Site-Specific Management for Whole Farm Sustainability and Resource Conservation

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Outline

- Whole farm sustainability
- Site specific management as a tool to implement sustainability
  - Adaptation
  - Methods
Sustainability

• Sustainability

• Whole Farm Sustainability

• Many operations take place on a farm

• No individual operation is going to increase our total farm efficiency to 100%
Site Specific Management i.e. Variable Rate Management

- Variable Rate
  - Fertilizing, seeding, watering

- Fertilizing and seeding currently provide the biggest impact to the bottom line
Variable Rate Technology

• Started with Grid Sampling 20 some years ago
Variable Rate Technology

- Very good method for fertilizer management, increase yield, decrease waste, improve the bottom line
So Why Doesn’t Every Farm Utilize Variable Rate Technology?

• Currently a lull in adaptation
• First pig push led by high crop prices in 2010s

Source: USDA WASDE Report 6.11.19
KSU Dept. of Ag Econ
www.AgManager.info
Some Methods for Increasing Adaptation of VRT

- Lower cost
- Reduce complexity
A New Tool Is Enabling Us To Do Just That

• Aerial imagery
  • Quality imagery has become much more affordable and reliable in recent years
Current Methods for Variable Rate

• Grid Sampling and Yield Maps are most commonly used for management Zone creation and VRT prescriptions
Satellite Imagery Can Now Be Used to Create Zones for VR
Once Zones Are Created a Variety of VR Services Can be Applied

- Zone soil sampling
  - VR Fertilizer
  - VR Yield goals
- Planting prescriptions
- Crop protection
- Soil amendments
- Water management
Zone Creation From Imagery Is Simple and Fast

• With a quality image the whole process takes less than 10 minutes

• Once created these zones can be used over and over

• Thus reducing labor and cost
Another Reason This Method is Increasing Adaptation

- Zone Soil sampling costs the same per sample as Composite Sampling
- So if a field is currently being composite sampled there is no cost increase to have it zone sampled

  - Many/most of agronomists already “Zone Sample”/sample according to production zones but they do not utilize the mapping technology
  - Easy step for both Agronomists and Growers
Easily Created Zones and Zone Management Mentality

• Hopefully lead to alternative uses of unproductive zones
• Another method of site-specific management we have started to utilize is through our local Conservation Programs
• Several programs implemented in Nebraska currently
  • No longer are they just 10 year CRP contracts for whole large fields
  • Moving toward short term agreements for small low productive sites within fields
    • Corners for wildlife, wheat stubble programs, 2 year plantings with early successional species only, Rainwater Basin Joint Venture offering payment for the wet spots in the field
    • Working to increase the implementation of these programs by educating crop advisors, one more tool to increase the whole farms sustainability
Thank You