YIELD EDITOR
BETTER DATA, FASTER

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From Sensors to Yield Maps
Why clean yield data?

- Yield data ALWAYS contain problems
  - Operational problems
    - Data collection errors
    - Calibration issues
  - Sensor system related problems
    - Sensor failure, noise, accuracy issues
    - Timing/filtering issues for individual sensors
    - Multiple sensors can magnify problems
Rapid change in velocity

Corn Yield (bu/ac)
- 174 to 2963
- 165 to 174
- 153 to 165
- 145 to 153
- 138 to 145
- 132 to 138
- 126 to 132
- 120 to 126
- 113 to 120
- 6 to 113
Incorrect delay time(s)

- Delay Time = 9 s
- Delay Time = 14 s

Corn Yield (bu/ac):
- 124 to 180
- 110 to 124
- 101 to 110
- 95 to 101
- 89 to 95
- 83 to 89
- 76 to 83
- 68 to 76
- 52 to 68
- 30 to 52
Ramping at crop edge

11 Second Shift Applied

- Grain Flow Rate (lb/s)
  - Entering Crop
  - Exiting Crop
  - Header Up/Down

Time from Crop Edge (s)
Ramping at crop edge

Corn Yield (bu/ac):
- 124 to 207
- 110 to 124
- 102 to 110
- 95 to 102
- 90 to 95
- 84 to 90
- 77 to 84
- 69 to 77
- 55 to 69
- 1 to 55

No edge treatment vs. Edge cleaned
Ramping at crop edge

- **Kriged No edge treatment**
  - Mean = 106.4
  - STD = 32.3

- **Kriged Edge cleaned**
  - Mean = 108.1
  - STD = 31.7

- **Difference (bu/ac)**
  - >10% affected by more than 5 bu/ac
Unknown swath width
Dealing with yield map errors

- All yield maps contain some errors that should be removed before analysis.
- Manufacturers’ software does a good job of dealing with many simpler problems.
- They have a tougher time with “trial-and-error” type settings (i.e. delay time – set, view, adjust).
- Manual editing (point, transect, area, etc.) must be done elsewhere (generally in a GIS).
- A software package was needed that provided all of these tools in one place.
Yield Editor
version 1.0, developed 2003

- Yield Editor has been widely used by farmers, students, researchers, consultants, and others
- Total downloads of the software are now well over 5000
In 2010 we began developing a new version of Yield Editor that would automate more of the yield data cleaning process:

- Automated delay time determination
- Overlapped travel and partial swaths removed
- Unrealistic localized yield values removed
- “Smart” selection of existing filter parameters
- Batch mode operation
- Currently over 11,000 total downloads
Yield Editor
version 2.0
Automated yield cleaning expert (AYCE)
Delay time determination
Using relative spatial consistency

Localized standard deviation filter

Localized STD Filter Settings:
Grid Cell = 5 Header Widths
Limit = 3 Standard Deviations

Cell Results:
Mean = 165  STD = 15
Retain 120-210 in this cell
Cyan points removed

Cell Results:
Mean = 172  STD = 9
Retain 145-199 in this cell
No points removed
Yield data contains large numbers of errors.

These errors will affect your precision management.

Yield Editor 2.0 can automate many common yield cleaning tasks.

Having a way to document changes and retain the original data is important.