**IMAGE RESOLUTION**

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Data Points/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 meter image</td>
<td>806</td>
</tr>
<tr>
<td>Yield data</td>
<td>196</td>
</tr>
<tr>
<td>30 meter image</td>
<td>135</td>
</tr>
<tr>
<td>EC/EM Soil Mapping (13 mph)</td>
<td>43</td>
</tr>
<tr>
<td>2.5 acre grid sample</td>
<td>.4</td>
</tr>
</tbody>
</table>
MANAGE EXPECTATIONS

- **Reality is that not every image is going to show an issue**
- **Proper interpretation of images requires ground truthing**
- **What can you do if an issue is found**
- **Image presentation is a major influencer on perception**
- **Let the image do the talking**
NO VARIABILITY = A BAD THING?
PICTURE = 1000 WORDS

FARMERS ARE STUBBORN!!!

THE RIGHT IMAGE CAN OPEN EYES FOR OPPORTUNITY...
WHAT'S MY RETURN?

Applying Soygreen

2013 In-Season Image of Soybeans

2016 VR Rec

Legend | Management Zone       | Avg |
-------|------------------------|-----|
Non Fe Chlorosis | 76.04                   |
Fe Chlorosis     | 57.58                   |
All              | 68.75                   |

2013

3 lbs/ac soygreen

none

Legend | Management Zone       | Avg |
-------|------------------------|-----|
Non Fe Chlorosis | 86.04                   |
Fe Chlorosis     | 82.14                   |
All              | 85.02                   |
Applying Soygreen

<table>
<thead>
<tr>
<th>Avg Bu/ac Diff</th>
<th>Soybeans $/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>$9</td>
</tr>
</tbody>
</table>

$/acre Difference $45

$/ac to apply $18

Net Gain/acre $27

**WHAT'S MY RETURN?**

- **2013 – No treatment**
  - Non Iron Chlorosis areas averaged ~12 bu/acre higher than Iron Chlorosis areas

- **2016 – VR treatment**
  - Non Iron Chlorosis areas averaged ~7 bu/acre higher than Iron Chlorosis areas
3 lbs/ac
soygreen
none
WHAT IS GOING ON HERE?
WHICH IMAGE IS MORE VALUABLE?
WHAT DO THE COLORS MEAN?

Less vigor

June 2\textsuperscript{nd}, 2017
GS: V6 – V7
Height: \(~14\text{ in}\)

June 15\textsuperscript{th}, 2017
GS: V7 – V9
Height: \(~18 - 30\text{ in}\)

June 22\textsuperscript{nd}, 2017
GS: V9 – V11
Height: \(~3.75\text{ ft}\)

More vigor
IMAGERY IN THE FIELD

- The data is a guide; NOT AN ANSWER
- Ground truthing remote sensed data is key to getting the most out of the data
IMAGERY IN THE FIELD

LANDSCOUT 2

SIRRUS
IMAGERY IN THE FIELD
IMAGERY IN THE FIELD
IMAGERY IN THE FIELD
• The data is a guide; **NOT AN ANSWER**

• Ground truthing remote sensed data is key to getting the most out of the data
HAVE YOU MISSED ANYTHING?
HAVE YOU MISSED ANYTHING?
UAV’S AND SATELLITE IMAGERY

- UAV’s are used to get a quick bird’s eye view of the field. How much of the field do we cut for wet corn and how much do we leave for dry grain?
- Satellite imagery helps to visualize and analyze the field's condition.
CREATING VR RECS

- Verify VR Recs:
  - Seeding
  - Fertility
  - Irrigation

- In season:
  - VR Top-dress
  - VR Side Dress
  - VR Growth Regulators
Hybrid Trials

Hybrid B out performed Hybrid A

Hybrid X stood up to high winds where Hybrid Y green snapped

Fungicide Trial

Fungicide was applied to west half of milo field in late July. Determined differences were from previous farming practices.

Before

July 17, 2015

After

Aug. 6, 2015

Check Image

Sept. 8, 2012

Fungicide was applied to west half of milo field in late July. Determined differences were from previous farming practices.
Just a Piece of the Puzzle!

1. Identify Variability
2. Take Soil Samples
3. Analyze Results
4. Create a VR Rec
5. Apply VR Rec
Just a Piece of the Puzzle!

1. Identify Variability
2. Collect Soil Texture (EC/EM) Data
3. Analyze Results
4. Pull Zone Samples
5. Create VR Rec
6. Apply VR Rec
REMOTE SENSING: HOW TO MAKE IT VALUABLE

1. Manage Expectations!
2. Ground Truth!!
3. Just One Piece of the Puzzle!!!