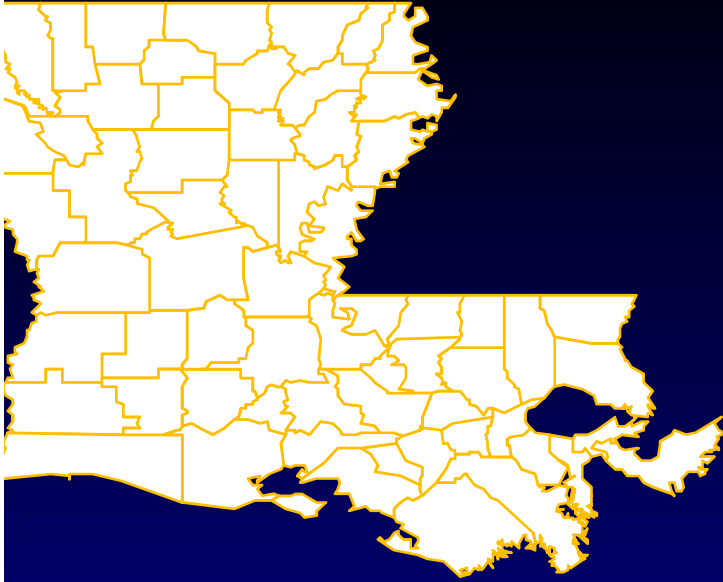


2012 LATMC - Marksville, LA



Data Interpretation and Decision-Making



Celebrating Excellence in Research

Louisiana Agricultural Experiment Station . 1887-2012 . LSUAgCenter.com



What is the purpose of a trial?

produce data!!



- Make valid comparisons
- Evaluate differences among
 - Treatments
 - Practices
 - Varieties
 - Systems

Questions to Consider in Evaluating Test Data ?

- Where/when was the test done?

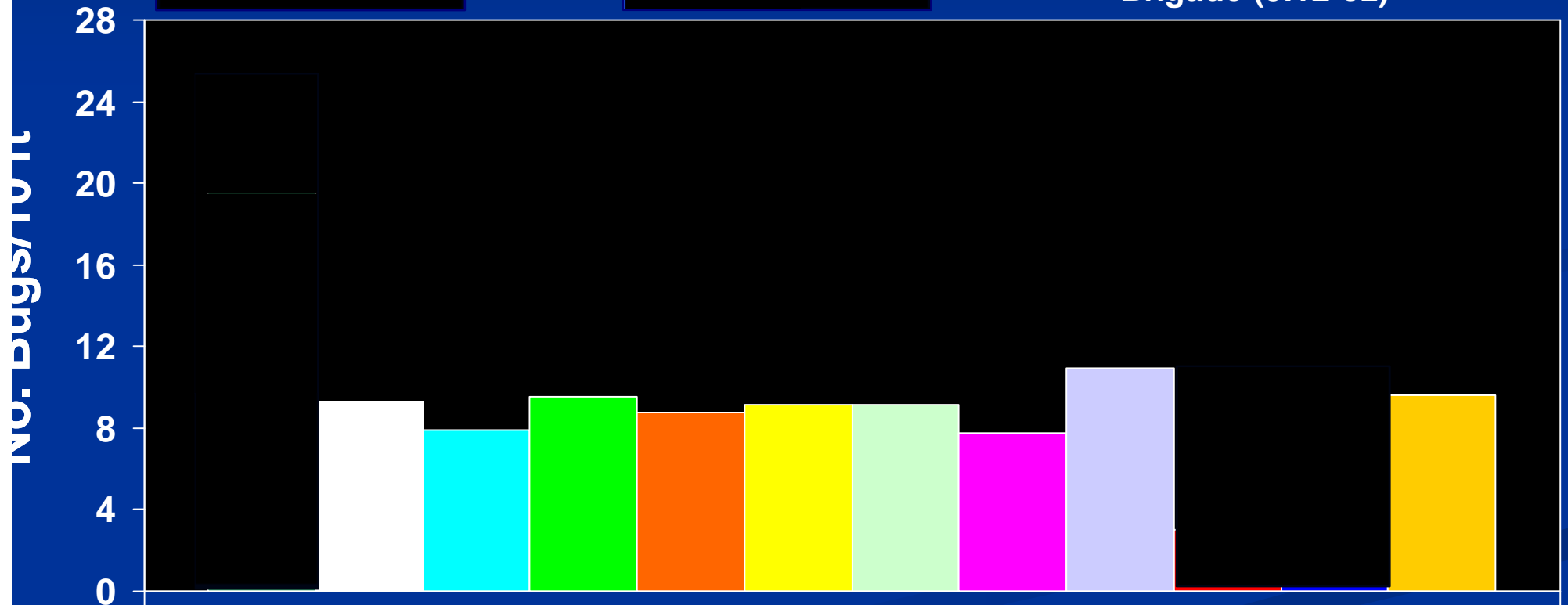


● Is there a non-treated control?

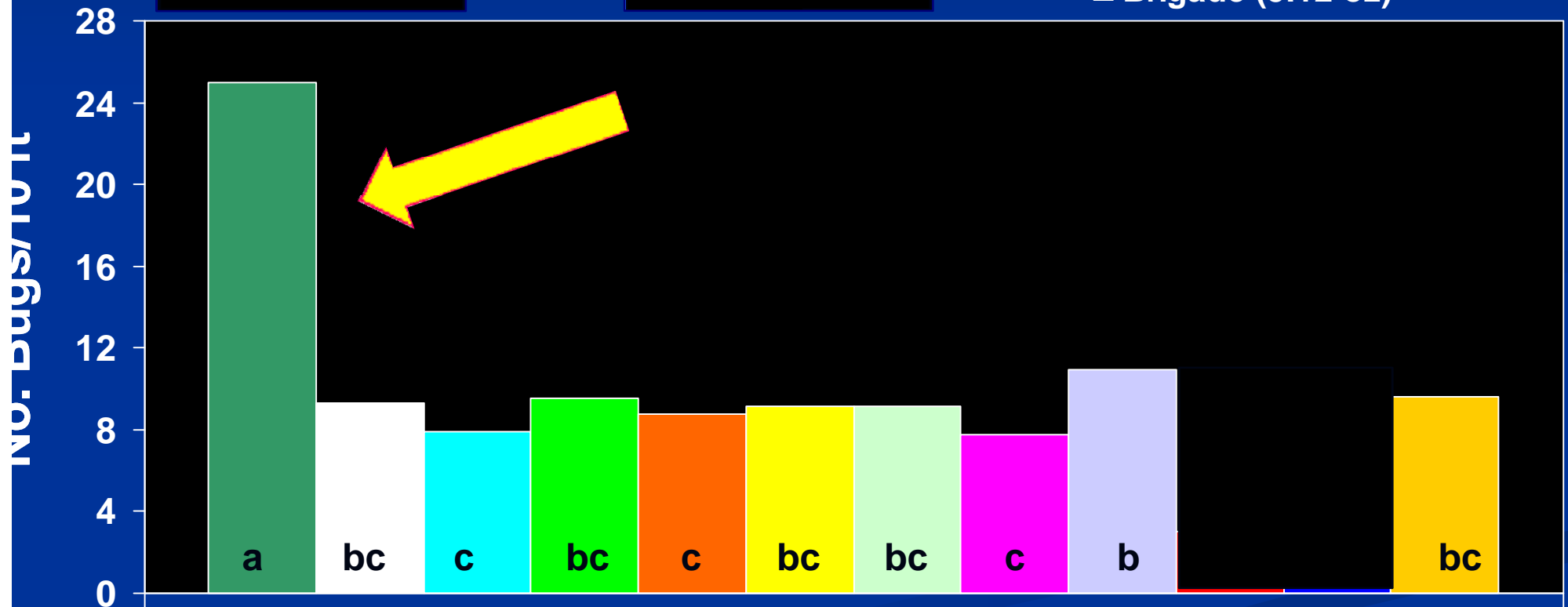
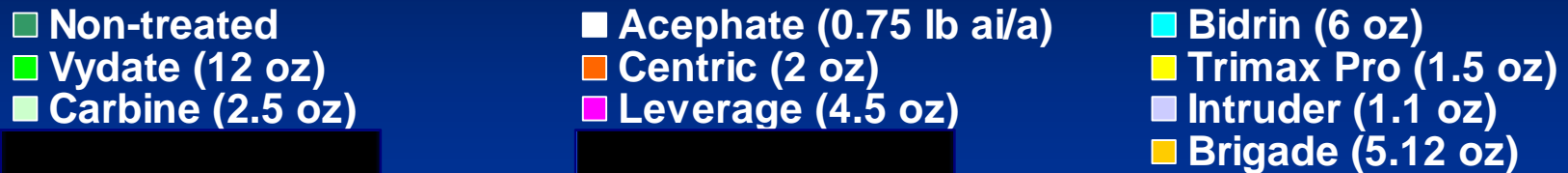
Vydate (12 oz)
Carbine (2.5 oz)

Acephate (0.75 lb ai/a)
Centric (2 oz)
Leverage (4.5 oz)

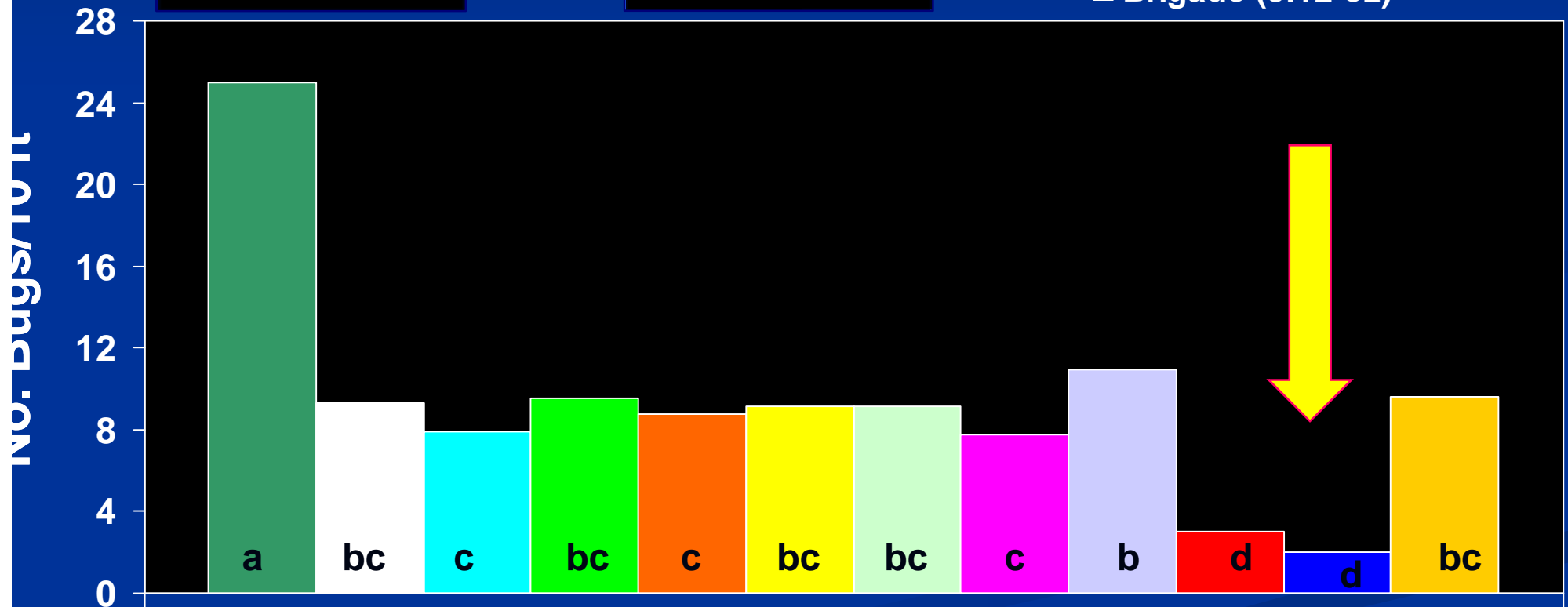
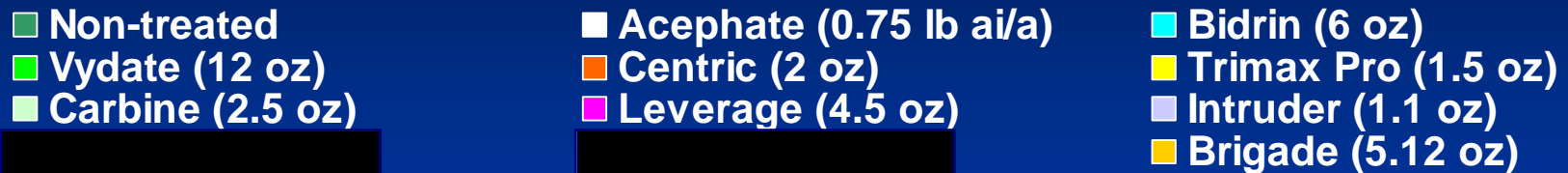
Bidrin (6 oz)
Trimax Pro (1.5 oz)
Intruder (1.1 oz)
Brigade (5.12 oz)



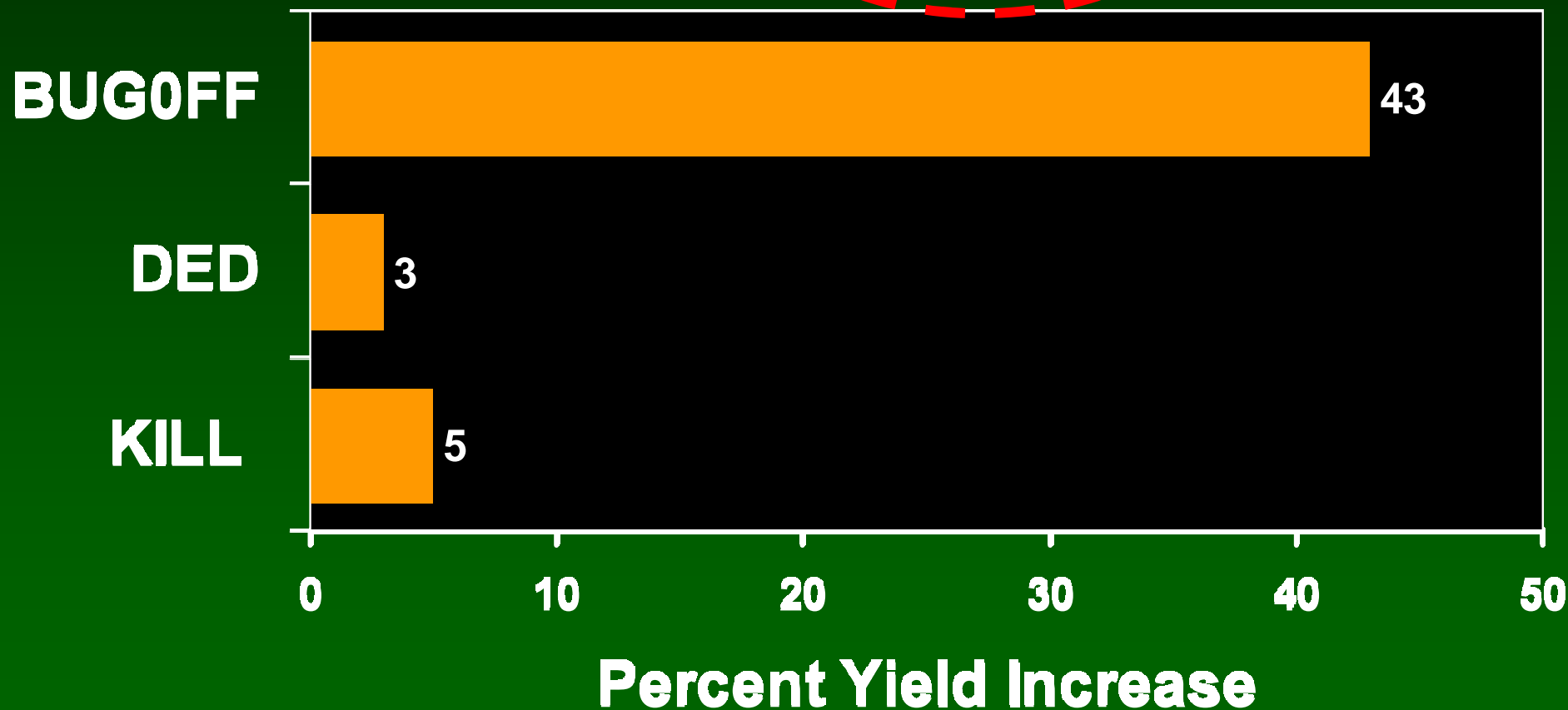
● Is there a Standard for comparison?



● Is there a Standard for comparison?

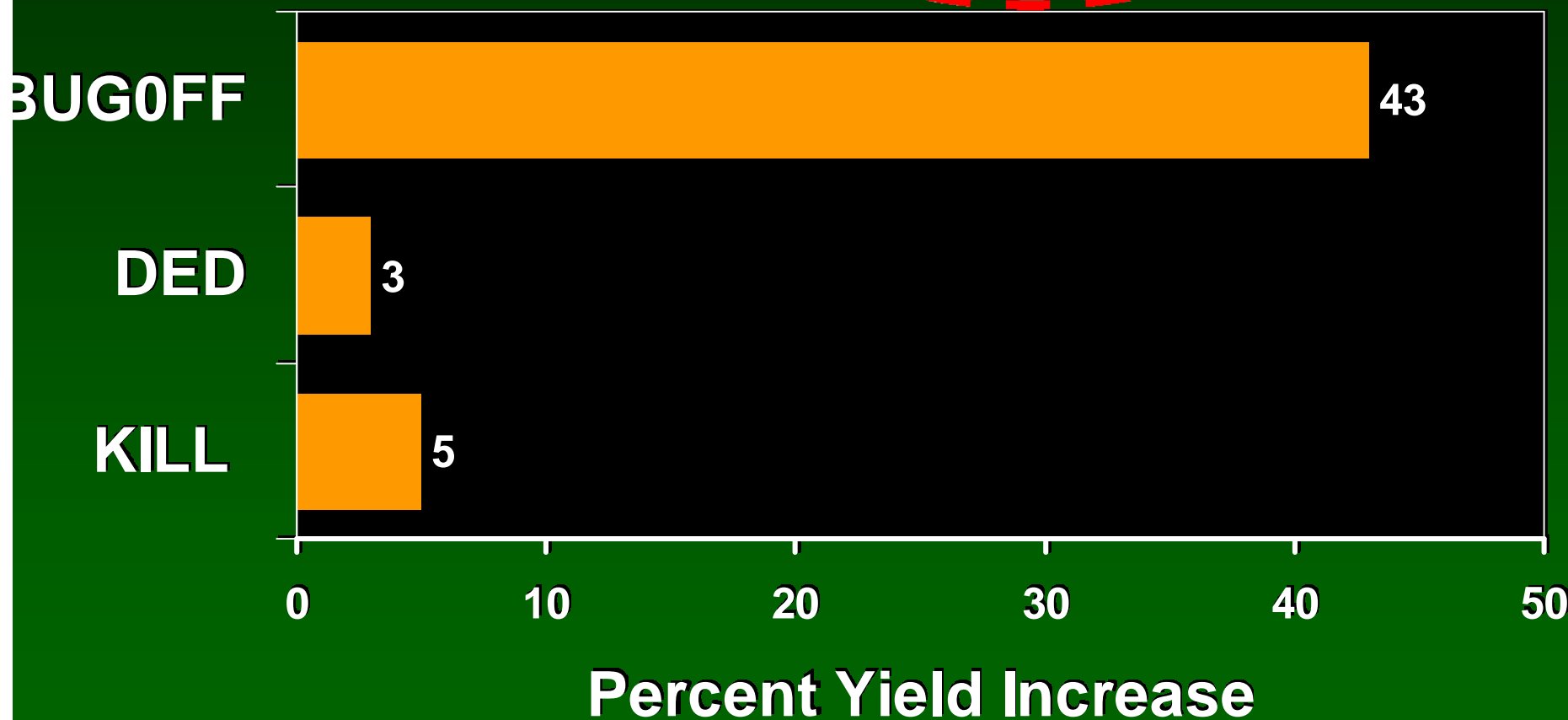


Yield Response to Pesticide Treatments (1 Trial)



- How much data?

Yield Response to Pesticide Treatments (100 Trials)



- How much data?

- How many tests were included?

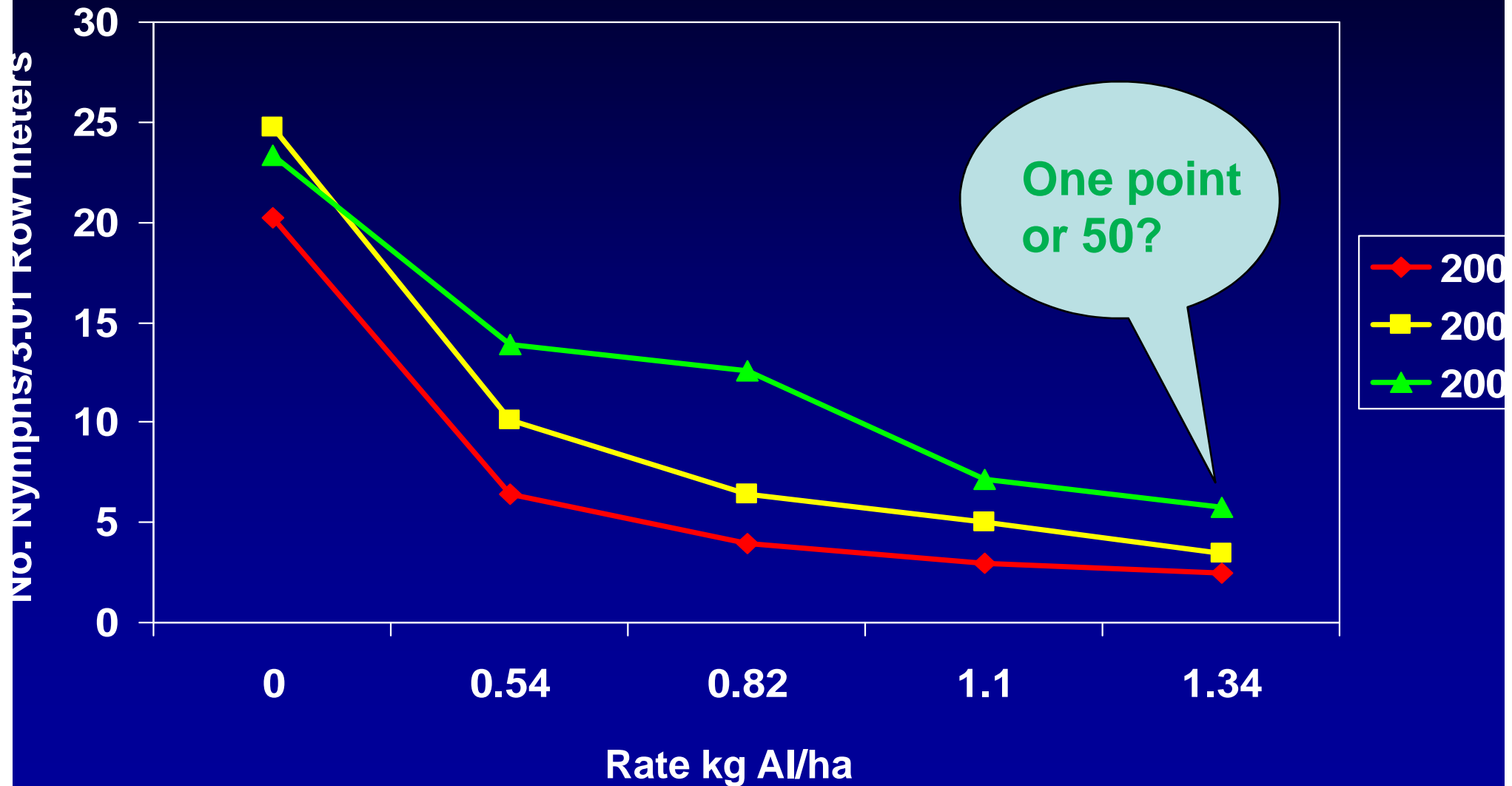


Table 2. Two-year yield performance of early maturing cotton varieties cultivated in an irrigated environment at two locations during 2010-2011.

Variety	Location and soil texture				Average across locations and years 16x
	St. Joseph		Winnsboro		
	Clay		Silt loam		
	2010	2011	2010	2011	
	Pounds of lint/acre				
AM1550B2RF	836	921	1085	1533	1094
DG2450B2RF	805	982	1144	1379	1078
DG2570B2RF	856	968	1095	1376	1074
DP0912B2RF	1175	1162	1275	1441	1263
DP1133B2RF	1138	1141	1463	1535	1319
FM1740B2F	959	908	1288	1270	1106
HQ210CT	744	861	1108	1237	988
PHY367WRF	1007	952	1244	1519	1181
PHY375WRF	949	974	1167	1539	1157
ST4288B2F	894	960	1303	1386	1136
ST5288B2F	1311	1138	1255	1556	1315

Data Interpretation



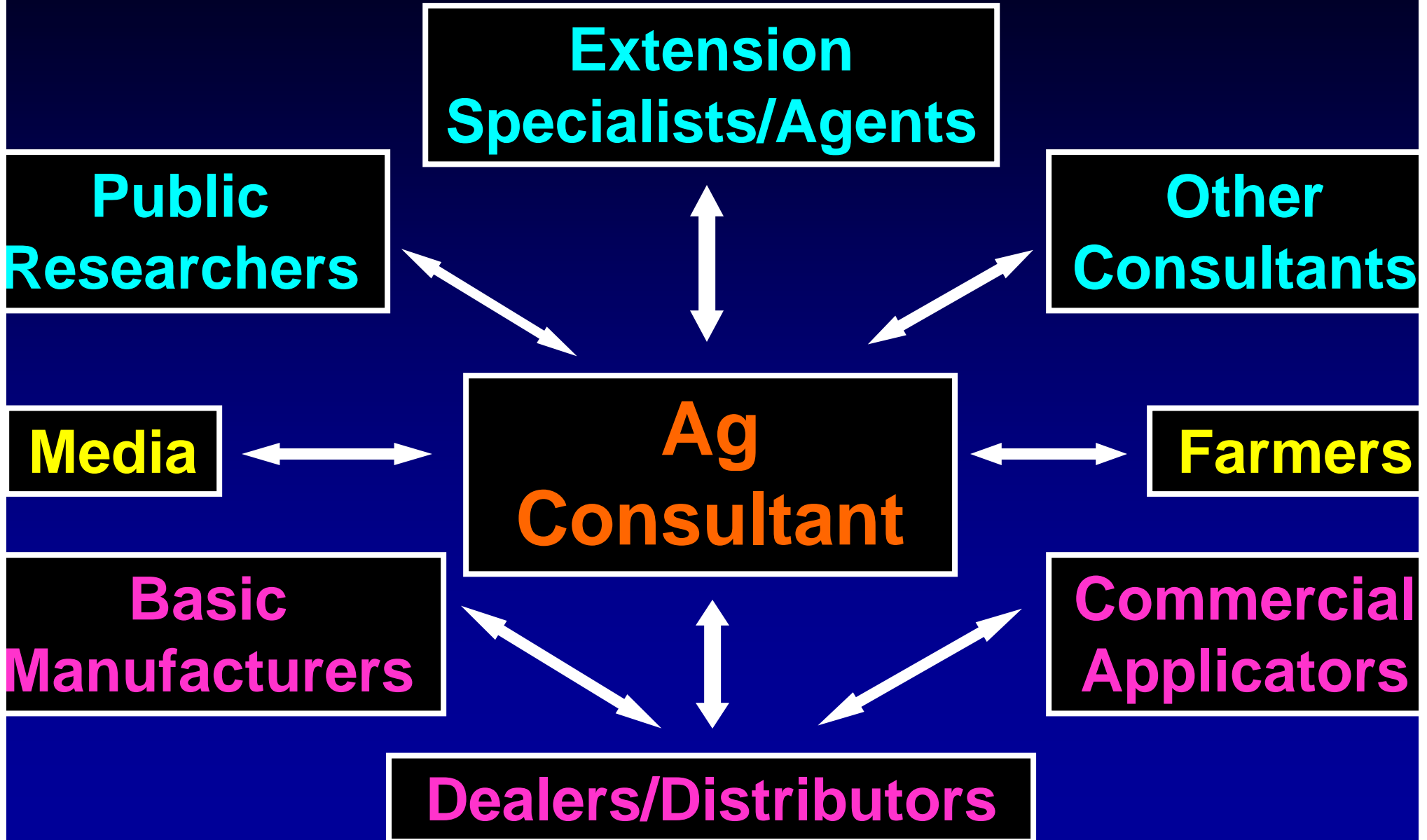
Recommendations

| Source of information

u Where to access information

u Dictates quality; validity

Sources of Influence



Data Interpretation

- | Source of information.
- | Type of data.
 - u Do you believe everything you see and hear?
 - § Oral – Word of mouth (Trust).
 - § Visual – “See it with your own eyes”.
 - u Written – Publications/Presentations.

From a farm publication...



- Farmer Joe used 'Product X' for the first time in 2005.
- "That field was uniform from one side to the other without any weak spots" said Farmer Joe. "It's always been a good field, but it's had some weak spots... This year it was beautiful, healthy, and consistent. The only difference in 2005 was 'Product X.'



Translations for Data Interpretations

I In my experience –

Translations for Data Interpretations

I In my experience – **I saw it once.**

Translations for Data Interpretations

In my experience – I saw it once.

I In case after case --

Translations for Data Interpretations

In my experience – I saw it once.

I In case after case – **I saw it twice.**

Translations for Data Interpretations

In my experience – I saw it once.

In case after case – I saw it twice.

I It is believed that -

Translations for Data Interpretations

In my experience – I saw it once.

In case after case – I saw it twice.

I It is believed that - **I think !**

Translations for Data Interpretations

In my experience – I saw it once.

In case after case – I saw it twice.

It is believed that - I think !

- It is generally believed that –**

Translations for Data Interpretations

In my experience – I saw it once.

In case after case – I saw it twice.

It is believed that - I think !

- | **It is generally believed that – A couple of others think so too !**

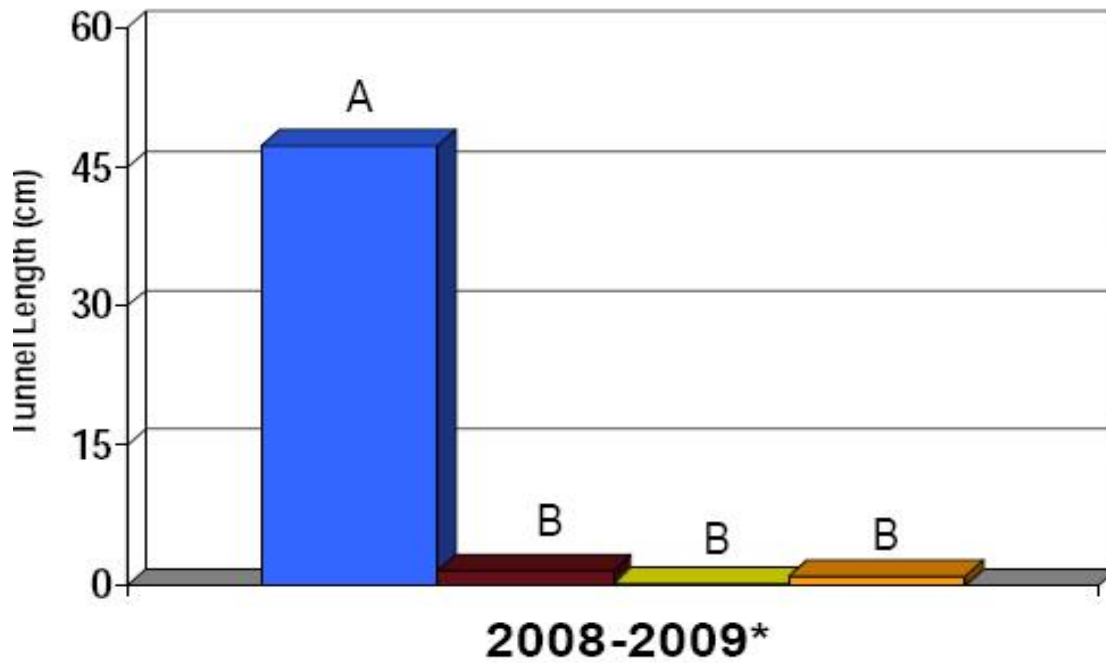


Non-treated

Treated

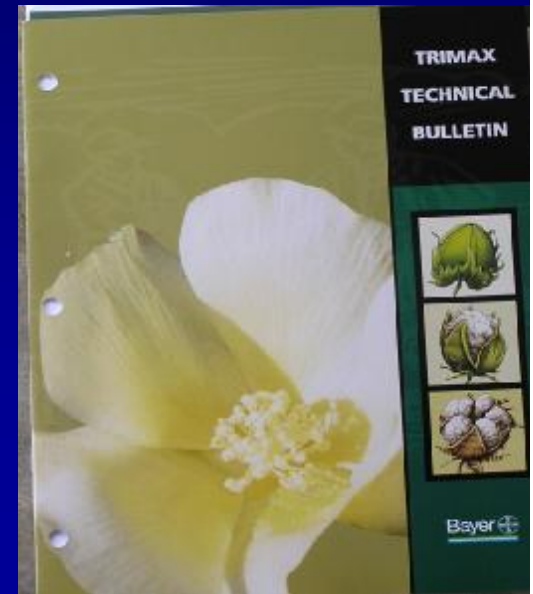
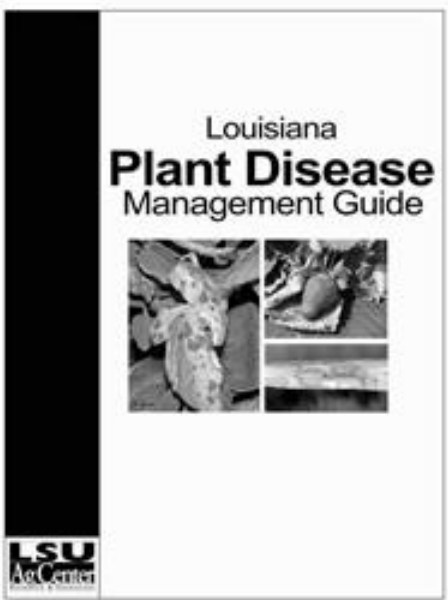
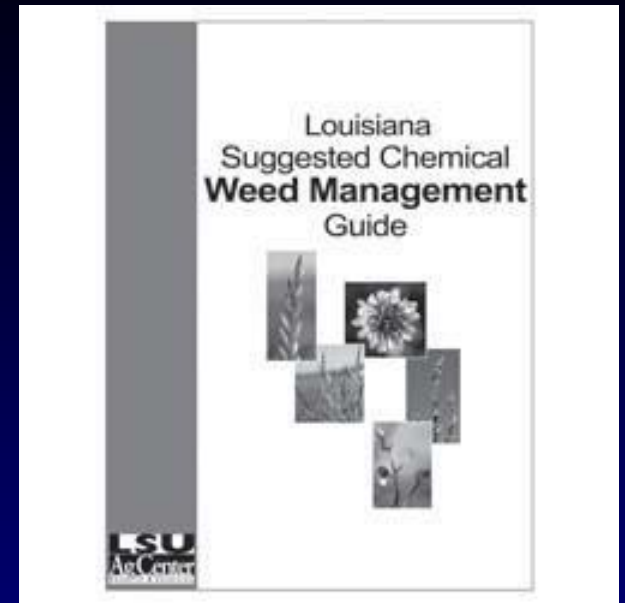
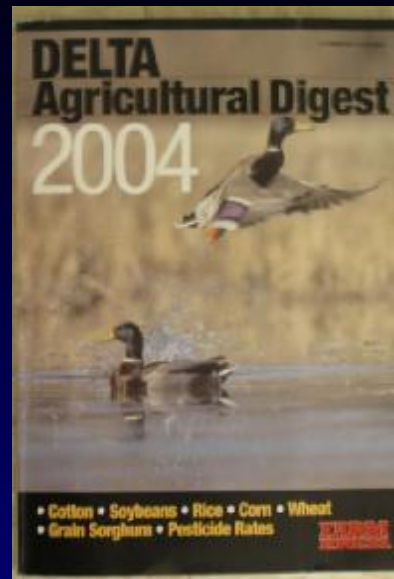
Does it make sense?

■ non-Bt ■ Herculex XTRA ■ YieldGard VT Triple Pro ■ SmartStax



Bt Non-Bt
Stalk Lodging Protection

Means designated with the same letter are not significantly different, Tukey's honest significant difference test, $P \leq 0.05$.



Data Presentation / Rec.'s



- What are the comparisons?
- What is the scale on the graph?

At-Planting Insecticides in Field Corn insecticide vs Insecticide Nematicide

Treatment	Rate/acre mg ai/seed	Stand (no./acre)	Yield (bu/acre)	Bu> I250
Insecticide 250	0.25	21567a	144.1b	---
Insecticide + Nematicide	----	23332a	156.0a	11.9
<i>(P>F)</i>		0.09	0.05	---

At-Planting Insecticides in Field Corn Cruiser vs Avicta Complete

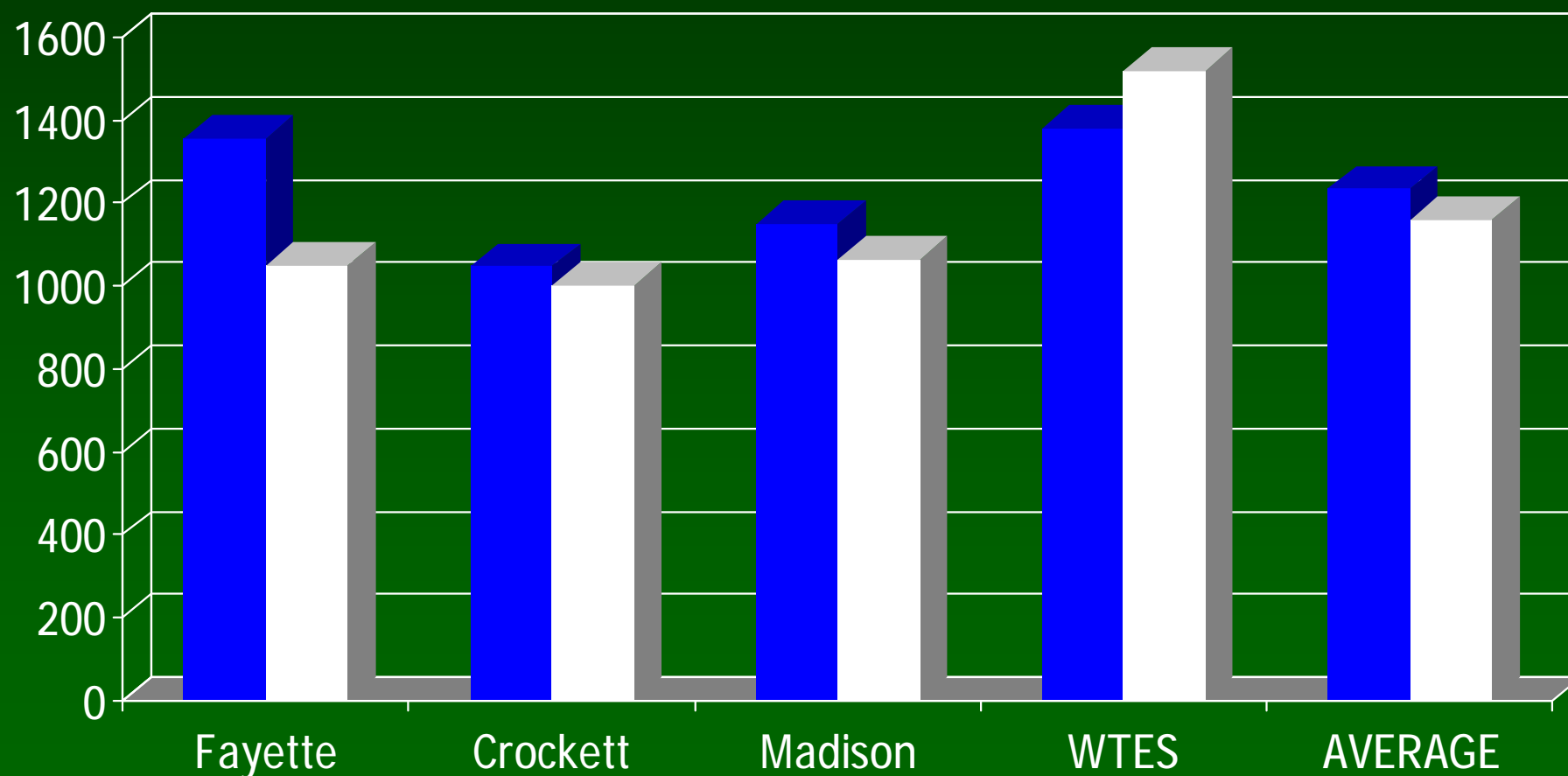
Treatment	Rate/acre mg ai/seed	Stand (no./acre)	Yield (bu/acre)	Bu> I250
Insecticide 250	0.25	21567a	144.1b	---
Insecticide 500	0.5	23528a	158.8a	14.7
Insecticide + Nematicide	----	23332a	156.0a	11.9
<i>(P>F)</i>		0.09	0.05	---



X-2G2BY (lint yield per acre)



■ X-2G2BT ■ Check

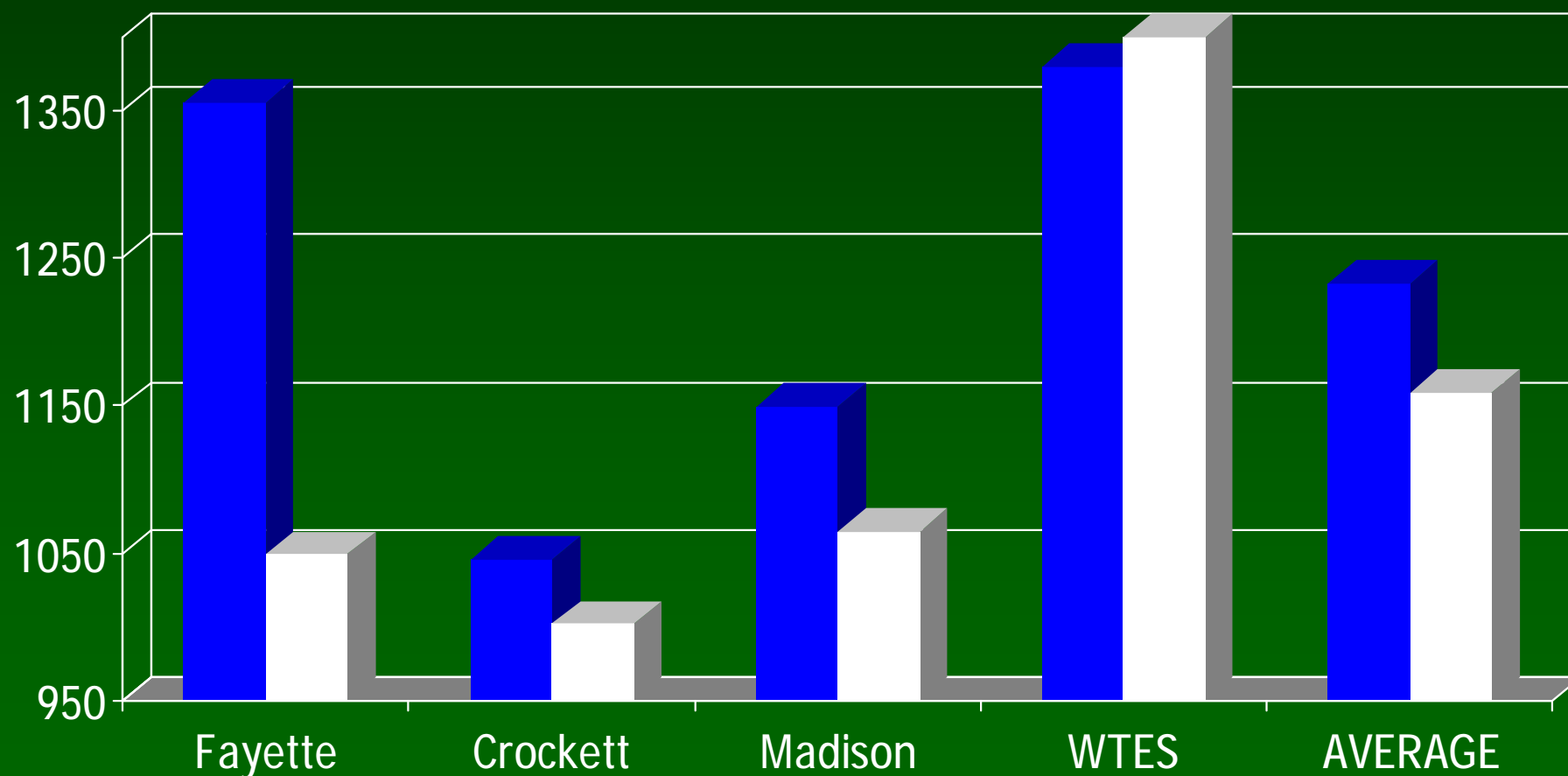


V=10.8, P=0.4787, LSD_(0.05) = 291 lb

X-2G2BY (lint yield per acre)



■ X-2G2BT ■ Check



V=10.8, P=0.4787, LSD_(0.05) = 291 lb

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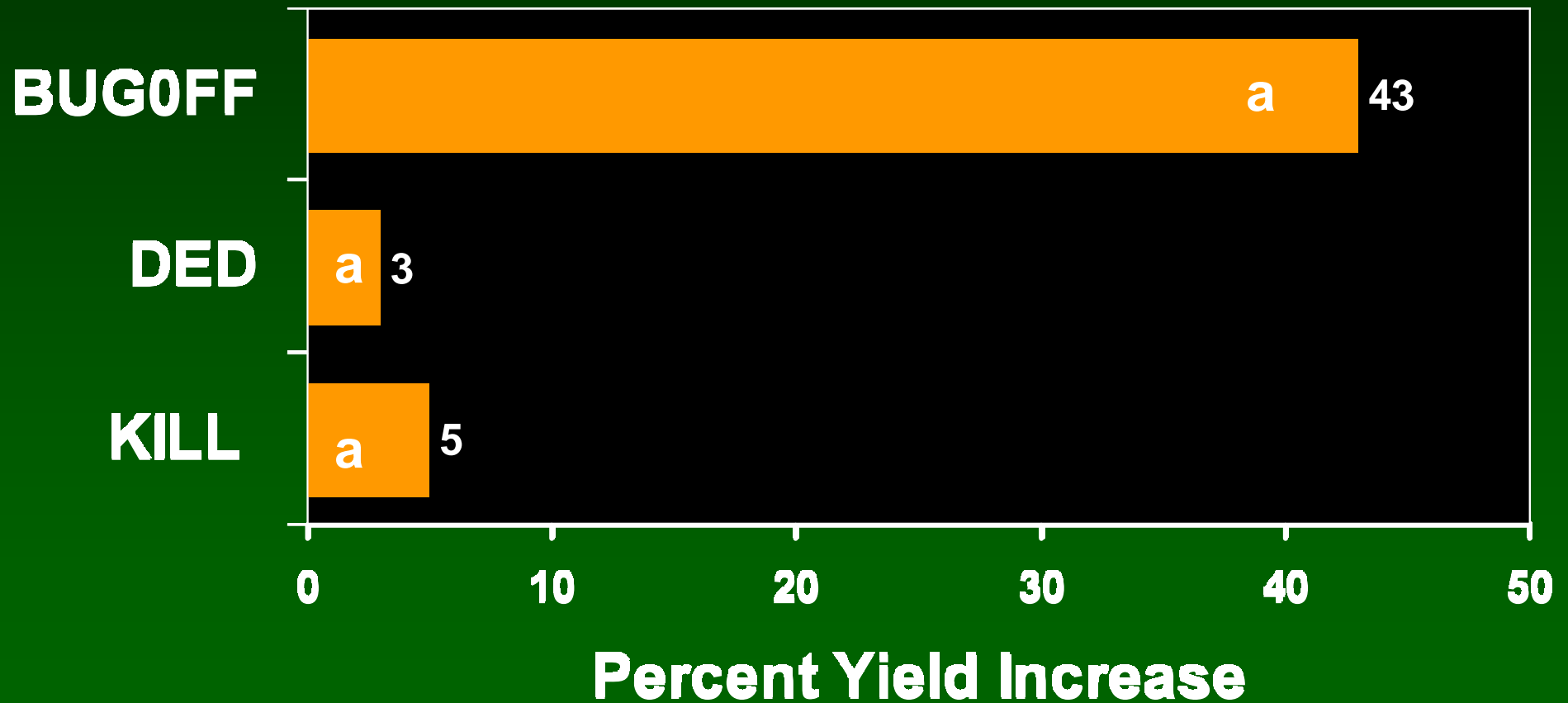
Statistics is the mathematical torture of data to make results mean what you would like them to.

What is a statistical difference?



- There is ALWAYS a difference between two numbers.
- Statistical differences allow us to determine if the difference is:
 - ACTUAL and REPEATABLE
 - or due to chance, inherent variation, moon phase,
- $P=0.05$ means:
 - We are 95% sure the difference is REAL

Yield Response to Pesticide Treatments (100 Trials)



Crop Protection Recommendations

- | Recommendations are guidelines.
- | Components of control guides.
 - u Product and rates.
 - u Application timing (Action levels).

2011

CONTROL

Soybean INSECT PESTS



Redbanded Stink Bug⁹ (*Piezodorus guildinii*)



Control

Orthene (Acephate 90)	0.75	NA
Endigo	see label	32-28.4
Leverage 360	see label	45.7
Brigade (2)	0.1	20
Hero (1.24)	0.1	12.4

Suppression

Cyfluthrin (2)	0.044	45
----------------	-------	----

24 stink bugs in
100 sweeps

Crop Protection Recommendations

- | Recommendations are guidelines.
- | Components of control guides.
- | Influenced by numerous factors.
- | Recommendations generally conform extremes rather than the minimum.



- Take a CRITICAL look when evaluating data and making recommendations.
- Major problem of researchers extension specialists, dealers, salesmen, and consultants is to put too much emphasis on a single data set.



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