

# 2006 SMFD

## *Finding Answers to Your Soybean Production Questions*

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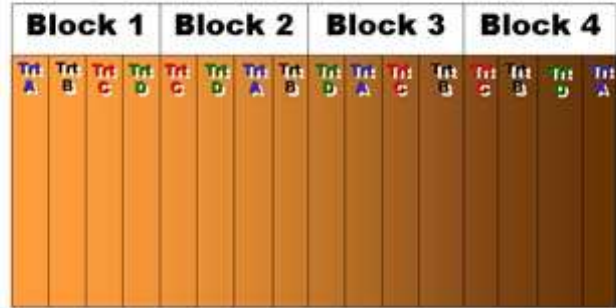
2006 University of Nebraska-Lincoln  
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# Finding Answers to Your Soybean Production Questions

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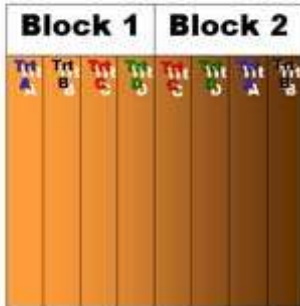
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## Randomized Complete Block Design Three or more treatments (Four blocks required—Five preferred)



06smfd-answers002

## Randomized Complete Block Design Three or more treatments (Four blocks required—Five preferred)



Assume treatment A,B,C & D strips are each 16 rows wide (40 feet)

Combine head 20 feet wide

Harvest 20 feet out of center for each treatment

10 feet of discard/buffer remaining on each side of harvested strips

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## Documenting Yield

- Truck and Scale
- Weigh Wagons
- Yield Monitors



06smfd-answers004

### Benefits of Multi-year Comparisons

Crop	Year	No Lime	Lime	Prob >/T/
•Corn	1995	74	73	.59 ns
•Soybeans	1996	42	43	.32 ns
•Corn	1997	121	125	.10 *
•Soybeans	1998	50	58	.0002 ***
•Corn	1999	145	149	.177 ns
•Soybeans	2000	37	43	.0001 ***
•Corn	2001	130	132	.657 ns
•Soybeans	2002	43	50	.0003 ***
•Corn	2003	88	99	.016 **
•Soybeans	2004	41	44	.0067 ***
•Corn	2005	145	147	.306 ns

\* Significant at the 90% confidence level      \*\*\* Significant at the 99% confidence level  
 \*\* Significant at the 95% confidence level      ns Not significant

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### The Power of Statistics

- Relationship of design and statistics
- Interpreting results
- What is significant?
- What is a confidence level?
- Where can I get help with statistics?

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### ApronMax      CruiserMax

74.1P	← Pair →	75.9
77.1		78.2
76.3		77.9
75.7		76.3
73.5		75.3
75.1		75.0
73.3		74.6
75.7		77.9
76.8		78.8

75.3 bu/ac      Average      76.7 bu/ac

1.4 bushel yield difference is significant at 99% confidence interval

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**Value = Benefits – Costs**

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## UNL On-Farm Research Results

<http://farmresearch.unl.edu>



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## Take Home Messages

- On-farm research allows you to test agronomic practices on your farm using your machinery and management system.
- Field comparison layout is key to successful research.
- Today's yield monitors and weigh-wagons make yield data collection convenient.

06smfd-answers010

## Take Home Messages

- Good data leads to sound management decisions.
- Decisions should be based on multi-year comparisons.
- What is the cost:benefit ratio for each treatment?
- How will your management plan change based on the results?

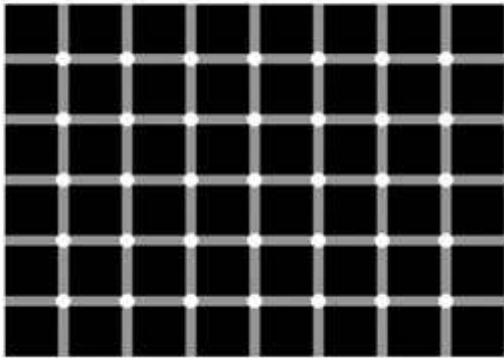
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## The Decision Making Process



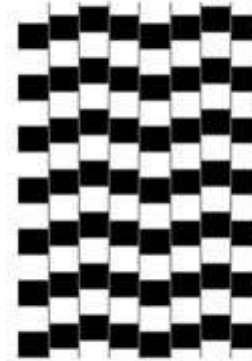
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## What is Real?



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## What is Not?



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**“In Production Agriculture  
it’s what you think you know  
that you really don’t know  
that can hurt you”**

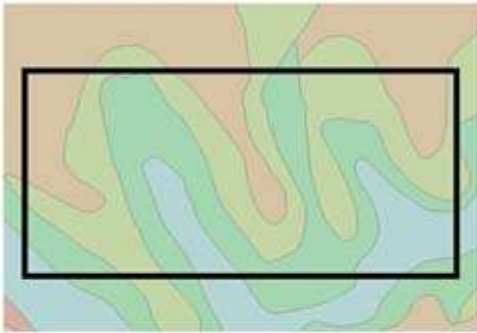
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## Developing and Testing the Question



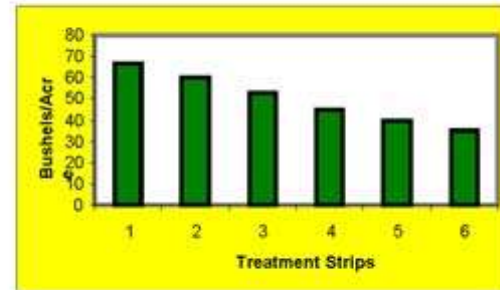
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## Field Variability



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## Field Gradients



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## Randomizing and Replicating

**Randomization** – ensures that favoritism is not given toward a treatment

**Replication** – reduces the possibility that results are due to chance rather than the treatments

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