The Challenge : Sorting Fact From Fiction OR Separating Reality from Recycled Trash

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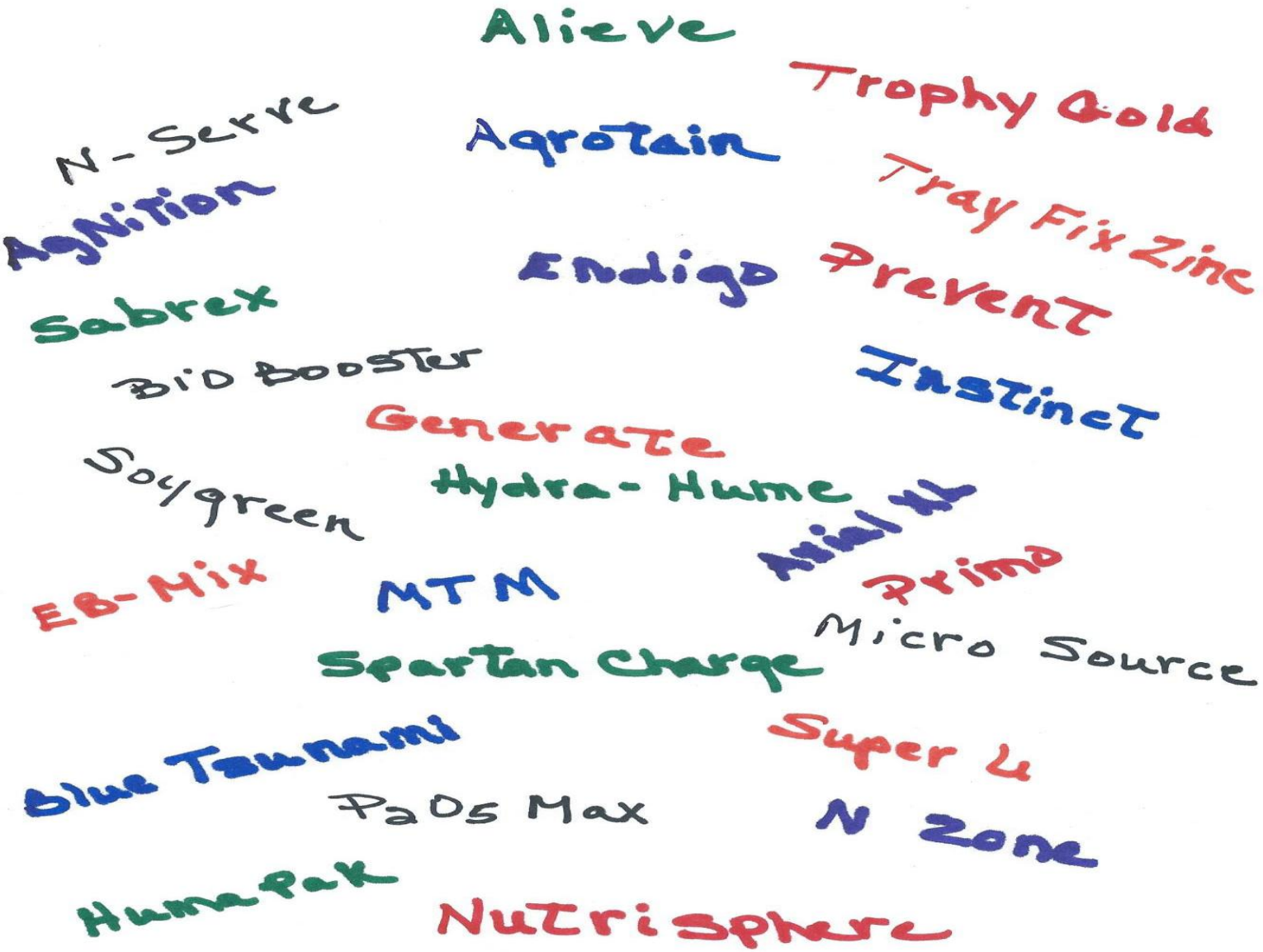


Alieve

Trophy Gold

N-Serve

Agrotain

Tray Fix Zinc

AgNition

Endigo

Prevent

Sabrex

BiO Booster

Instinct

Generate

Soygreen

Hydra-Hume

Axial XL

EB-Mix

MTM

Primo

Micro Source

Spartan Charge

Super 4

Blue Tsunami

P_2O_5 Max

N Zone

Humapak

Nutrisphere

N-Serve

Agrotain

Instinct

Soygreen

Super U

Some Topics

- today's challenge for ag-professionals
- tools to use
- learn the a's, b's, and c's
- meta analysis

For The Ag-Professional

- what's real
- how do I tell
-

Words Should Cause Red Flags

- makes nutrients more available
- enhances herbicide efficiency
- Improves biological activity
- more efficient use of nitrogen
- so new, Universities don’t know about it
- prevents tie up

Quick Roots Claims

- consistent profitable yield increase
- performs well in a variety of soil conditions and types
- improves nutrient uptake including NPK
- enhances seedling vigor
- maximizes yield potential
- expands root volume
- accelerates plant growth
- increases nodulation in legumes

Today in Agriculture

- questionable products have evolved to questionable packages or concepts

A Brief Introduction To Practical Production Statistics

Why Statistical Analysis

- it's easy to collect data from the field
- data can be confusing—sometimes too much of a good thing
- must variability
- are differences in yield produced by treatments due to the treatment itself or natural variability of yields in the field

Three Inputs—Corn Yields—Field #1

	Replication #				
Input	1	2	3	4	Ave.
	bu./acre				
A	202	204	207	203	204
B	215	221	217	218	218
C	201	207	206	205	205

Three Inputs—Corn Yields—Field#2

	Replication				
Input	1	2	3	4	Ave.
	bu./acre				
A	195	209	190	214	202
B	200	236	226	215	219
C	193	227	201	217	210

Let's Add Statistical Analysis

	Field #	
	1	2
Input	bu./acre	
A	204a	202a
B	218b	219a
C	205a	210a

So What Can We Say?

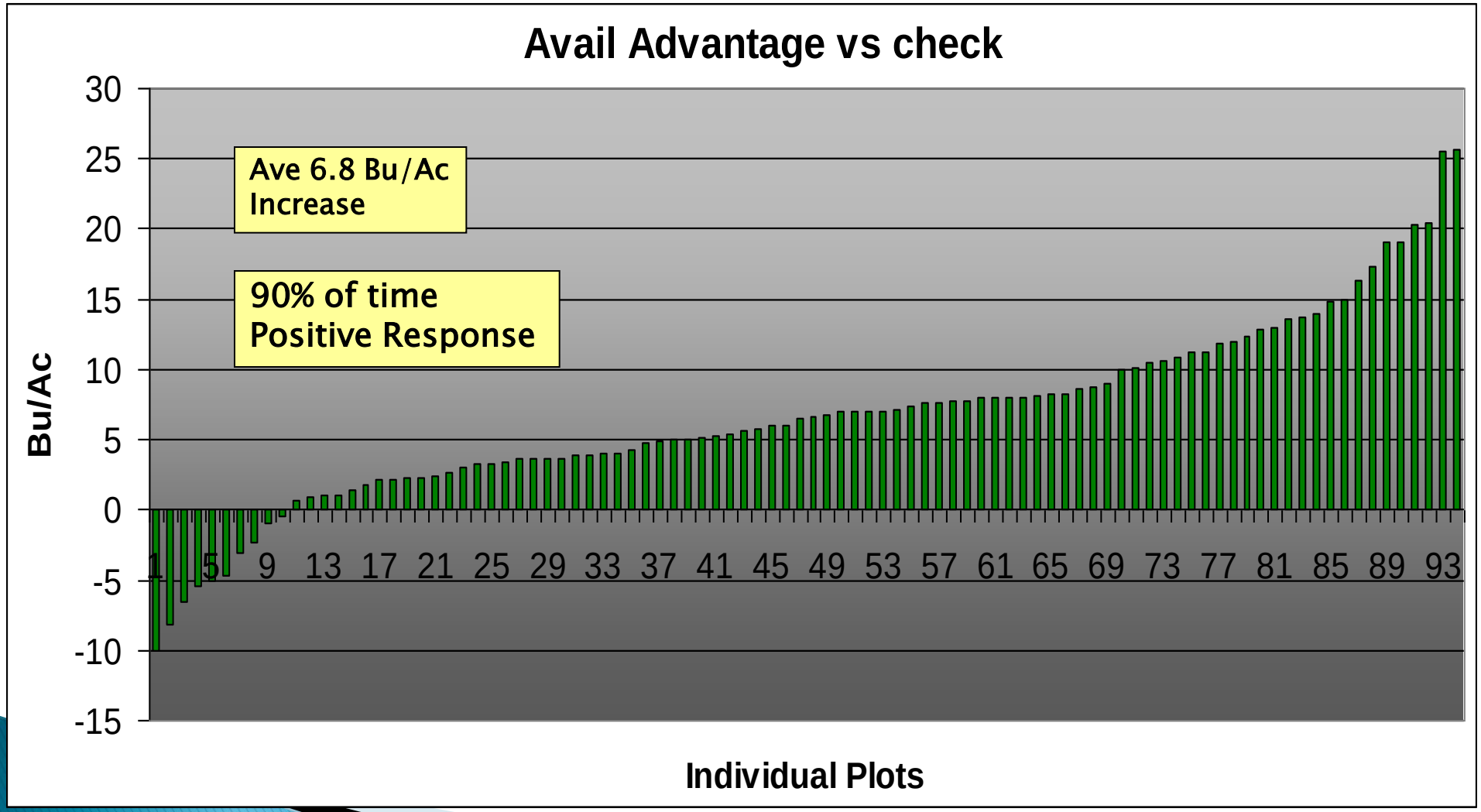
- inputs performed differently at each site
- can use economic interpretation for information collected at field #1 not #2
- economic interpretation is not appropriate if there are no statistical differences
- statistics first—economics second

The Meaning Of A Significant Difference

- you've heard someone say:"differences were not significantly different"; what does that mean for me
- significant is not the same as important
- significant means that there is a high level of confidence that measured difference are due to treatment applied
- for field data, confidence level of 95% is standard
- can choose any confidence level
- if treatments affect economics, choose higher confidence level

Avail Three Year Performance Summary

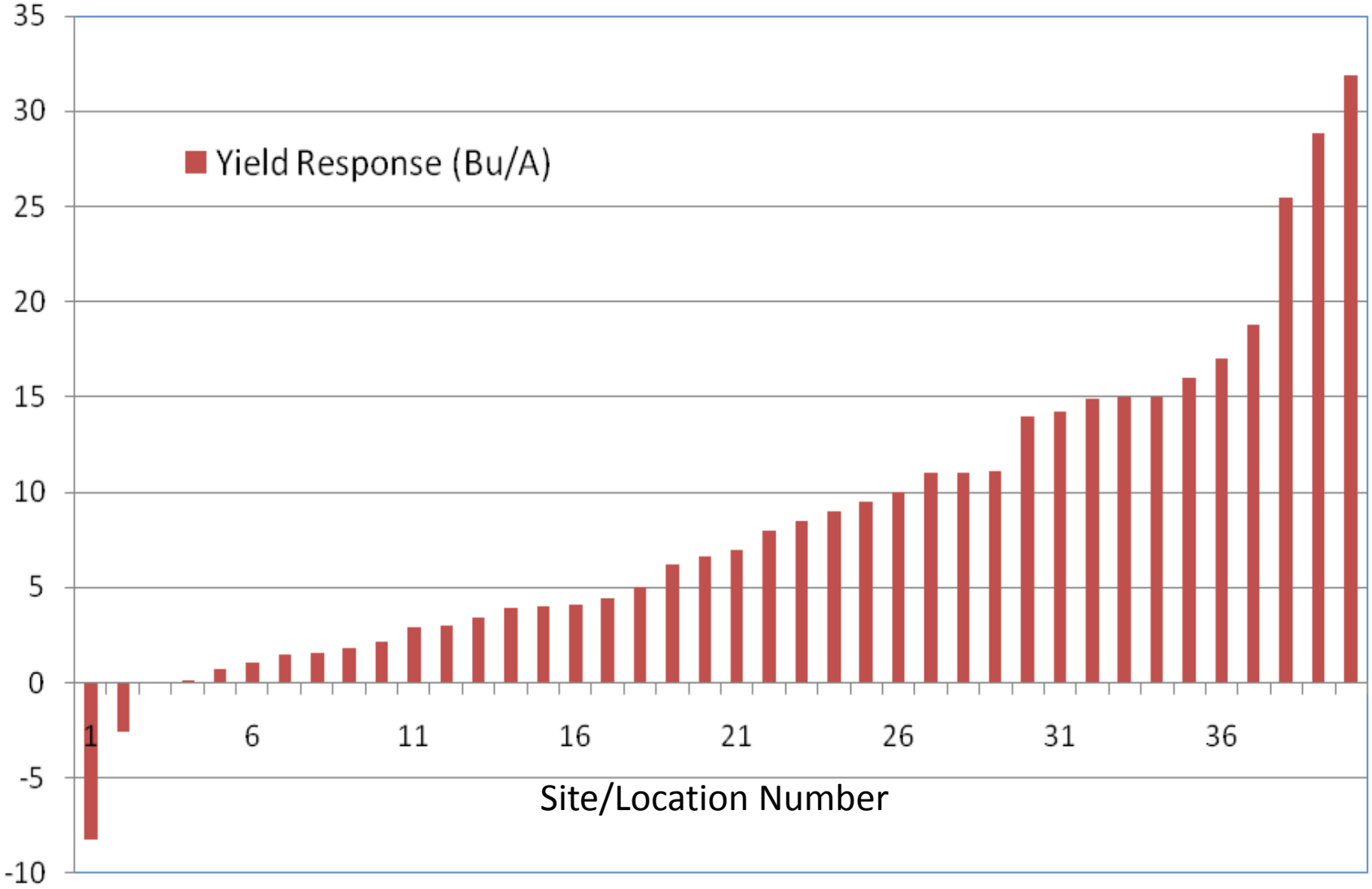
Corn Side by Side Trials
2007-2009



United Suppliers side by side trials

2007-2008 NSN Effects On Corn Yield

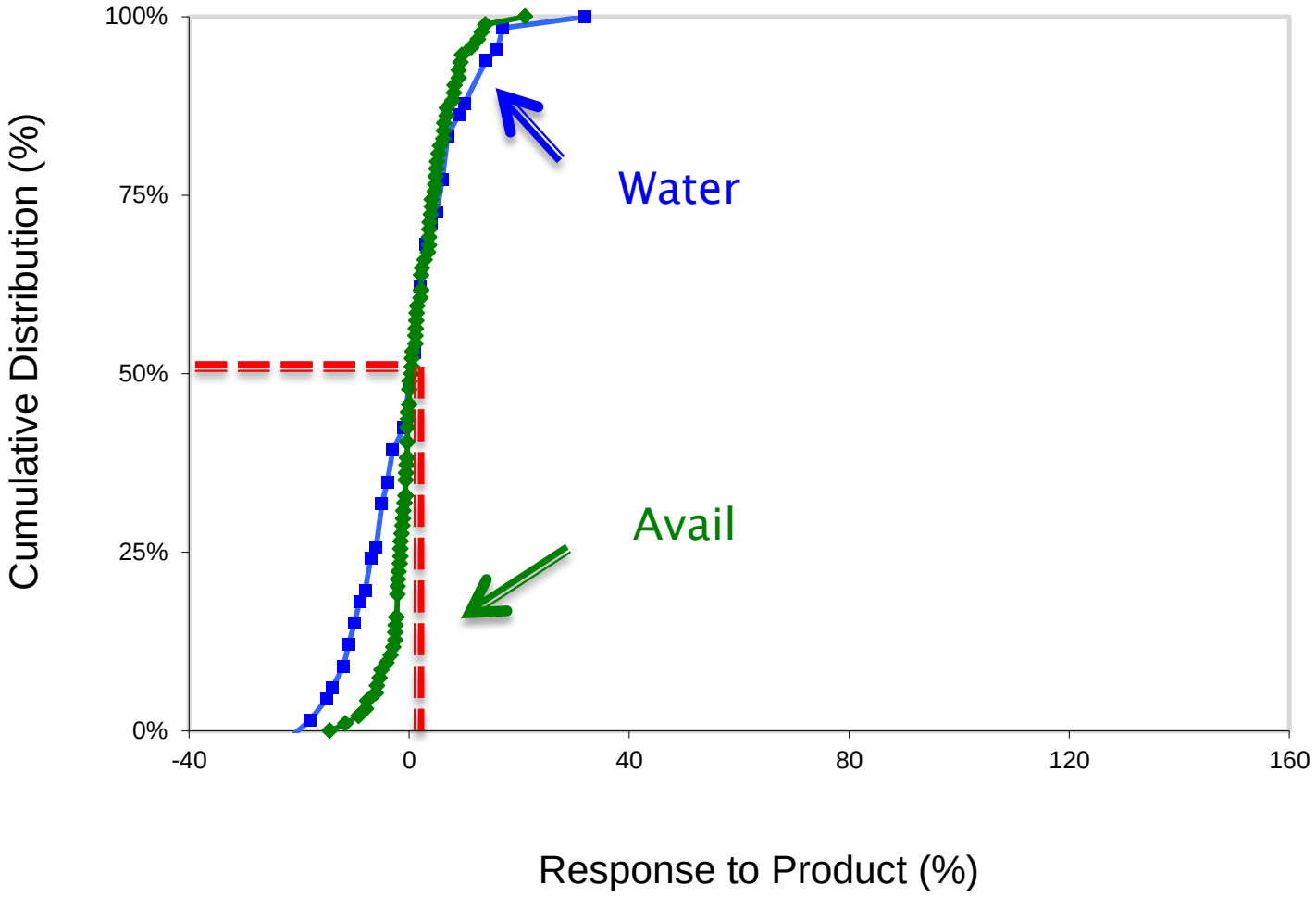
United Suppliers and The Andersons (40 site/years)



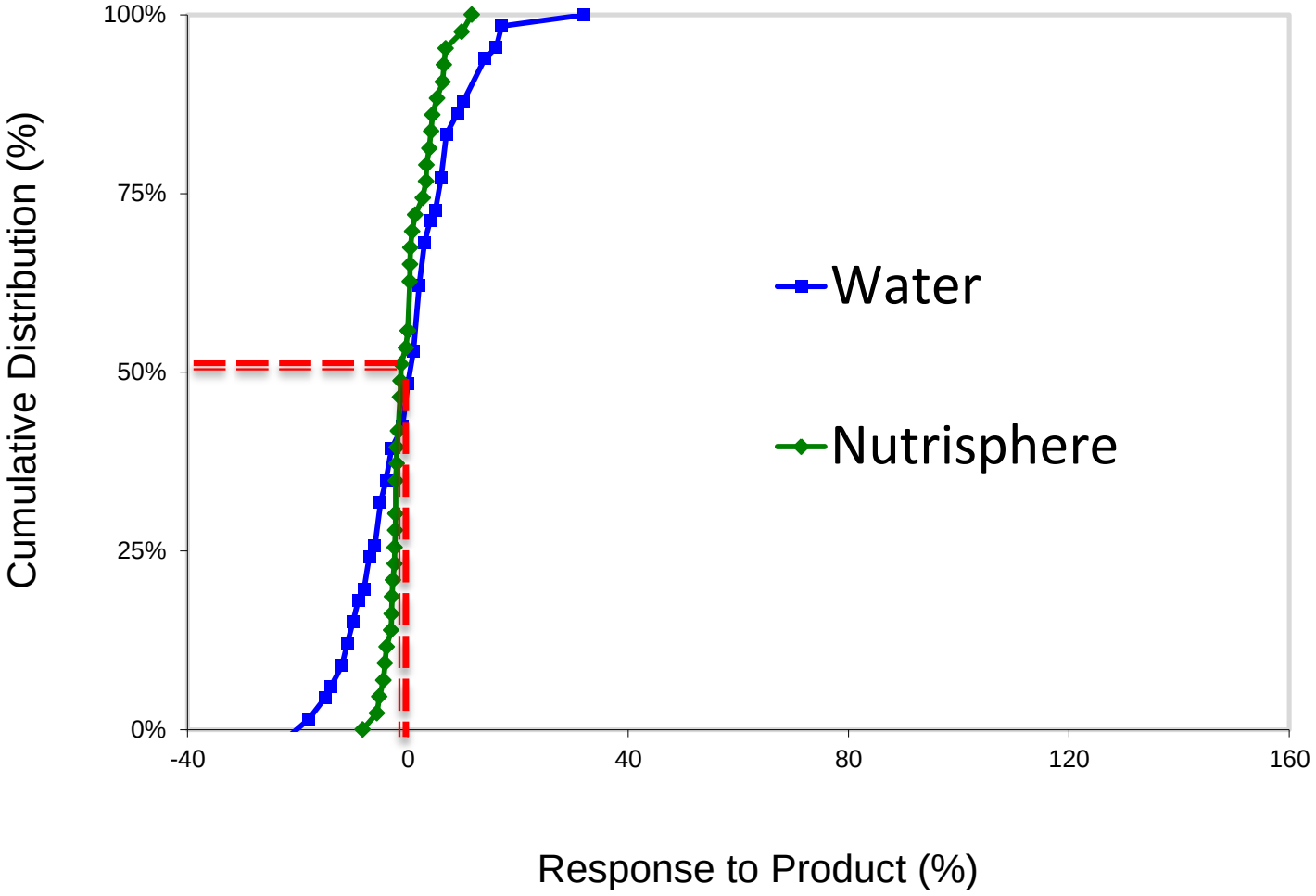
Meta Analysis

- traditionally not used in agriculture
- used routinely in medical analysis
- an excellent tool for interpreting data collected from several sites

Compare Avail Vs Water



Compare NutriSphere-N Vs Water



Australian Conclusions

Avail **DID NOT** increase yield

relative to untreated

NutriSphere-N **DID NOT** increase yield

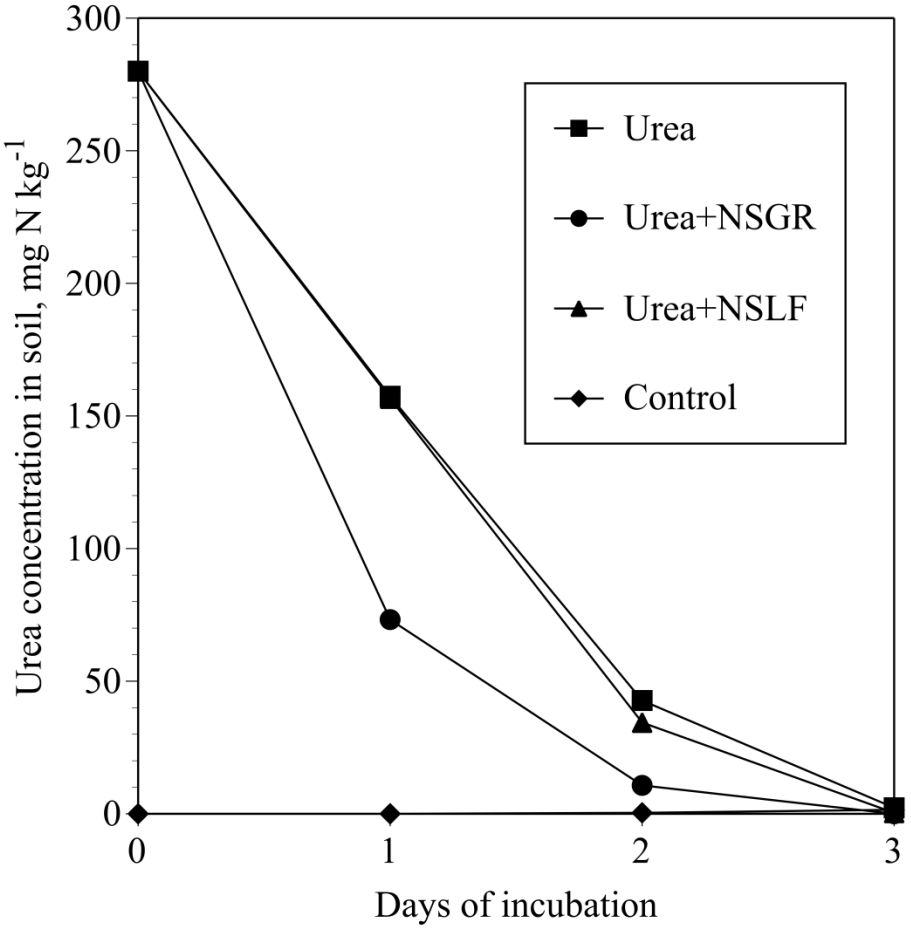
relative to untreated

Ammonia Volatilization- Laboratory Study

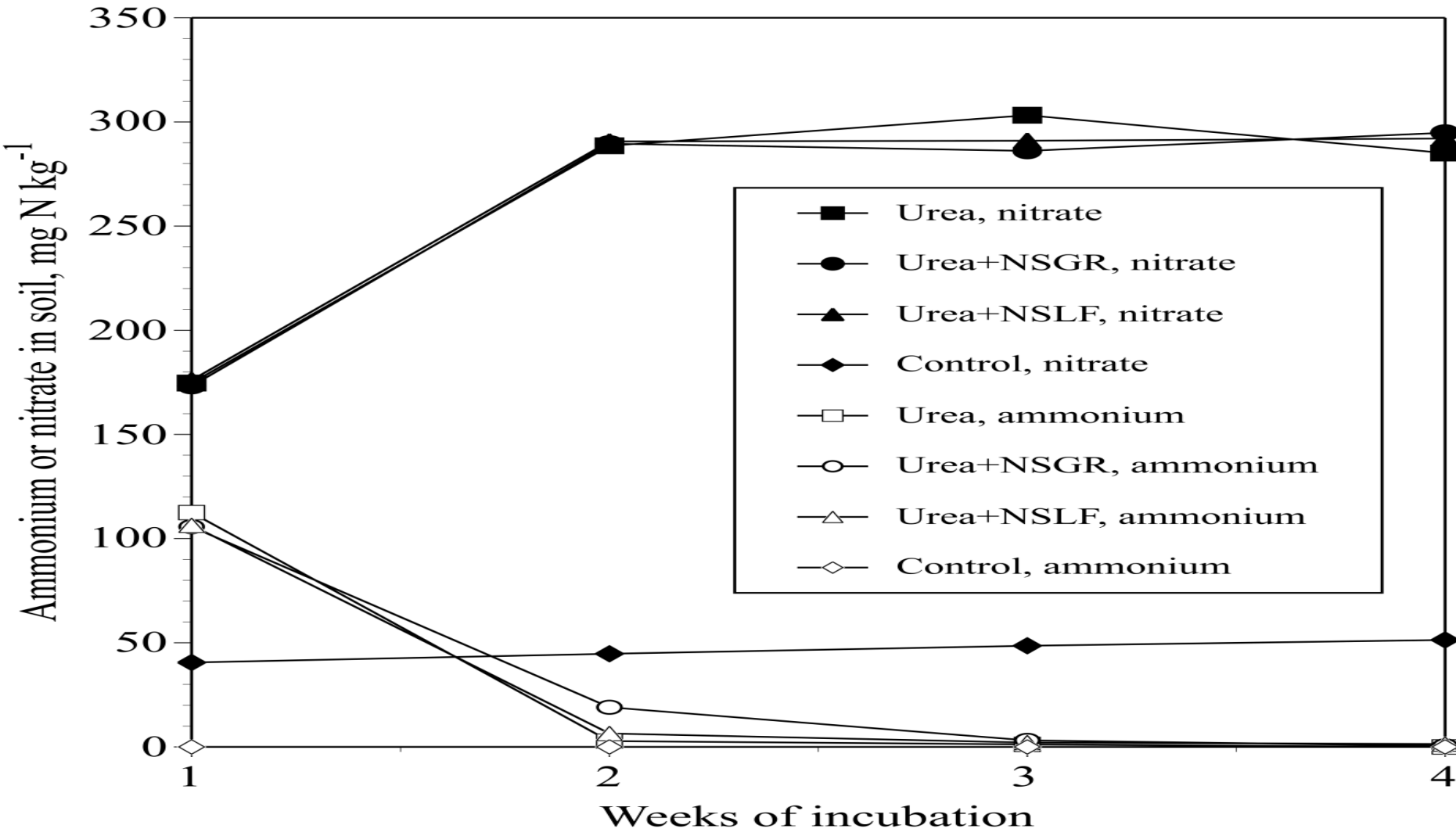
N Source	Day 3	Day 7	Day 11	Day 15
----------% of N Applied----------				
46-0-0	14.5	35.9	57.8	56.9
21-0-0-24	0.1	0.2	0.5	0.6
46-0-0+Agrotain	0.0006	2.7	12.7	18.3
46-0-0 + NSN	17.6	42.3	57.8	62.7

Source: Norman, University of Arkansas

Urea concentration in laboratory study with and without Nutrisphere. Goos, 2008.



Nitrate and ammonium remaining after 1–4 weeks incubation in Overly loam, with and without Nutrisphere on urea. Goos, 2008



Summary Of Franzen And Goos Research

- NSN did not inhibit conversion of urea-N to ammonium-N
- NSN at a dose rate of 500 times recommended did not inhibit conversion of urea-N to ammonium-N
- nickel sequestration by carboxylic acids (NSN) is an unlikely mode of action for inhibition of urease enzyme
- NSN did not inhibit activity of purified jackbean urease at pH 7

In Conclusion

- look for red flags in advertising
- ask for statistical analysis of data
- back away if there are testimonials
- use COMMON SENSE