A FARMERS PERSPECTIVE TO MANAGING SOIL SUSTAINABILITY

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Crop Manager
Dykhuis Farms, Inc.
Holland, MI
• Holland, MI

• Owned by the Dykhuis Family, Robert (Founder) and Joe (President) lead the day to day operations of the farm

• Large Hog Farm

• Farming 3,000 Acres of Corn, Soybeans, and Wheat in West Michigan
SUSTAINABILITY
THE ABILITY TO BE MAINTAINED AT A CERTAIN RATE OR LEVEL

WHAT DOES IT MEAN TO DYKHUIS FARMS?

- Can we maintain profitability? Short or long term ROI
- Can we maintain and improve our resources?
- Do the decisions we make have a positive or negative impact?
  - On both a farm and our environment
MANAGING SOIL HEALTH

- Pattern tile
- Minimum tillage/Strip-tillage
- Grass waterways
- Cover crops
INCREASING SOIL STRENGTH

• SOIL STRENGTH =
  • CROP ROTATION
  • PERMANENT SOIL COVER
  • REDUCED TILLAGE
KUHN KRAUSE GLADIATOR STRIP-TILL

- Produces a great seedbed, especially in heavier soil
- Will warm the soil up much quicker than No-Till
- Allows the plant to get “with the program” much quicker
- Maintains No-Till benefits between the strip (soil pore space)
- Added tillage expense as compared to No-Till
Cover Crops… Do They Pay?

- Dykhuis Farms is still in the infantile stages of cover crop usage, but all in!
- **Short Term Benefits**
  - Year round ground cover
  - Constant environment for soil life to live
  - "Sponge" for As Applied Nutrients aka Manure
- **Potential Long Term Use Benefits (3+ Years)**
  - Alleviate soil compaction
  - Increase organic matter
  - Increase crop yields
MANAGEMENT CHALLENGES GROWING COVER CROPS IN WEST MICHIGAN

- Length of growing season once crops come off
- Limited seeding methods
  - High-boy seeder
  - Airplane
  - Interseeding early in vegetative stage in corn
- Need moisture and sunlight for seed to germinate
Also looking at other summer harvest small grain niche markets in West Michigan
NUTRIENT MANAGEMENT AT DYKHUIS FARMS

- **Intensive soil sampling (2.5 ac grids)**
- **Tissue testing**
- **Nutrient applications based off production capabilities per farm (Compilation of historical yield data)**
- “Spoon” feeding the crop with multiple applications of nutrients
- Micro-managing every acre for nutrient application
DRAG LINE MANURE

- 25 million gallons produced/year
- 95% of DFI manure is applied via dragline
- Row units incorporate manure with vertical tillage
- Minimal soil disturbance
- Great food source for microbial activity
- Awesome cover crop starter fertilizer
PLANTER IS 2\textsuperscript{ND} APPLICATION

- Applying N,K,S, and Micronutrients
- 50-70\# of N
- This helps to increase sidedressing window
360 YIELD CENTER Y-DROP

- Allows maximum flexibility in N timing
- Will monitor Soil N (NO₃ and NH₄)
- Will apply supplemental N when soil N “Tank” gets low
- Goal is to apply in the V8 - V10 timeframe
- Allows us to let mother nature show has the cards we have been dealt for the year and manage accordingly
- Avoids putting all our N needs in one basket
- Increase N efficiency = #N per Bushel < 0.8
- Ability to apply other micros that would otherwise leach past the corn roots before interception (K, S, and B)
• Ability to fertigate manure, roughly 5# N per 1000 gal
• Most cost effective way to apply manure
• Can utilize the growing crop to sequester applied nutrients
• Added benefit when water is needed
• Have to watch for applying more than soil’s water holding capacity, can lead to nutrient runoff
WHAT DOES THIS ALL MEAN??

- Improving soil health by utilizing conservation management
- Ability to not overapply nutrients by studying the crop and applying what the crop is asking for
- Using cost effective measures to apply nutrients
- Increasing yields by combining all of these measures
THANK YOU!