- Sample before application then split your treatment
- Soon - Use sensors and adjust rates/timing based on real time data
CO2 Sensors

Real Time Gas Level

3rd year Cover Crop Soil

No-Till

Took out of jar and blew on it
Continuum Ag is the Catalyst

- Together we can build attention and learn
- Try new things and document the pros and cons
- Document each baby step
- Use data to monitor and accelerate progress
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