

# Delineating Zones for Variable rate Seeding a Fertility Mgt.

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# Philosophy

- Every producer is at a different point in adoption so cookie cutter approaches do not work in lot of cases. Each plan has to be made individually to accomplish goals.
- Development of precision ag technologies like prescriptions should be a continuous dialogue between producers and myself until prescriptions are final.

# Basis for Decision Making - Prescriptions

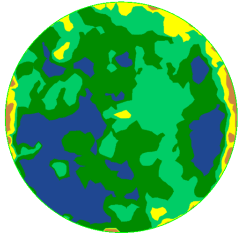
- Best case scenario-several years of yield data
- Elevation
- Soils Maps
- Producers knowledge
- EC/EM data

# Collecting Yield Data

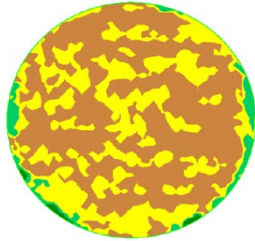
- Yield monitor data serves two main purposes:
  1. Enables evaluation of current year's management
  2. Provides data for future years in regards to how management could be altered to increase yields and/or decrease input costs.
- Advantages:
  - Build a history of yield data to identify management zones
  - Identify problems that occurred during the current growing season that resulting in yield loss or gain
  - Evaluating on-farm research trials

# Use of Yield Data

- The most powerful use of yield data is when multiple years of data are combined in order to determine management practices that will increase yields or decrease input costs.
- There is no better method in delineating management zones than through using yield data history. Multiple year yield analysis will define areas that are consistently high, medium, or low averaging.



• Yield History



• Multi-year yield analysis



• Implement variable rate technologies



End of Year  
Analysis



Incorporate data  
into next year's  
decisions

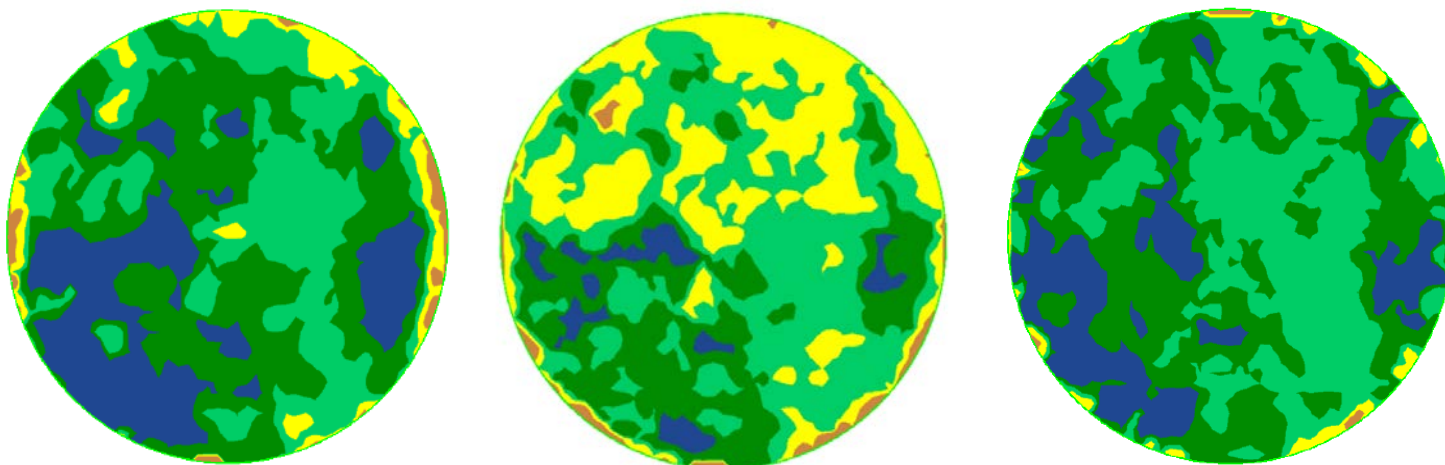
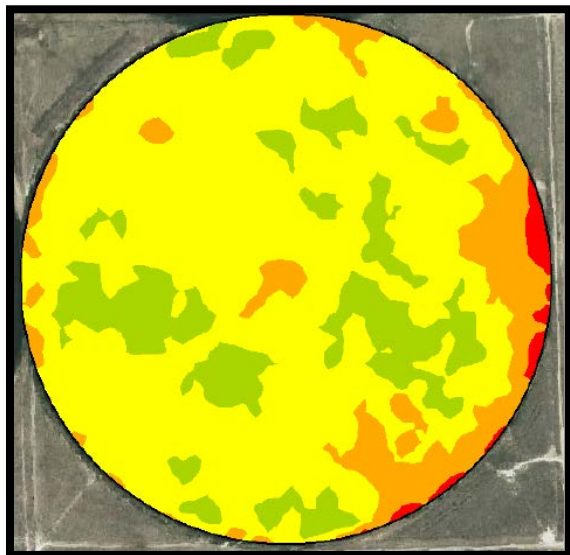
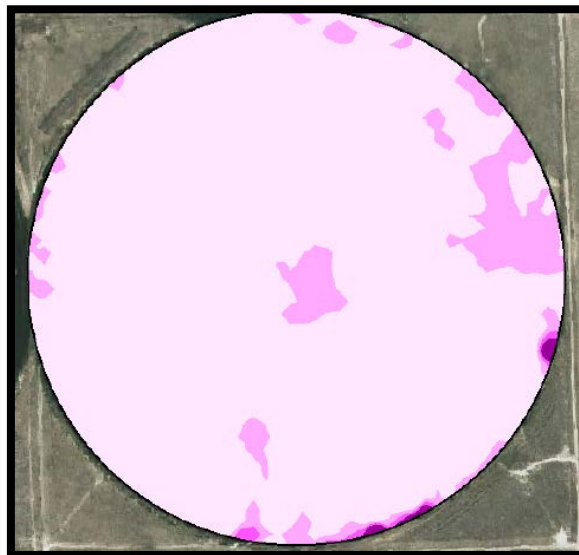


Figure 1. Three years of yield history with basic uniform management. Yields lowest to highest are brown, yellow, light green, dark green, and blue.

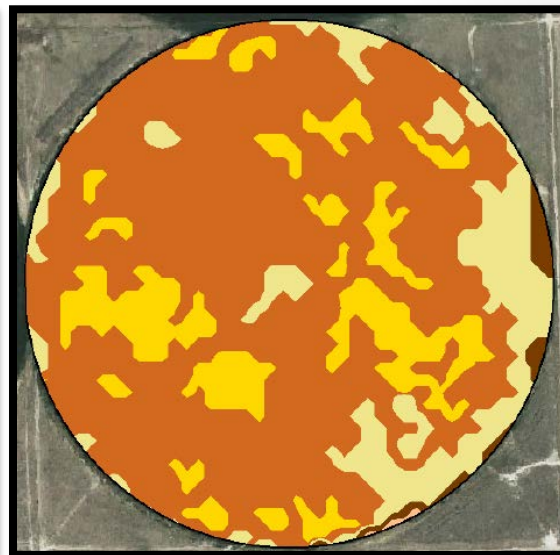
# Multi-year Yield Map Analysis



Relative grain yield



Year to year stability



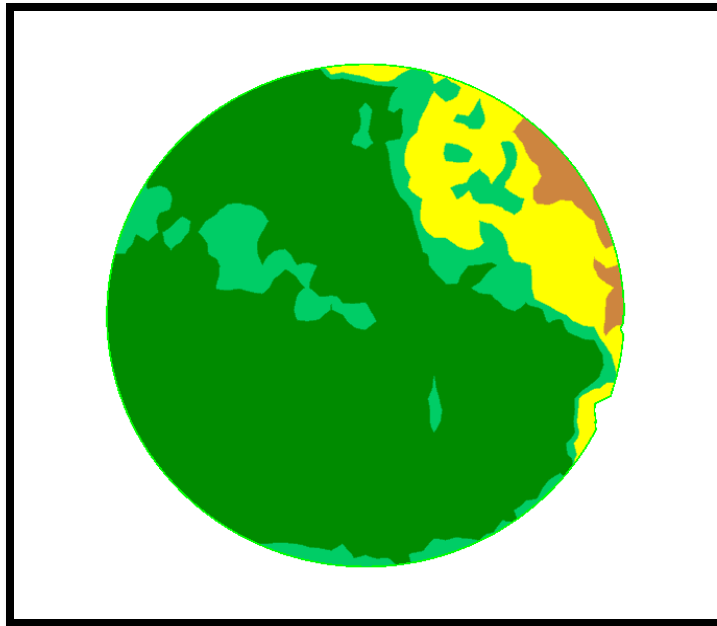
Management Zones for seeding

Figure on the left is relative or normalized grain yield over a 4 year period. Yellow area is 95 -105% of the field average for the time period. The middle figure is a measure of the yield stability from year to year. The lightest purple area is very stable. The figure on the right is using the information in the first two figures to generate management zones.

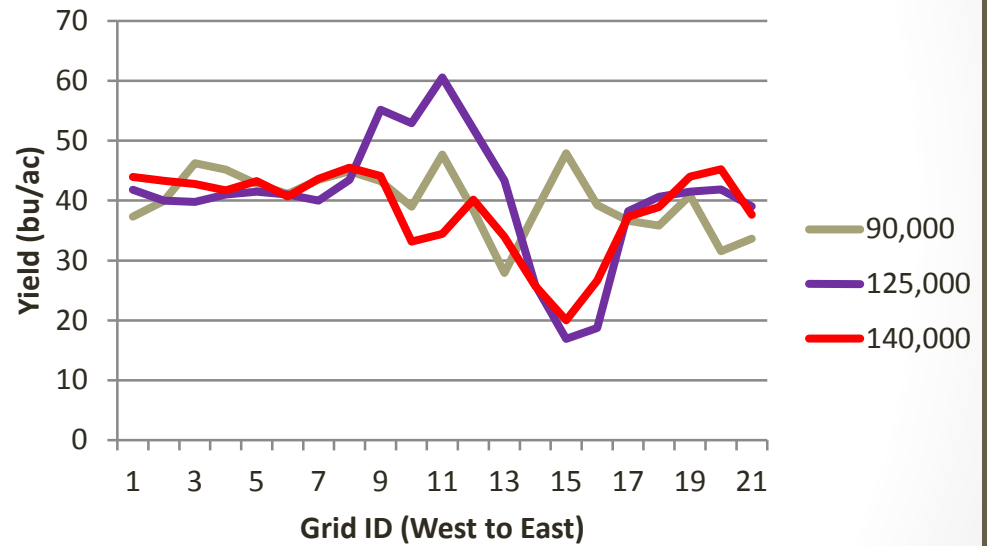
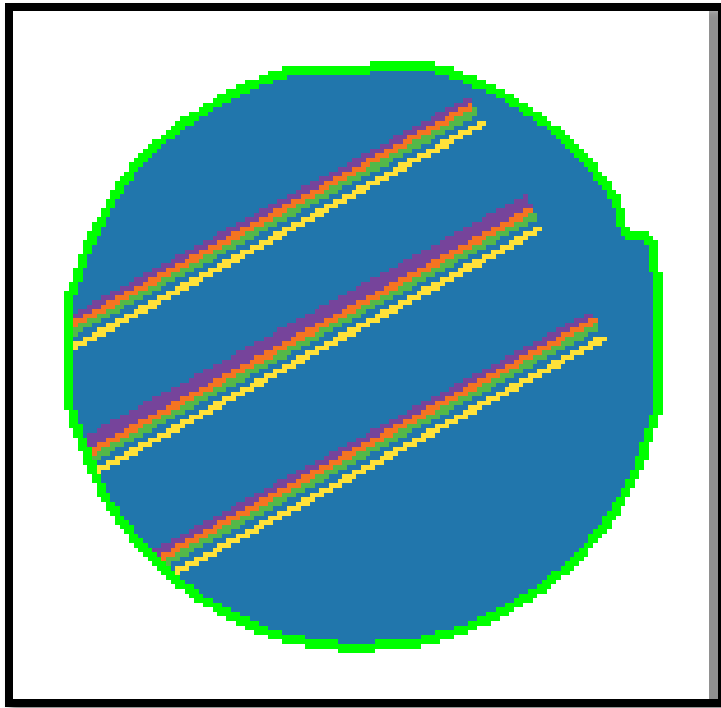


# Variable Rate Seeding

- The ideal seeding rate no doubt changes within a field for most fields in the Southern Plains.
- Several methods can be used like elevation and soil map but yield history is by far the best.



# Seeding



# Variable Rate Seeding

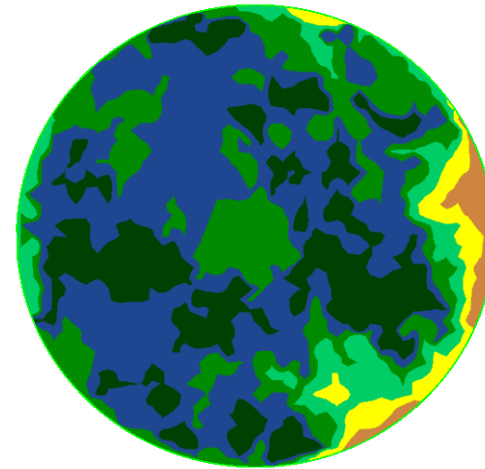
- Typically, save \$1-5/acre in seed.
- Producers typically have a good idea of what population works best where.
- Match hybrid with population
- Biggest upside is increase in yield in low yielding area of the field.

# Example

- Step 1
  - 2.5 acre grid sample
- Step 2
  - Multi-year yield analysis
- Step 3
  - Variable Rate Seeding
- Step 4
  - Variable rate N side-dress application
- Step 5
  - End of year analysis

# Nitrogen Management

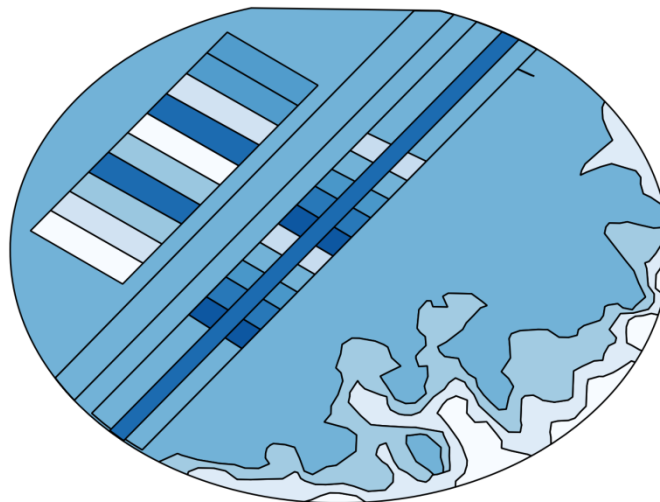
- Based on historic yield potential
- Best if utilized with side-dressing
- Possibility of variably applying pre-plant depending on what operations are conducted pre-plant



# Nitrogen Management

- Example Basic Program
  - 40 lb N/ac as starter
  - Side-dress: vary rates 15 to 100 lb N/ac
  - Sprinkler: 100 lb N/ac
- Figure 0.8 to 0.9 lb N/bushel of corn
- Averaged close to \$10/ac savings in N fertilizer
  - Savings comes from low yielding areas
  - Yield upside is in high yielding areas of the field

# On-farm Trials



# Summary

- Like I said before, everybody is at a different place in adoption and most individuals have different management strategies.
- Develop clear goals and improve and increase use of technology each year.



# Thank You

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