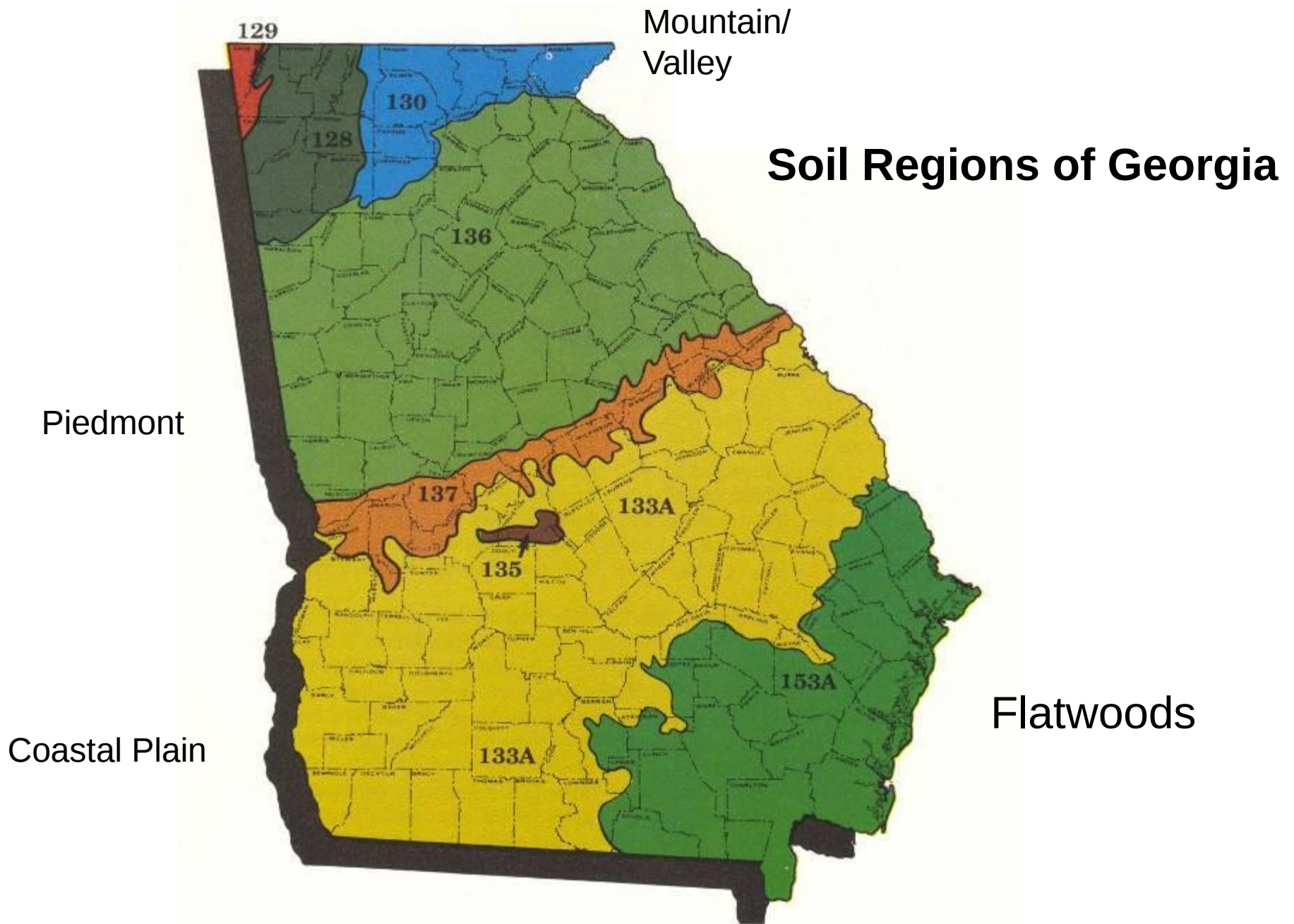


Opportunities for Fluid Fertilizer Use in Row Crops in Georgia



Glen Harris – University of Georgia (Tifton)





Soils of the Southeast

- Sandy
- Acidic
- Low Fertility
- Highly Weathered
- Poorly Buffered
- Low in Organic Matter





10-34-0

S-28

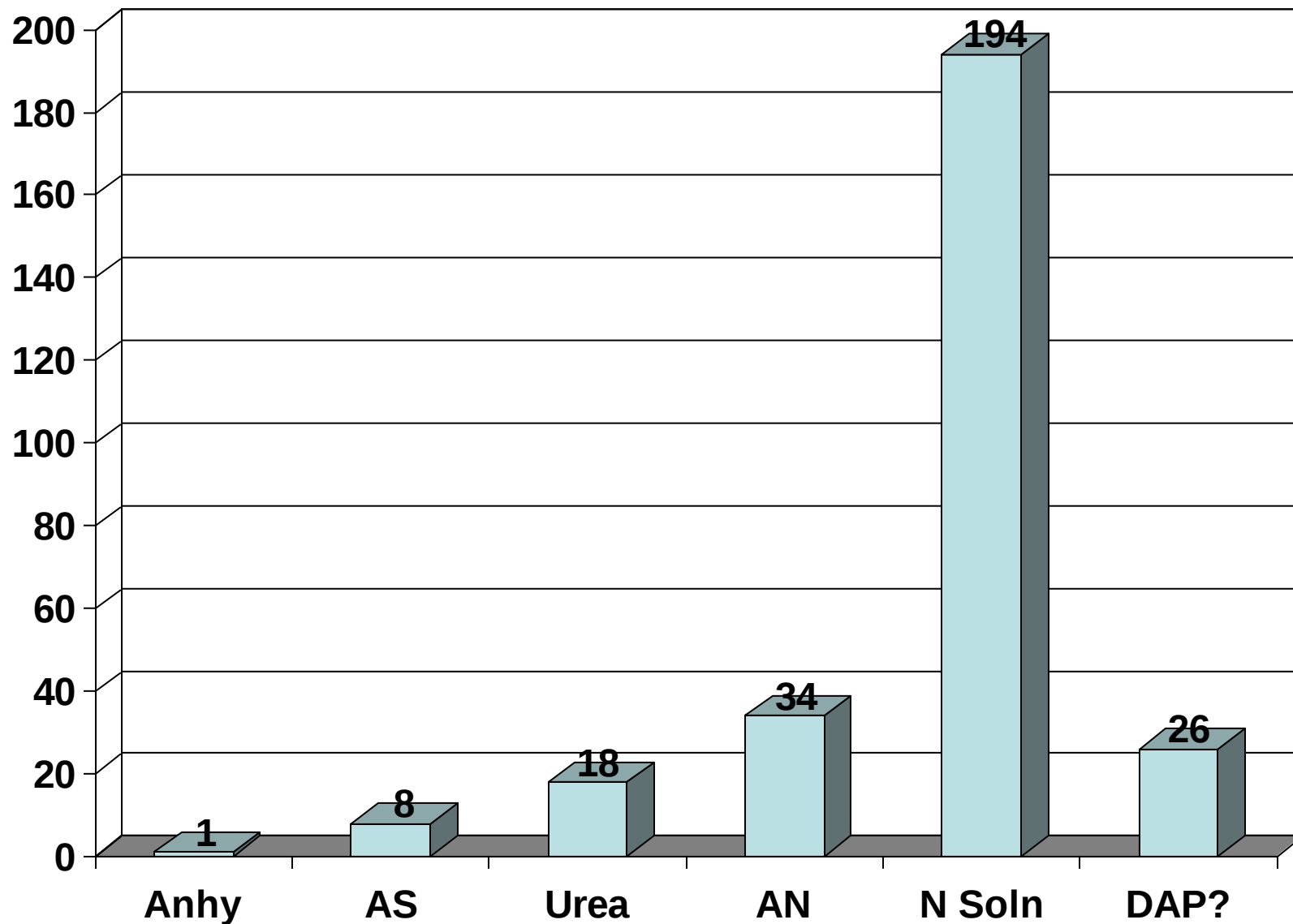
S-28

Do NOT Exceed 15 lb N/a in Starter !!
Even in a “2 x 2” Placement !!



Nitrogen Fertilizers Sold in Georgia – FY 06

(Tons x 1000)



Foliar Feeding



Jeff Davis County
September 15 '09



DP 555 BR

DELTAPINE®

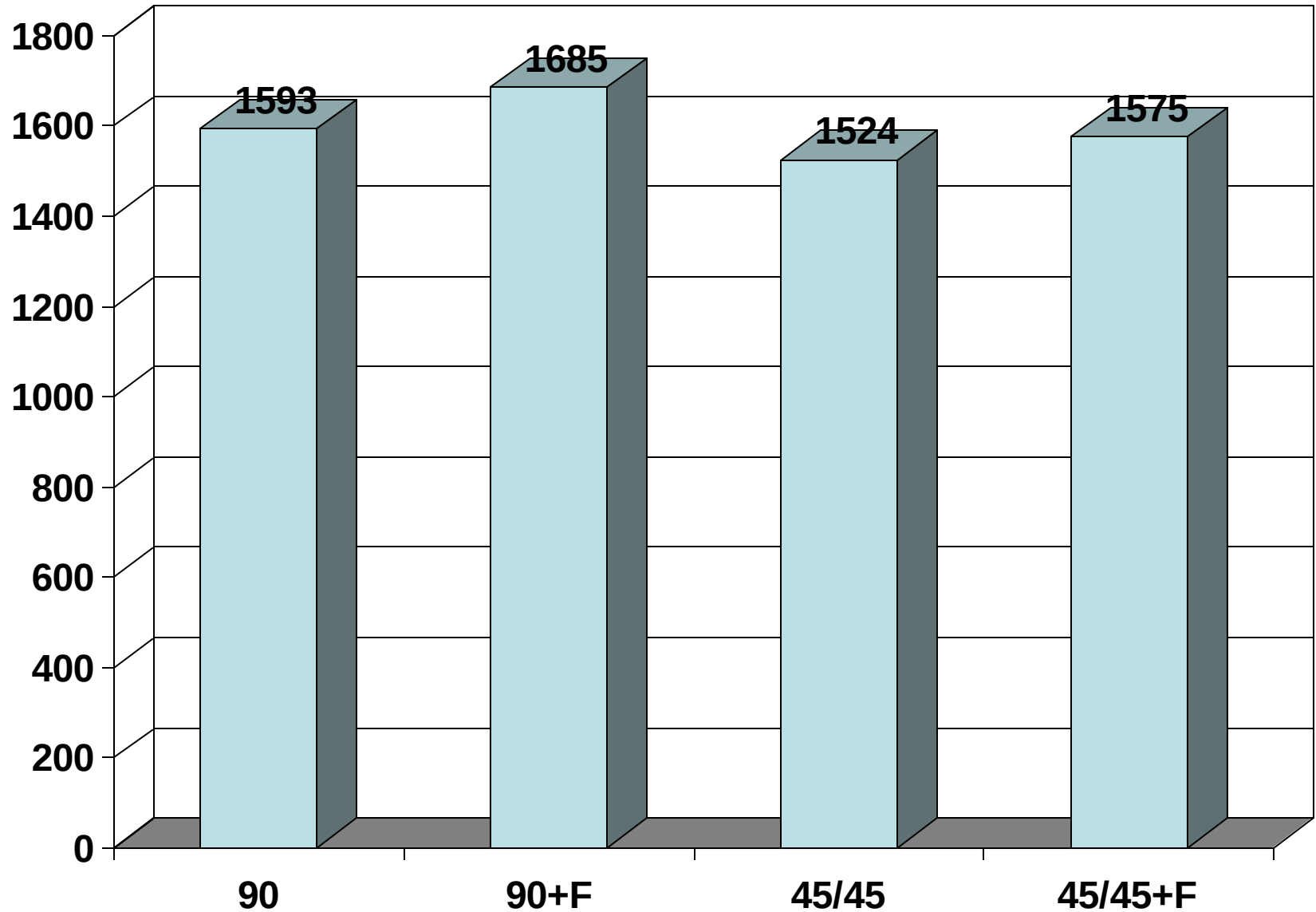




Potassium Deficiency
“Early” Leafspot in Cotton

Potassium Trial 1998 – RDC Pivot

Lbs lint/a

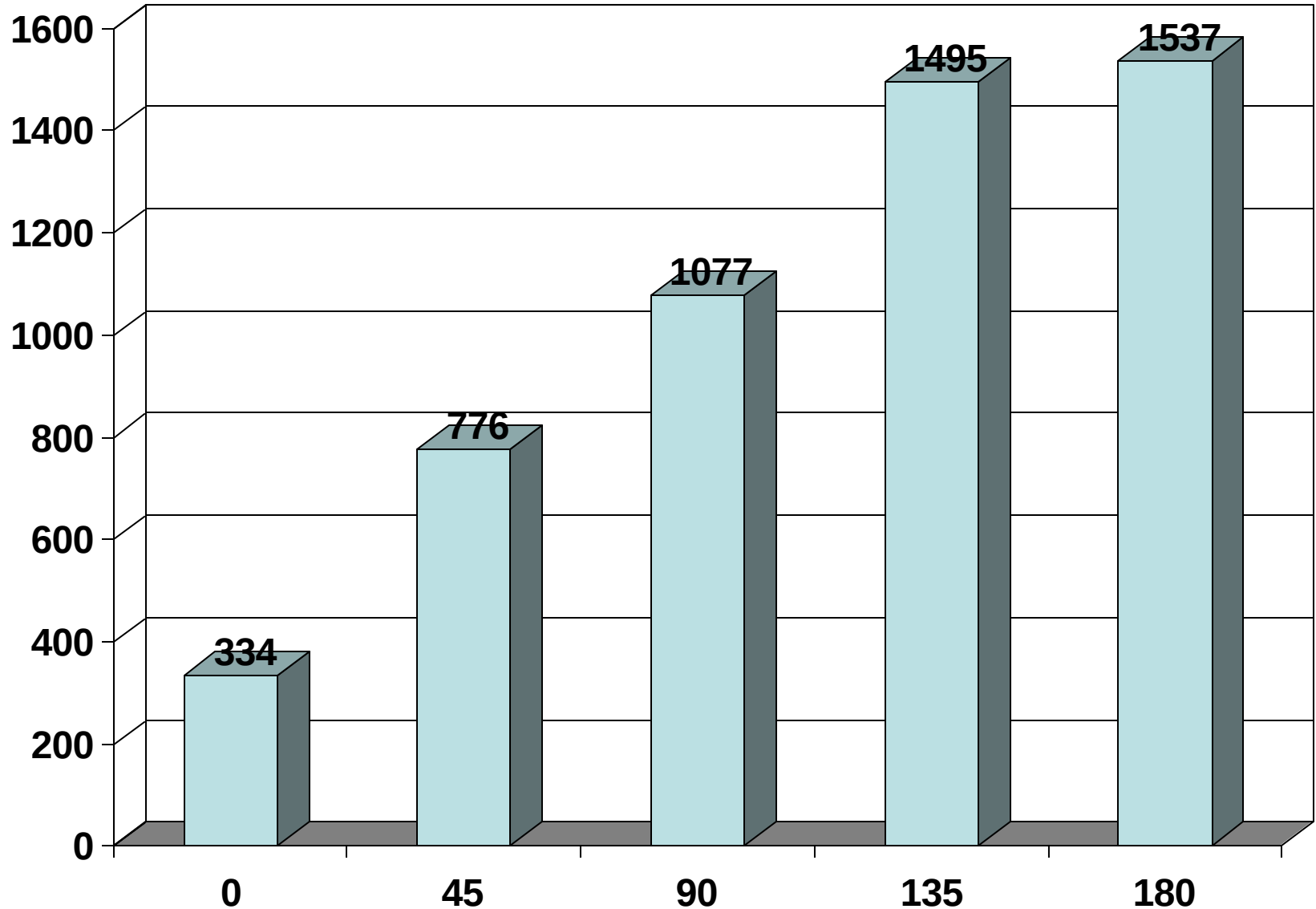


Sunbelt Expo (Moultrie, Georgia) - 2009



K Rate on Cotton – Sunbelt Expo 2009

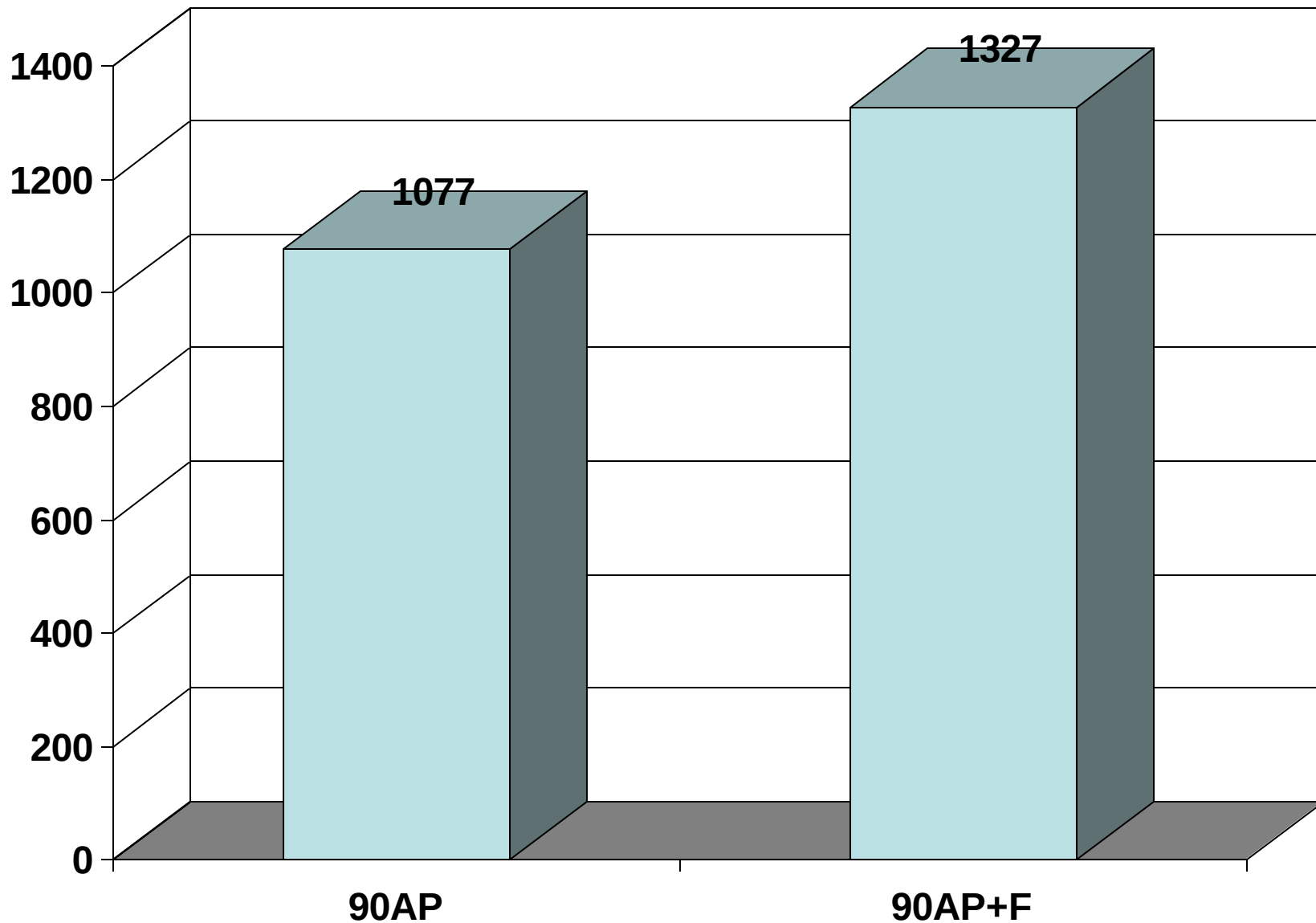
Lbs lint/a **DP 0935** (STK = 46 Rec= 135)



K Rate on Cotton – Sunbelt Expo 2009

DP 0935

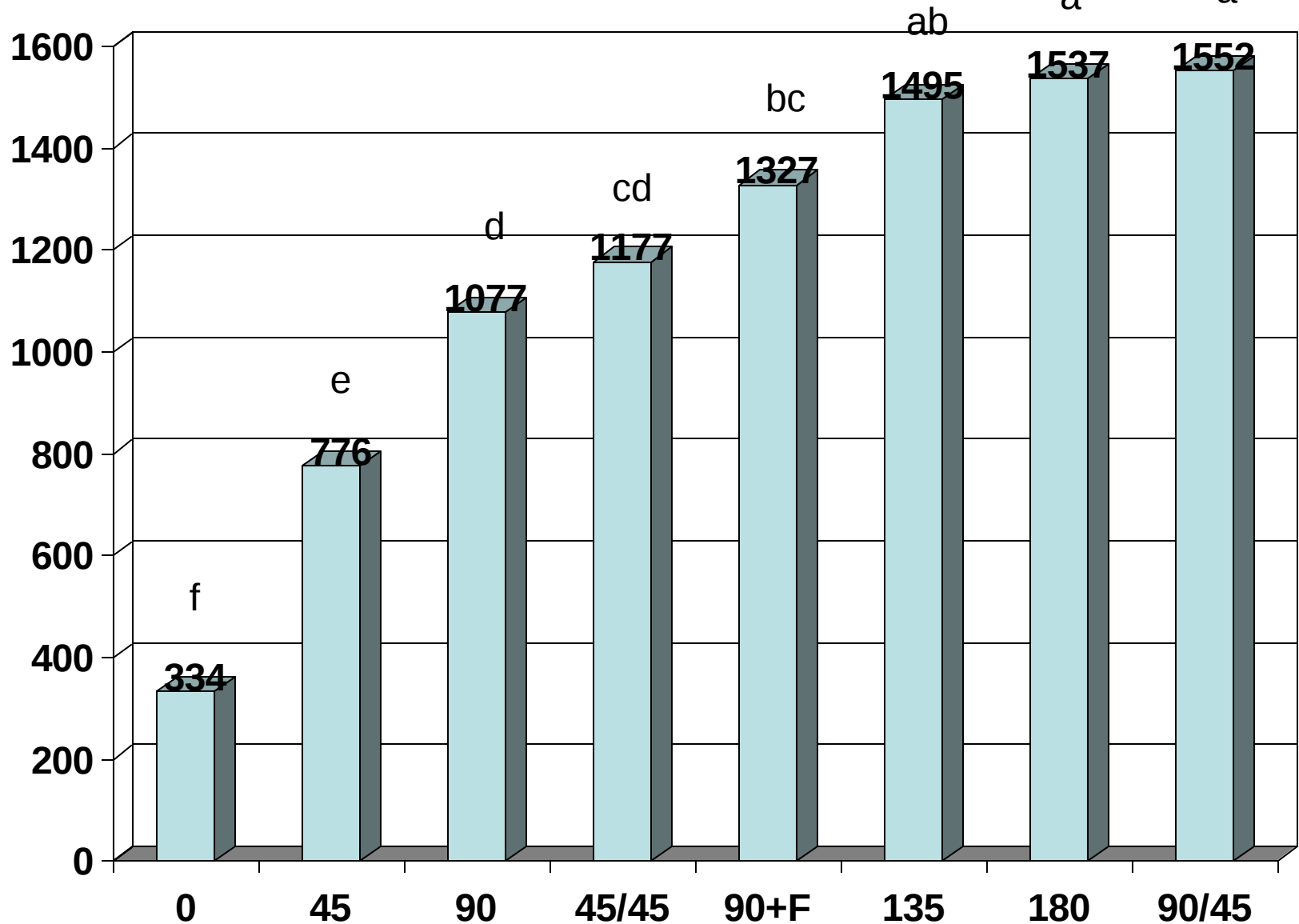
Lbs lint/a



K Rate on Cotton – Sunbelt Expo 2009

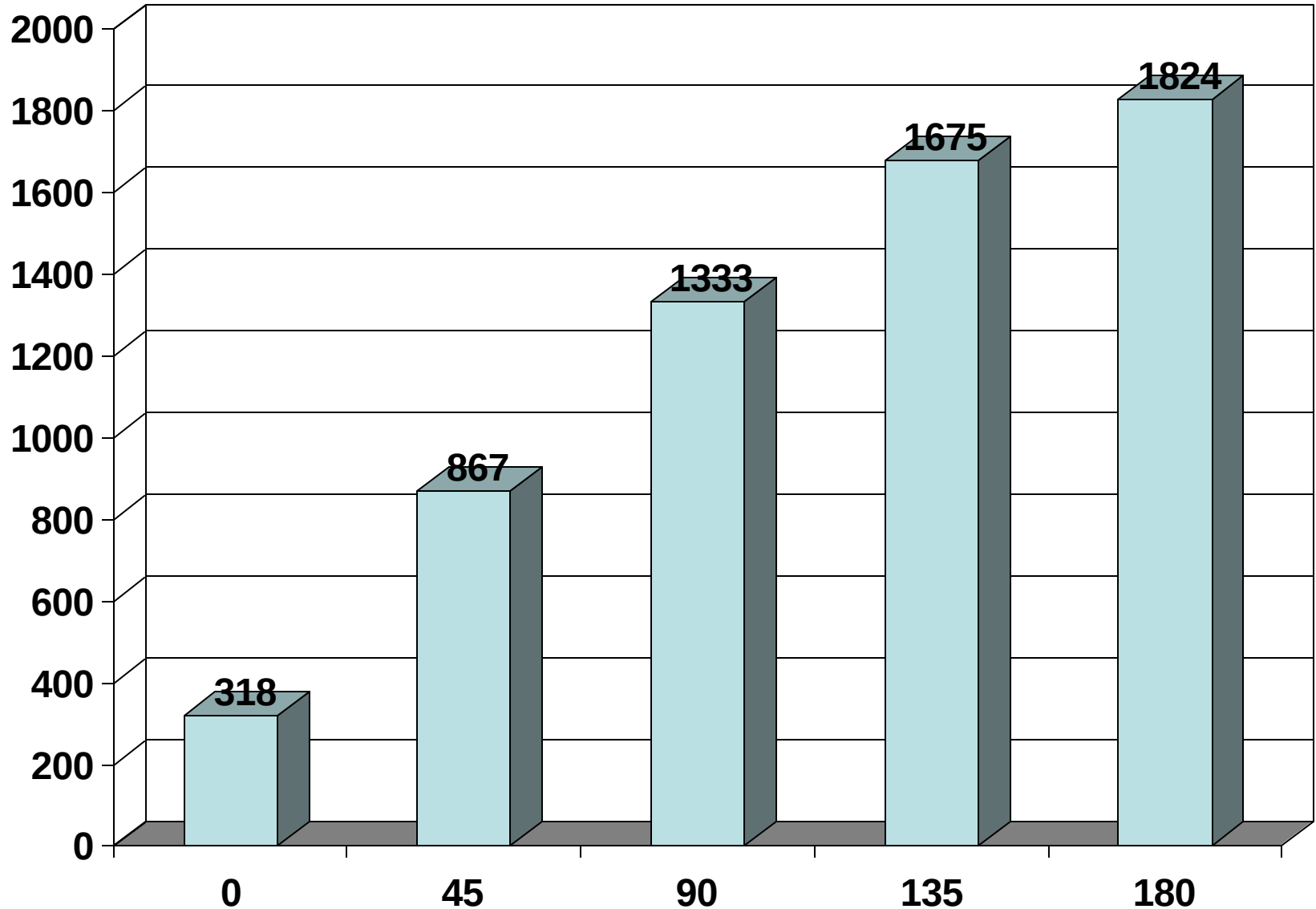
DP 0935

Lbs lint/a



K Rate on Cotton – Sunbelt Expo 2009

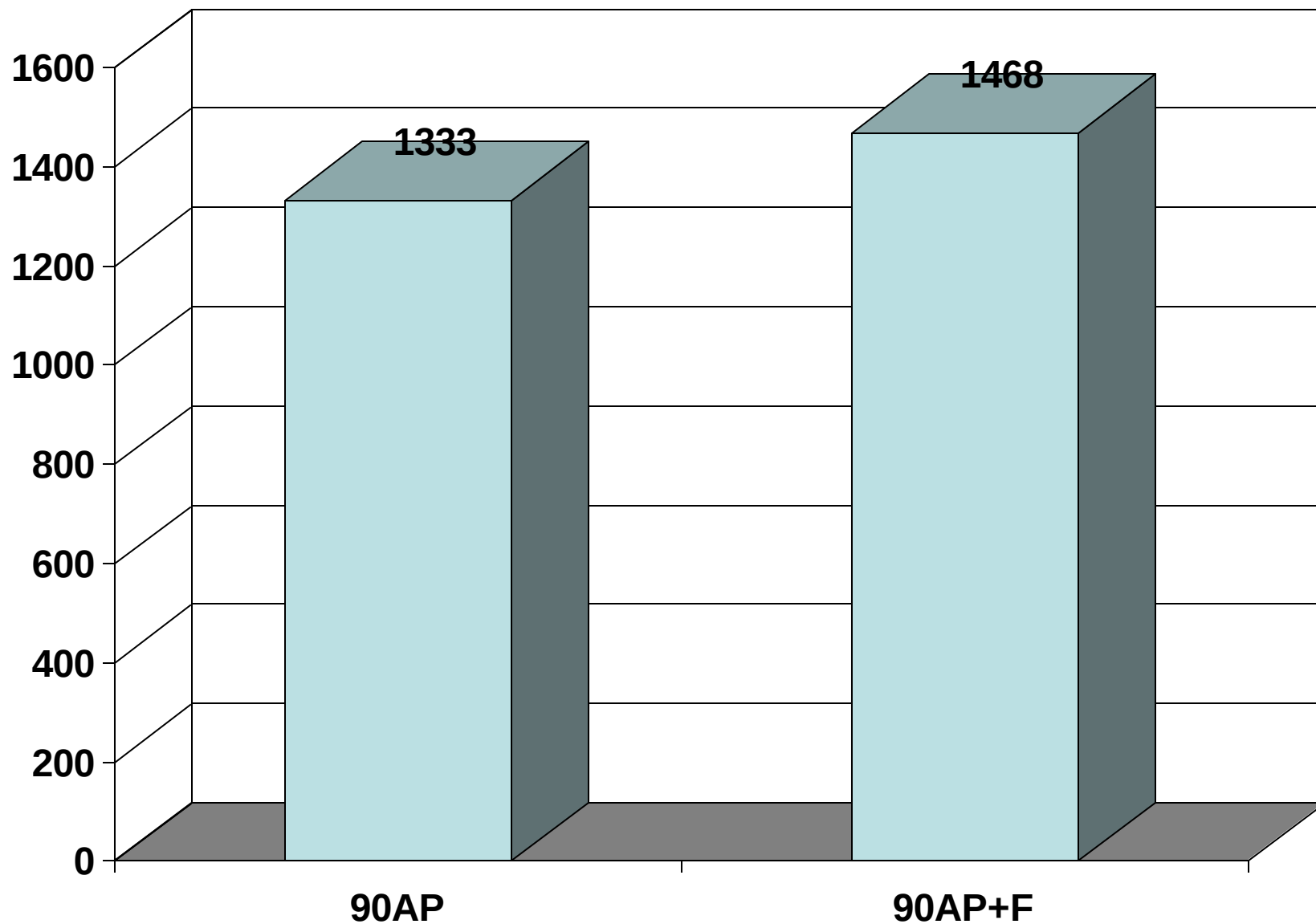
Lbs lint/a DP 0949 (STK = 46 Rec=135)



K Rate on Cotton – Sunbelt Expo 2009

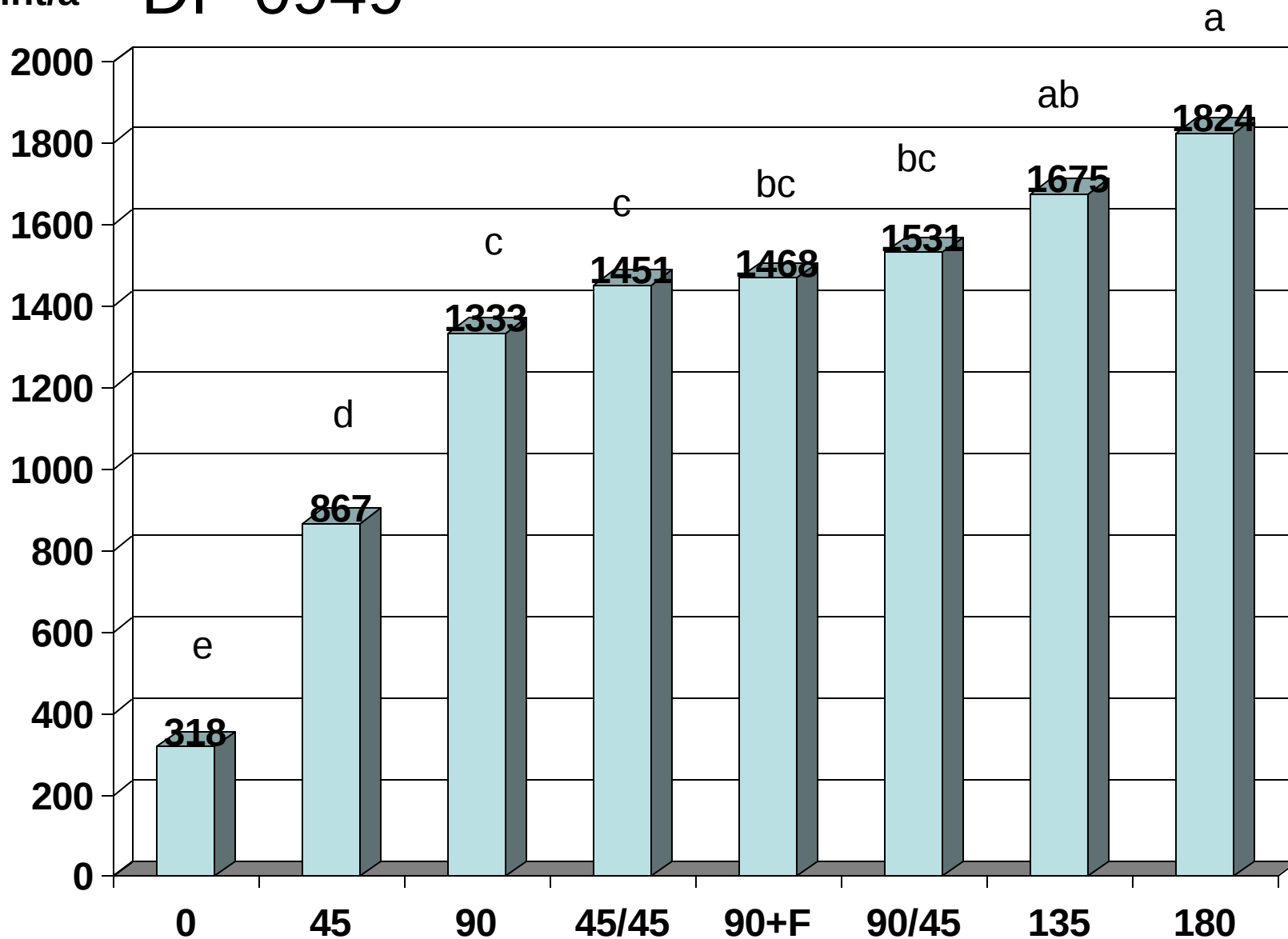
DP 0949

Lbs lint/a



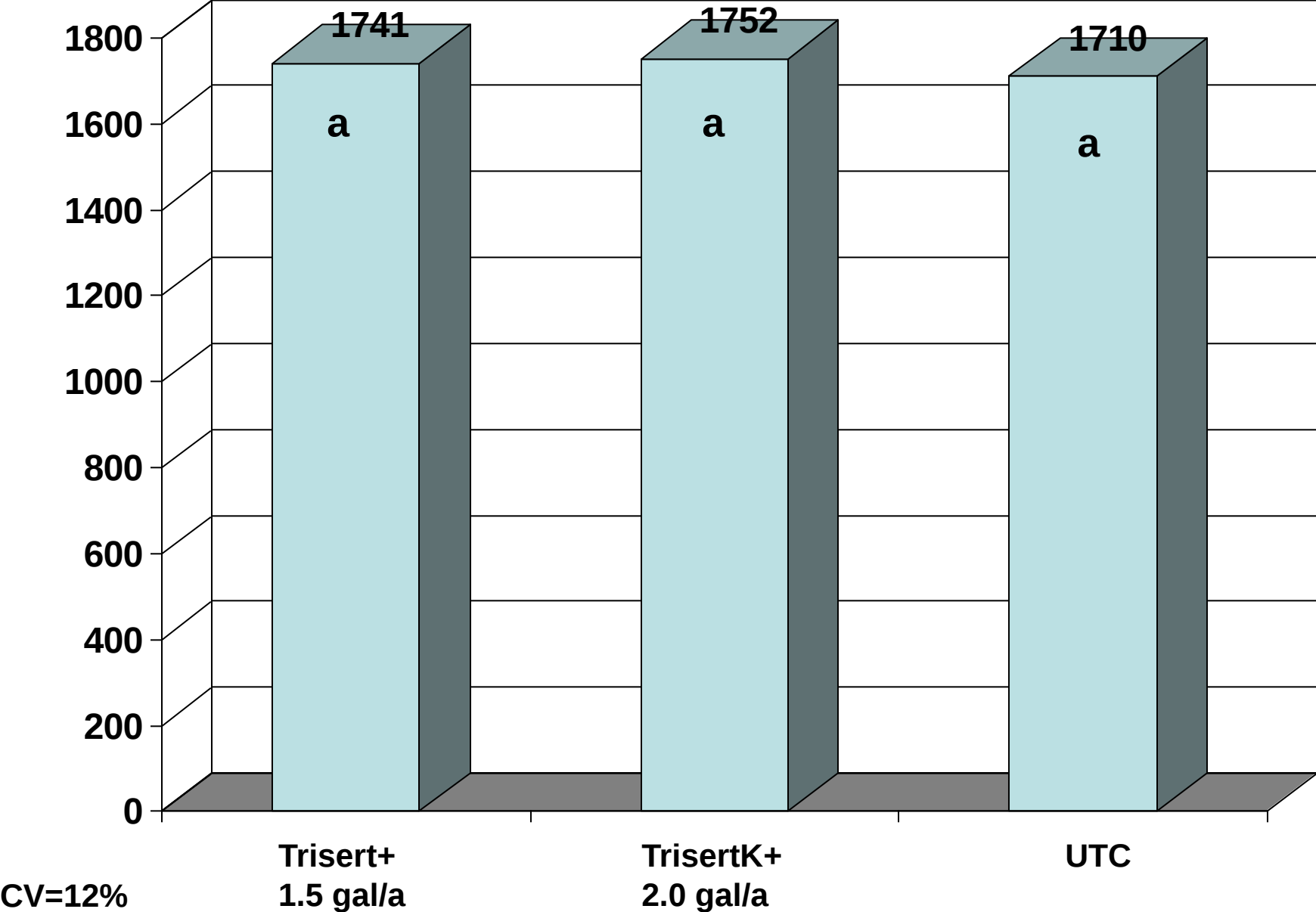
K Rate on Cotton – Sunbelt Expo 2009

Lbs lint/a DP 0949



2006 UAP Foliar K
Sunbelt Expo

Yields (lb lint/a)



Foliar K

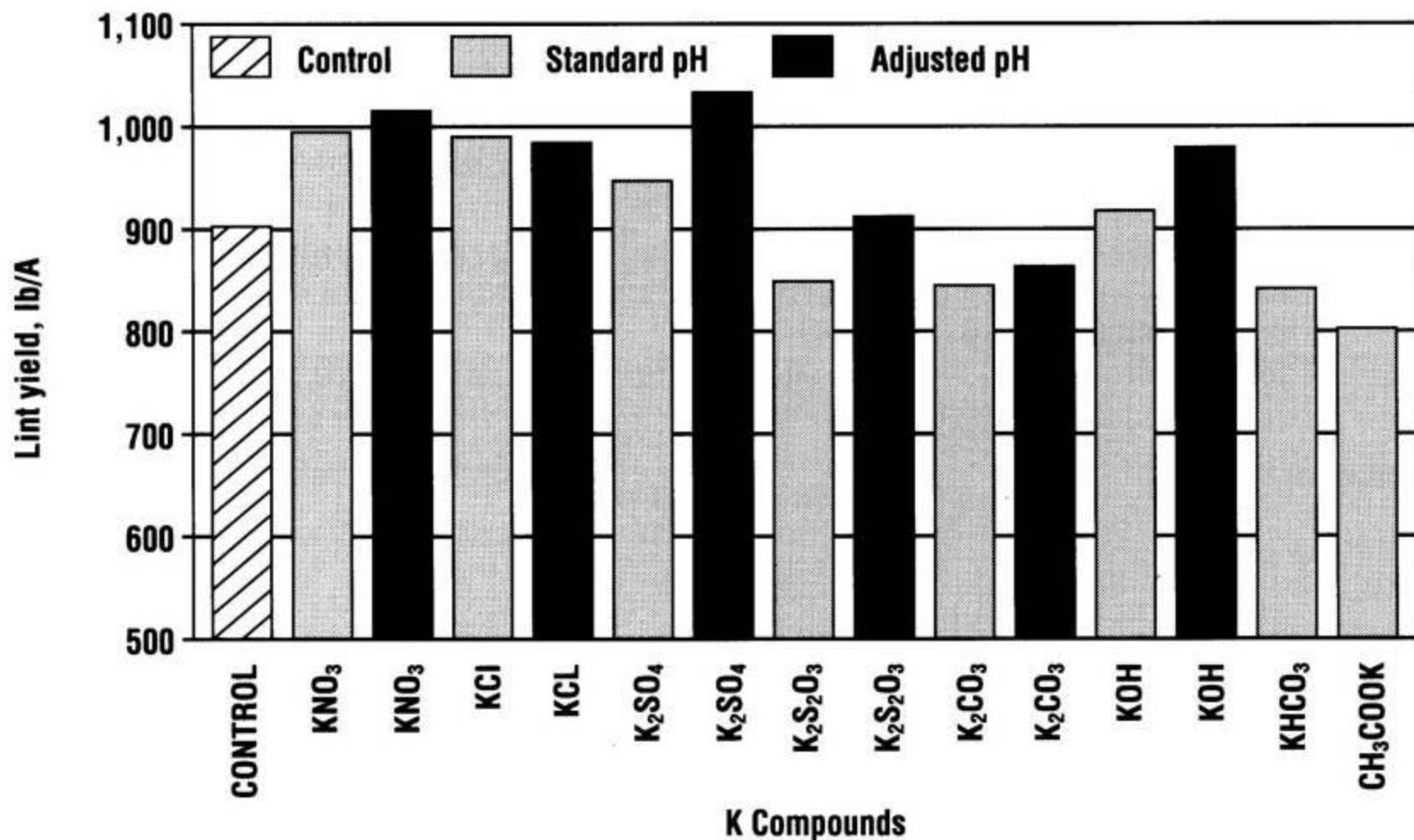


Figure 1. Cotton lint yields were improved by adjusting solution pH in foliar application of several K sources.

July 10 '09



July 10 '09



August 7 '09



September 2 '09



September 10 '09



September 10 '09
N Deficiency



Nitrogen Management

Most Efficient = “3-Way Split”

Preplant



Sidedress



Foliar



2005 N Study – Harris

Preplant

Sidedress

Foliar

0

0

0

0

0

+

30

0

0

30

0

+

30

30

0

30

30

+

30

60

0

30

60

+

0

30

0

0

60

0

0

90

0

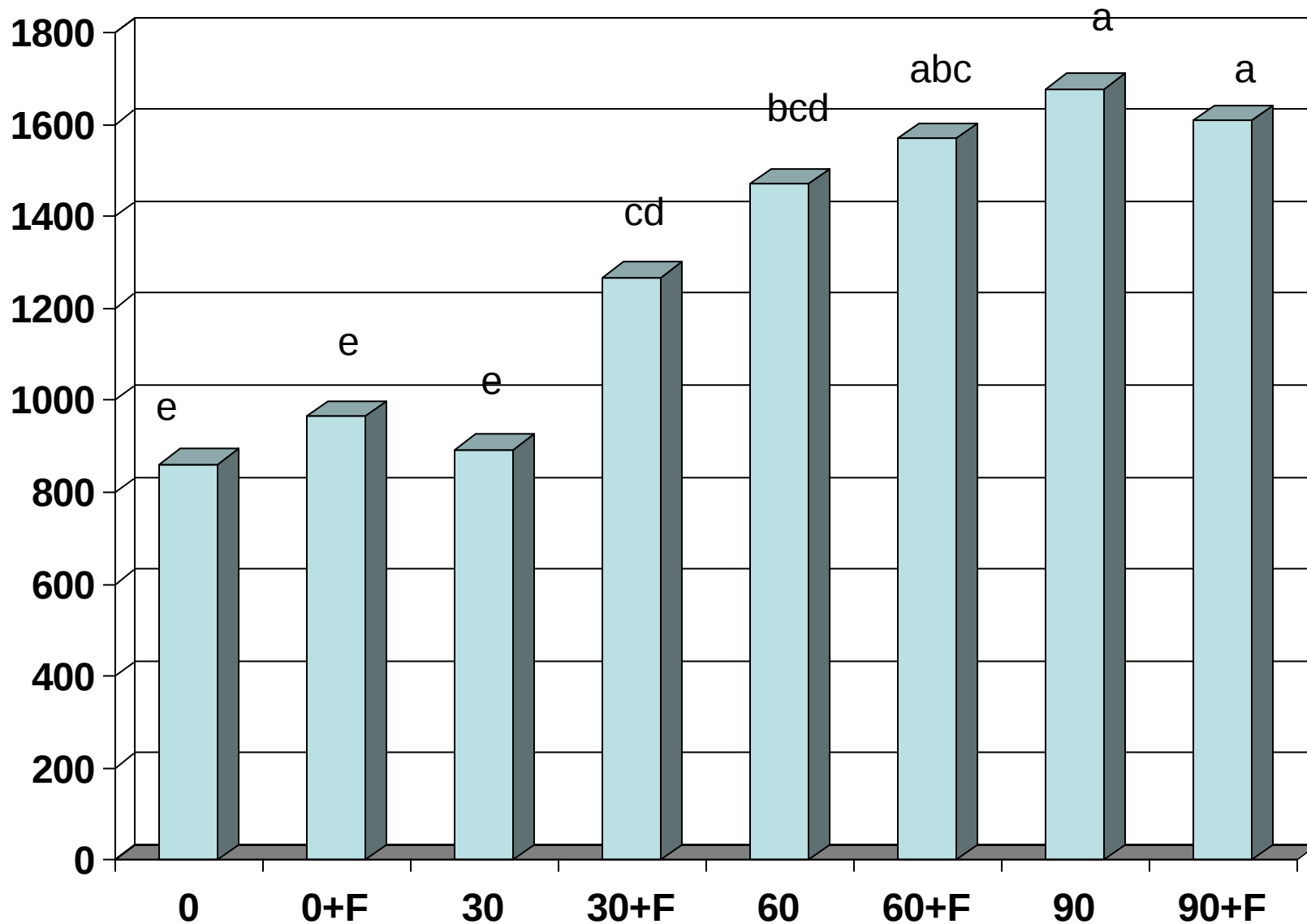
60

0

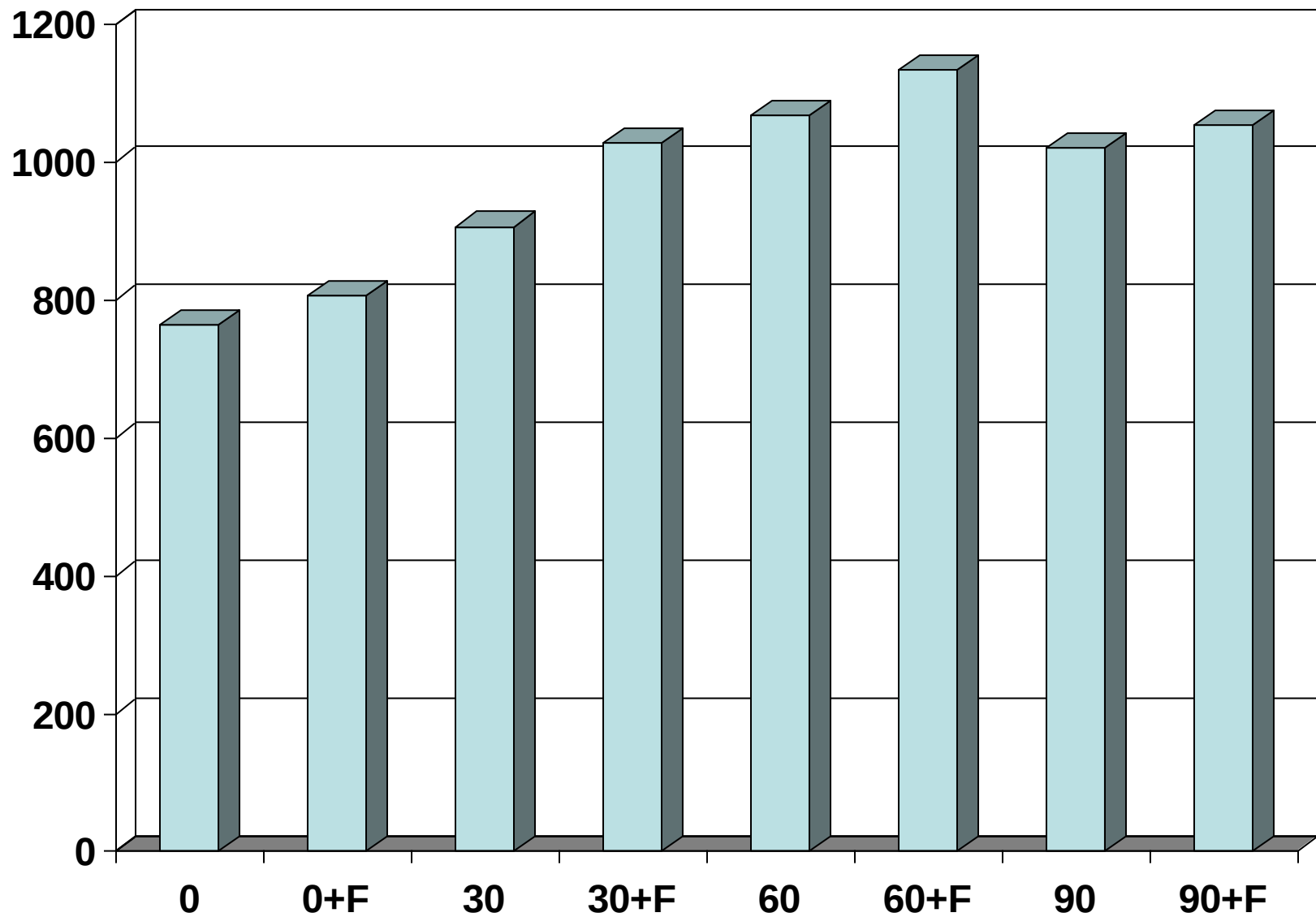
0

N Study 2005 - Harris

Yields (lb lint/a)

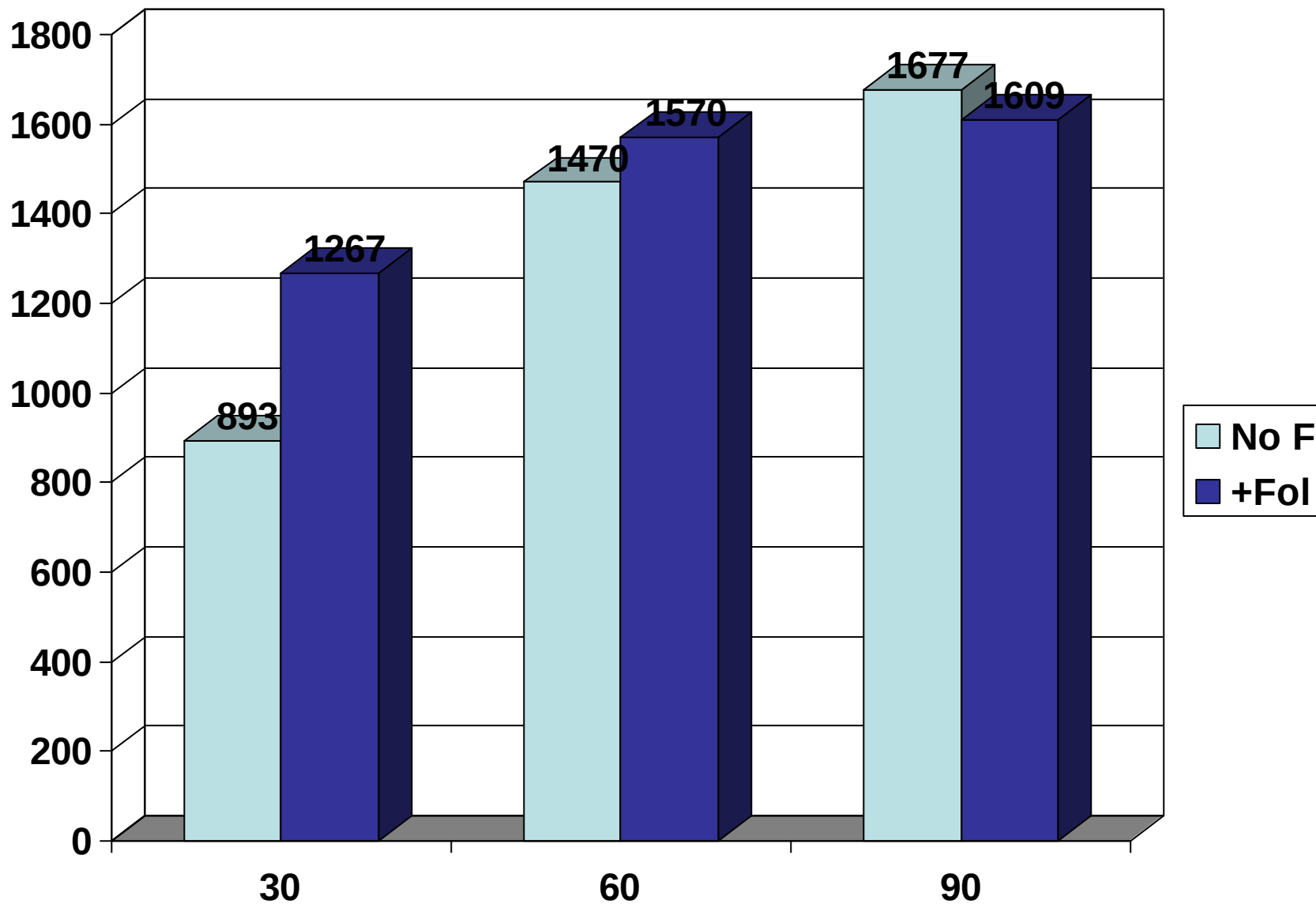


Yields (lb lint/a)



N Study 2005 - Harris

Affect of Foliar Yields (lb lint/a)



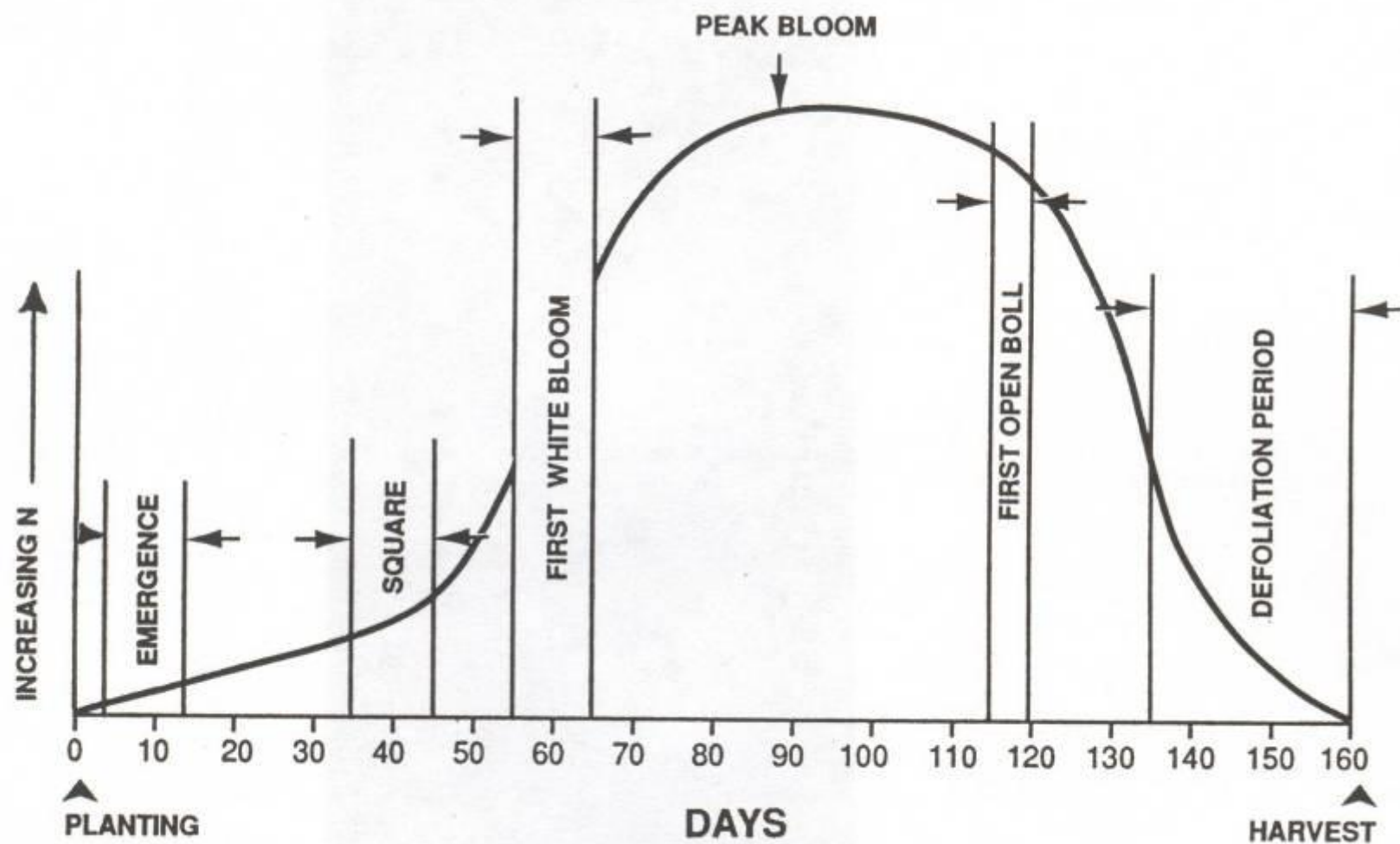
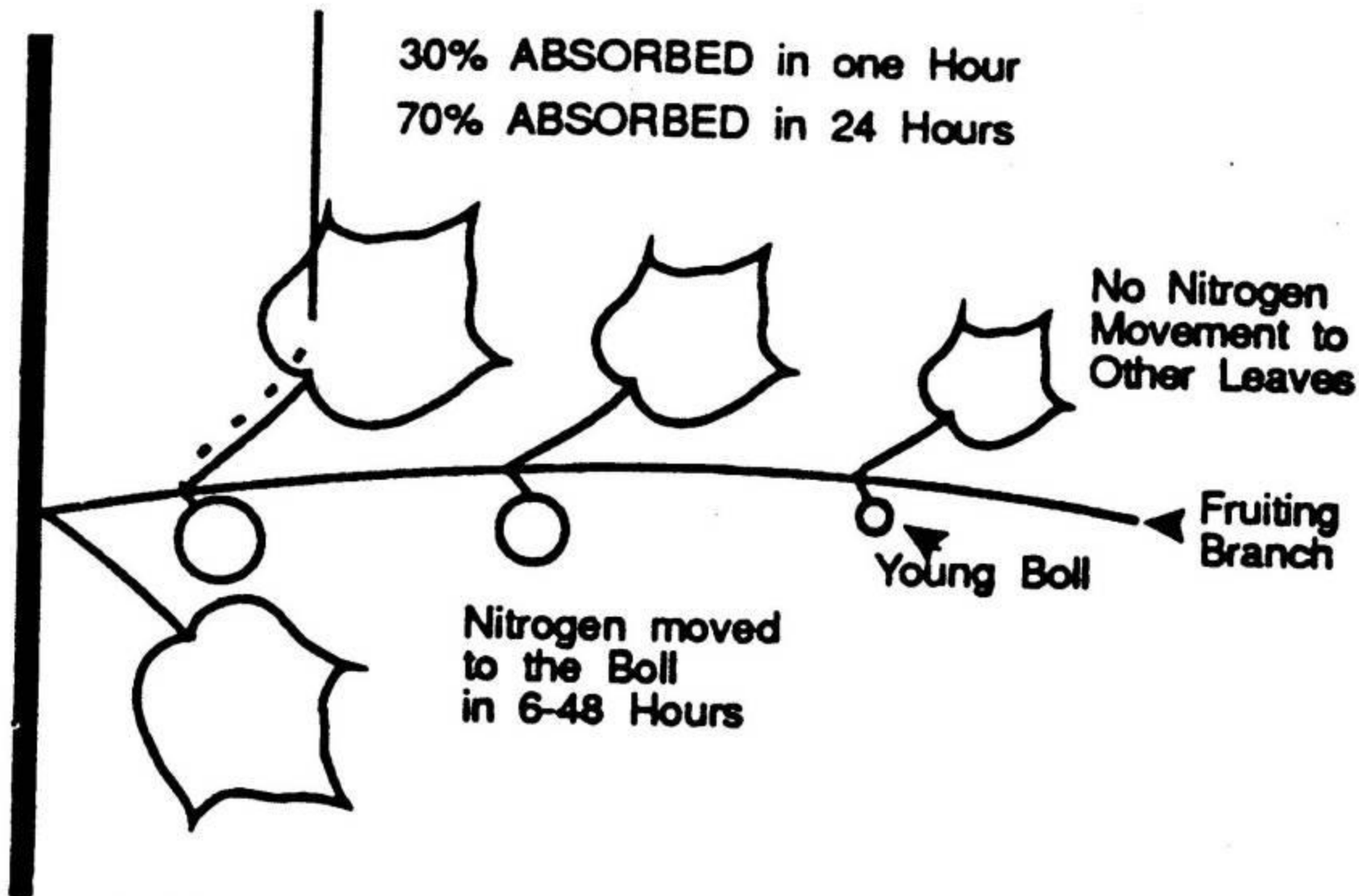


Figure 1. Relative nitrogen requirements of cotton.

30% ABSORBED in one Hour
70% ABSORBED in 24 Hours



Plant Utilization of Urea

Calcium Requirement for Large-Seeded Runner Peanuts





Georgia Green

Georgia O6G

Peanut Seed Size

Large-Seeded Runners (less than 700 seed/lb)

Georgia 06G	628
Florida 07	638
AP-4	648
Georgia 07W	647
Tifguard	652
McCloud	670
AT 3085SRO	685

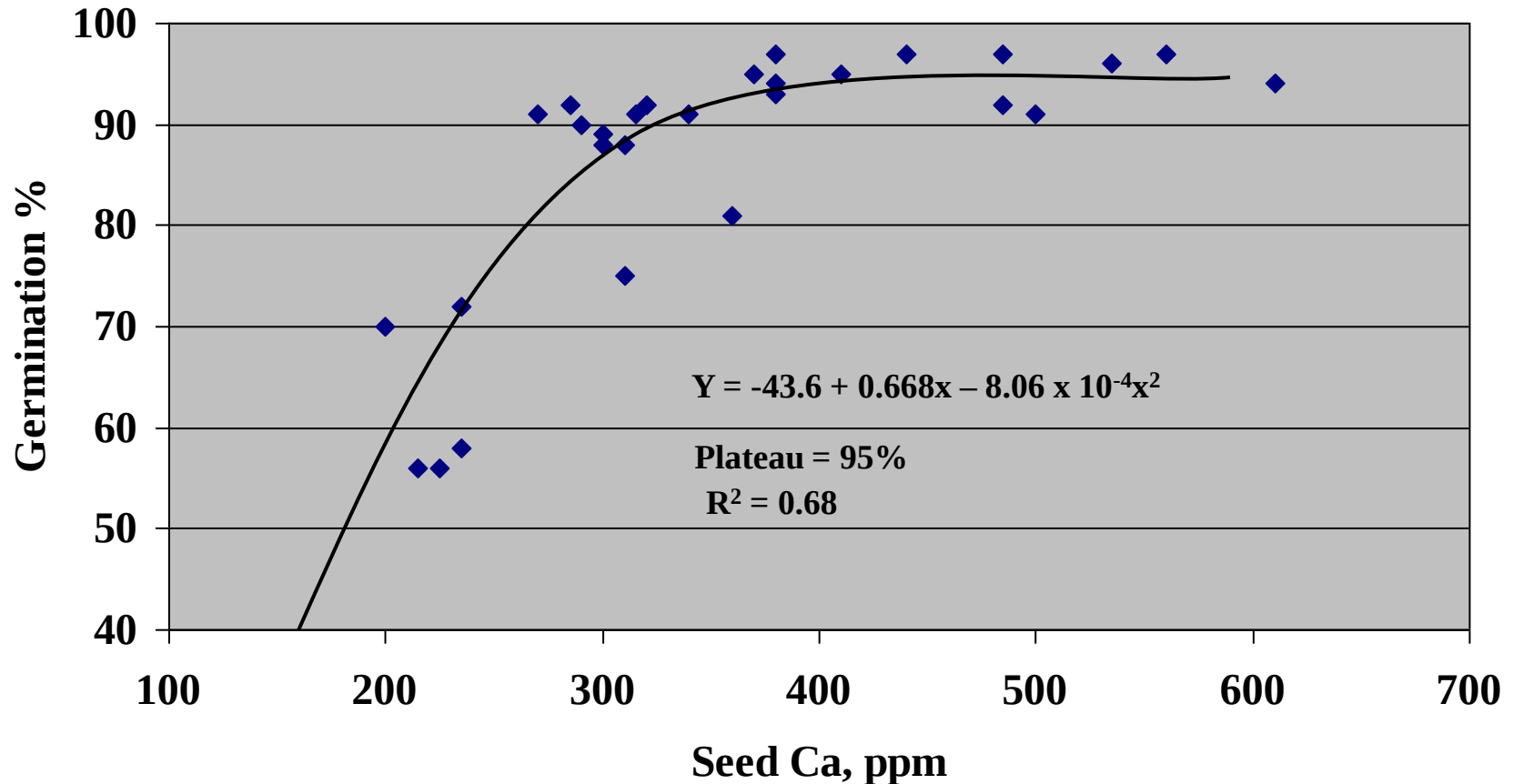
Medium-Seeded Runners (700-800 seed/lb)

Georgia 03L	710
Georgia Greener	724
AP-3	747
Georgia 02C	775

Small-Seeded Runners (800+ seed/lb)

Georgia Green	804
York	842

Affect of Seed Calcium on Percent Germination of Peanut Seed



Source: D.L. Hartzog and J.F. Adams, Auburn University

Provide Calcium to the Pegging Zone

1) Calcium Sulfate (Gypsum/Landplaster) -
- at Bloom

2) “Lime” Method
– at Planting



Calcium Sources

Gypsum/Landplaster/CaSO₄

Granular (mined)

Ex. USG 500

Wet Bulk

Exs. PCS Phosphogypsum

AgriCal FGD or “Smokestack”

Semi-Granular (?)

Lime (Ca/MgCO₃)

Dolomitic and Calcitic

Regular Ground and Fine

“Liquid Calcium”

Foliar (“1 qt/a”) – Not Effective !

CaCl and CaTS – Improve Grade?

Liquid Lime and Liquid Gypsum (?????)

N-Cal 212

Liquid - CaCl





TRICAL

TRICAL®
Fertilizer
WATER-SOLUBLE
3-21-0 NUTRIENT AND
SOIL AMENDMENT

GENERAL INFORMATION
Trical is a highly soluble, water-soluble, fast-acting fertilizer. It is a highly efficient source of phosphorus and is also a source of calcium and sulfur. It is suitable for use on all types of soil and in all types of crops. It is a highly efficient source of phosphorus and is also a source of calcium and sulfur. It is suitable for use on all types of soil and in all types of crops.

APPLICATIONS
Trical is a highly soluble, water-soluble, fast-acting fertilizer. It is a highly efficient source of phosphorus and is also a source of calcium and sulfur. It is suitable for use on all types of soil and in all types of crops. It is a highly efficient source of phosphorus and is also a source of calcium and sulfur. It is suitable for use on all types of soil and in all types of crops.

SAFETY
Trical is a highly soluble, water-soluble, fast-acting fertilizer. It is a highly efficient source of phosphorus and is also a source of calcium and sulfur. It is suitable for use on all types of soil and in all types of crops. It is a highly efficient source of phosphorus and is also a source of calcium and sulfur. It is suitable for use on all types of soil and in all types of crops.





Timing of N Applications

- Split Applications
- Preplant ($\frac{1}{4}$ to $\frac{1}{3}$) then remainder at “Sidedress”
- Fertigation
 - Ex. 25 % (AP), 22.5 % (6,12 and 18 L) then 7.5 % (at tassel)
- Reduces Risk of N Loss
- Reduces Total N Rate Needed
- Physiological Reasons



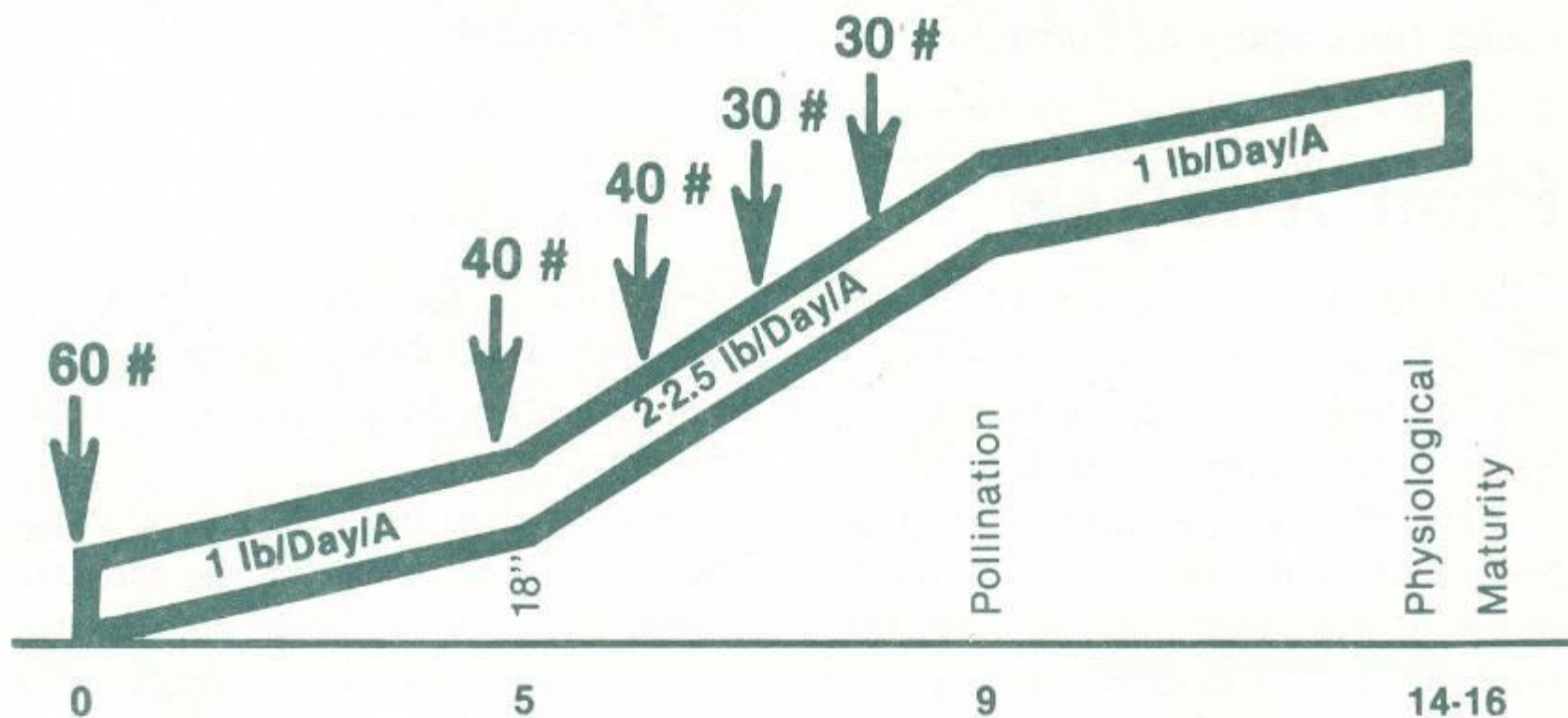


Figure 5. Nitrogen Fertilization Scheme (150 Bu/A Yield Goal) and Daily Nitrogen Requirement of Corn

“Enhanced Efficiency (EE)” Fertilizers

New Term Coined by The Fertilizer Institute (TFI)

“...products that minimize the potential of nutrient loss to the environment.”

Slow/Controlled Release

Absorbed

Coated

Occluded

Reacted

CoRoN



Stabilized/Additive

Nitrification Inhibitors

Urease Inhibitors

Stabilizers



Association of American Plant Food Control Officials (AAPFCO)













VAN

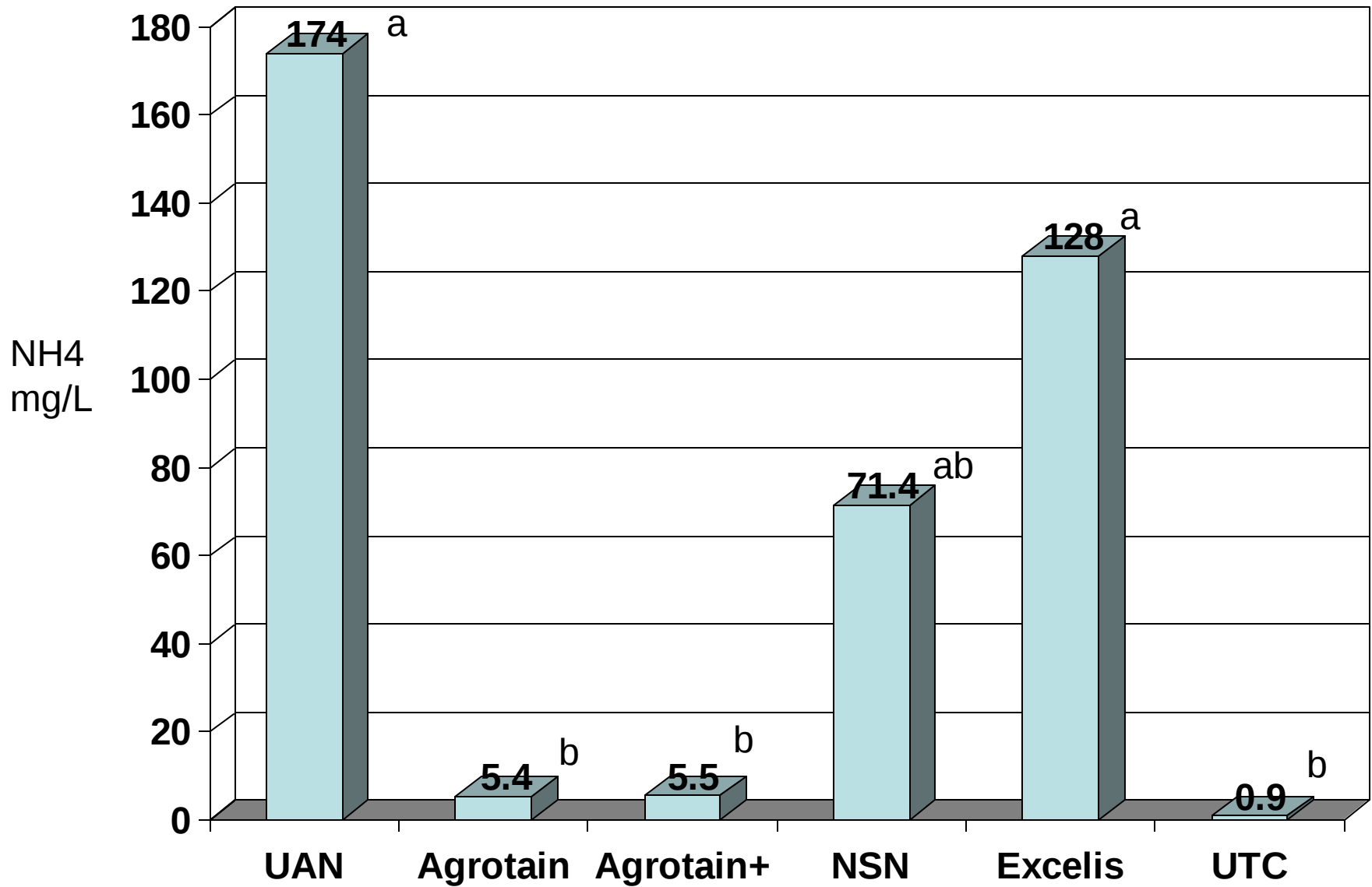
Aprolia

Aprolia Plus

NSN

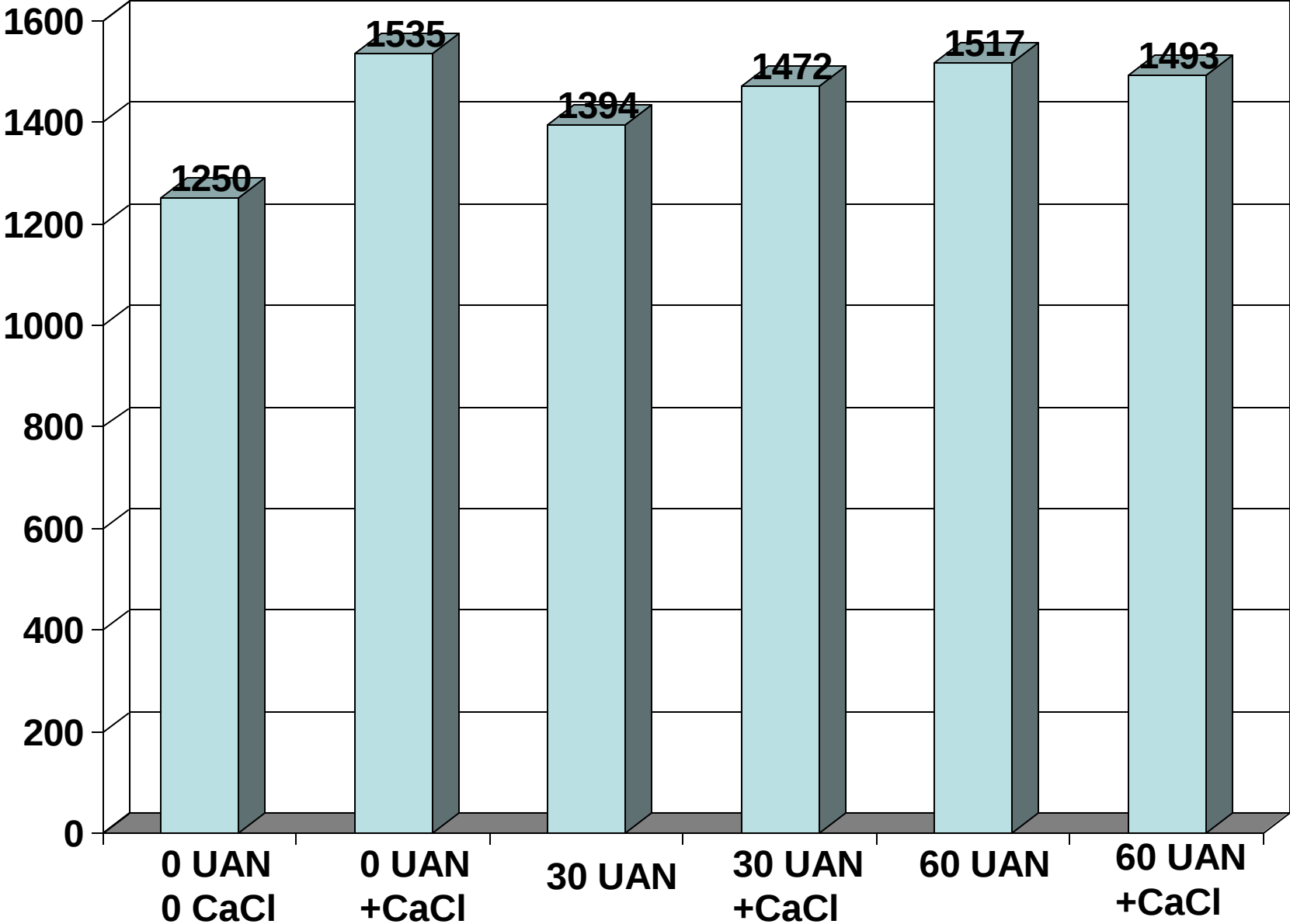
Excalis

2007 Ponder Farm
Corn - 120 lb N/a Sidedress (Liquids)



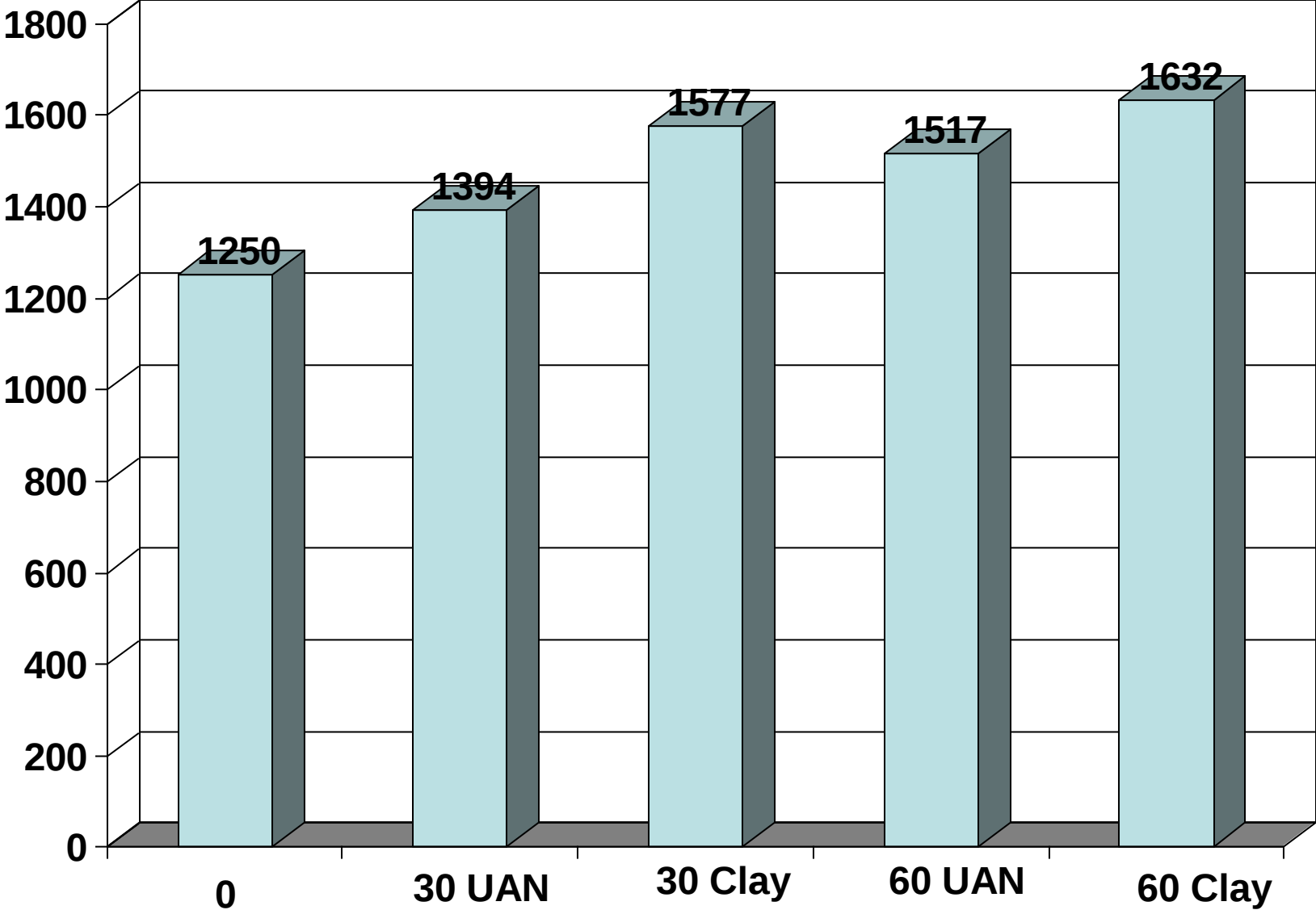
2006 Tetra UAN/CaCl
Sunbelt Expo

Yields (lb lint/a)

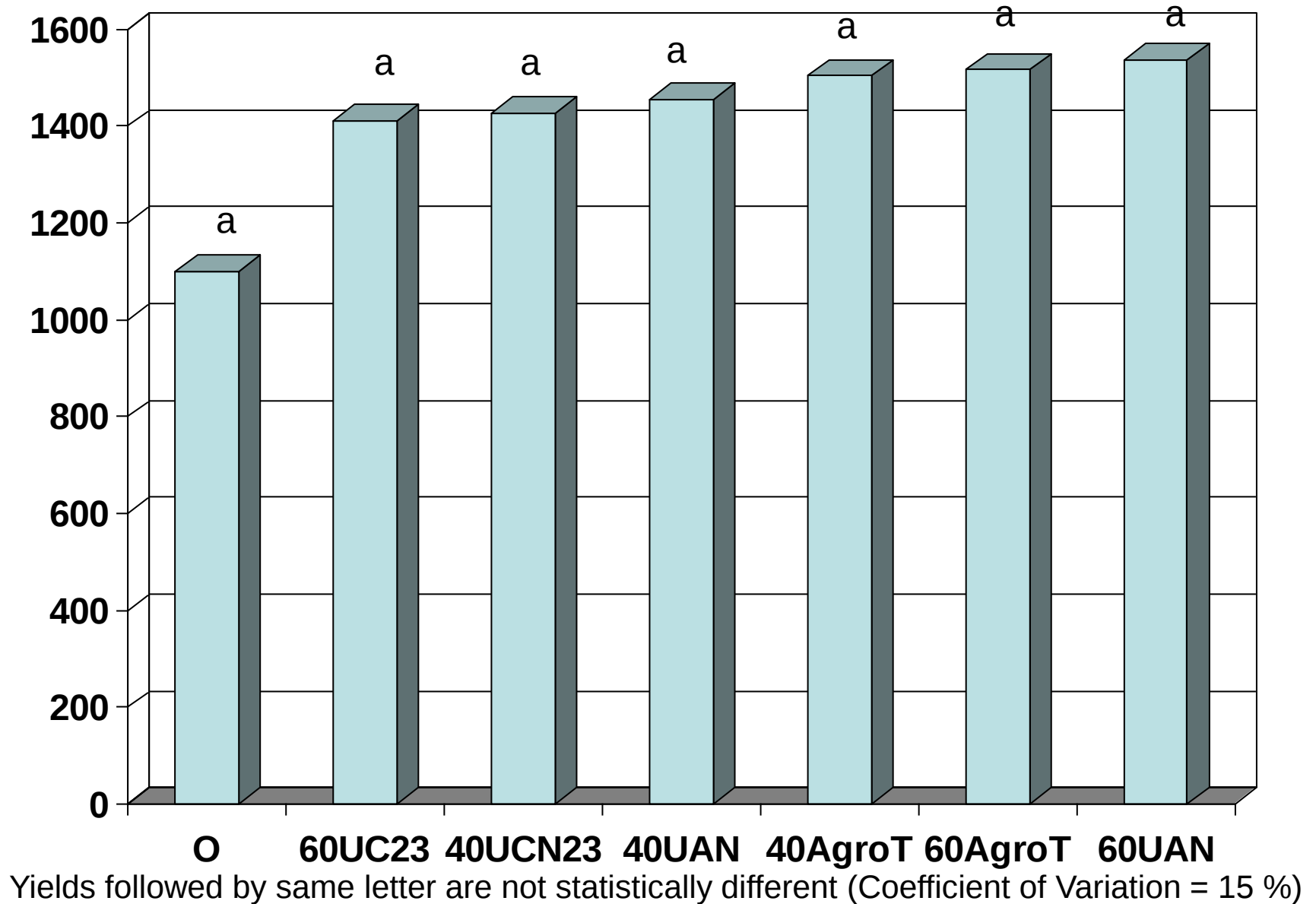


2006 Englehard/Attapulgate Clay
Sunbelt Expo

Yields (lb lint/a)

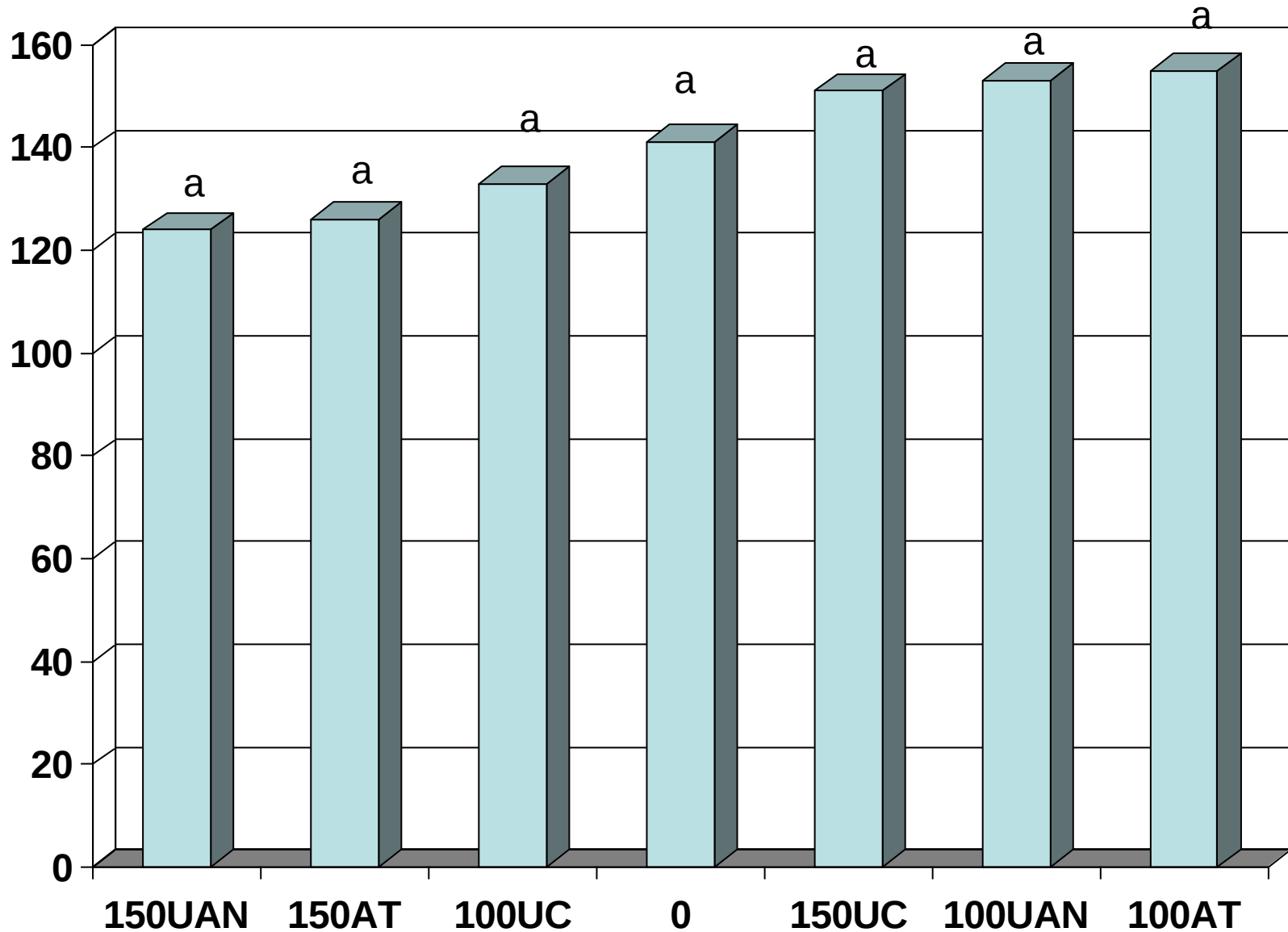


Cotton Yield (lb lint/a)



Lang Farm (Tifton) - 2009

Corn Yield (bu/a)



Yields followed by same letter are not statistically different (Coefficient of Variation = 26 %)

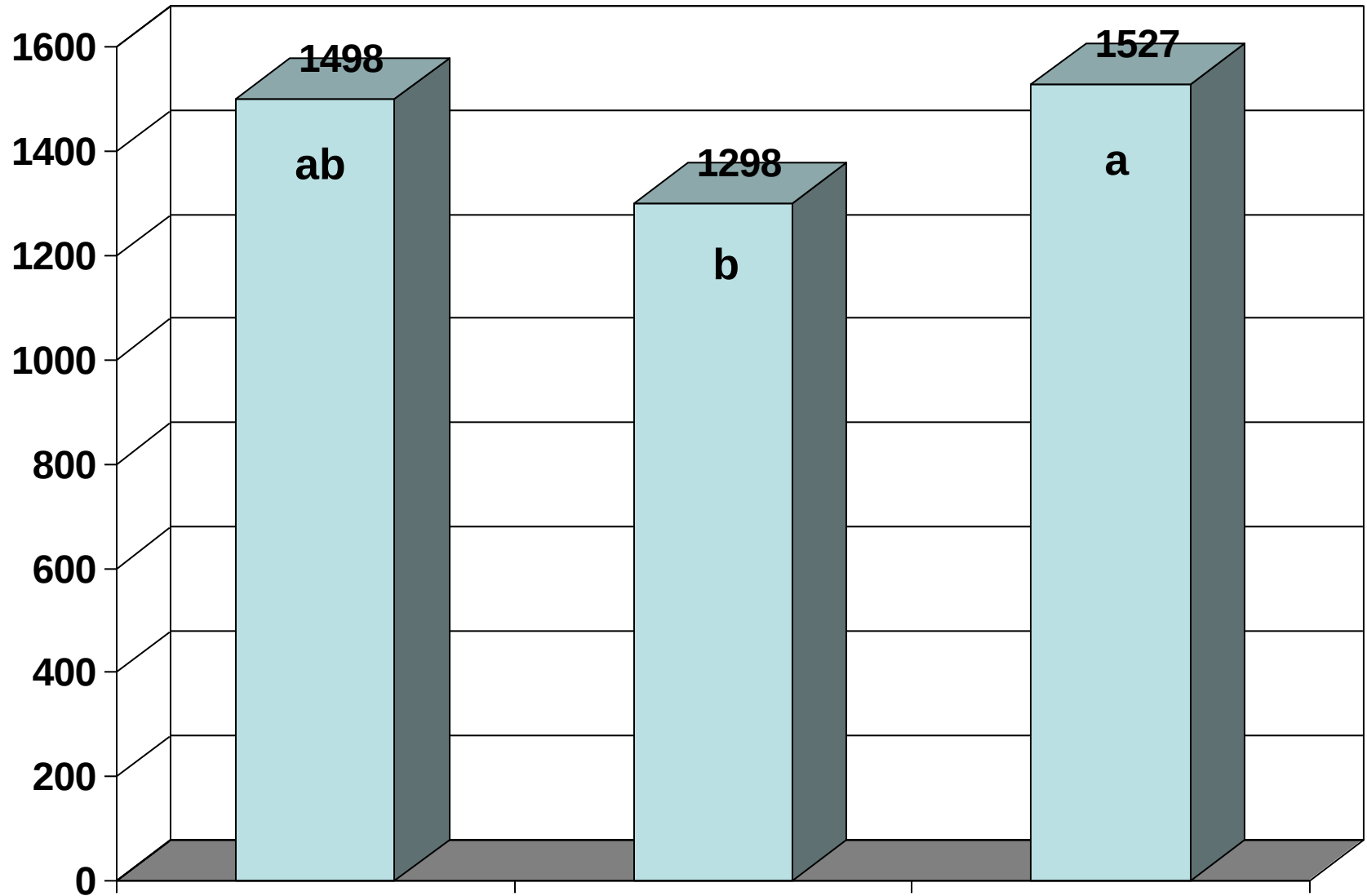
UGA Boron Recommendation

0.5 lb B/a



2006 UAP Foliar Mn
Sunbelt Expo

Yields (lb lint/a)



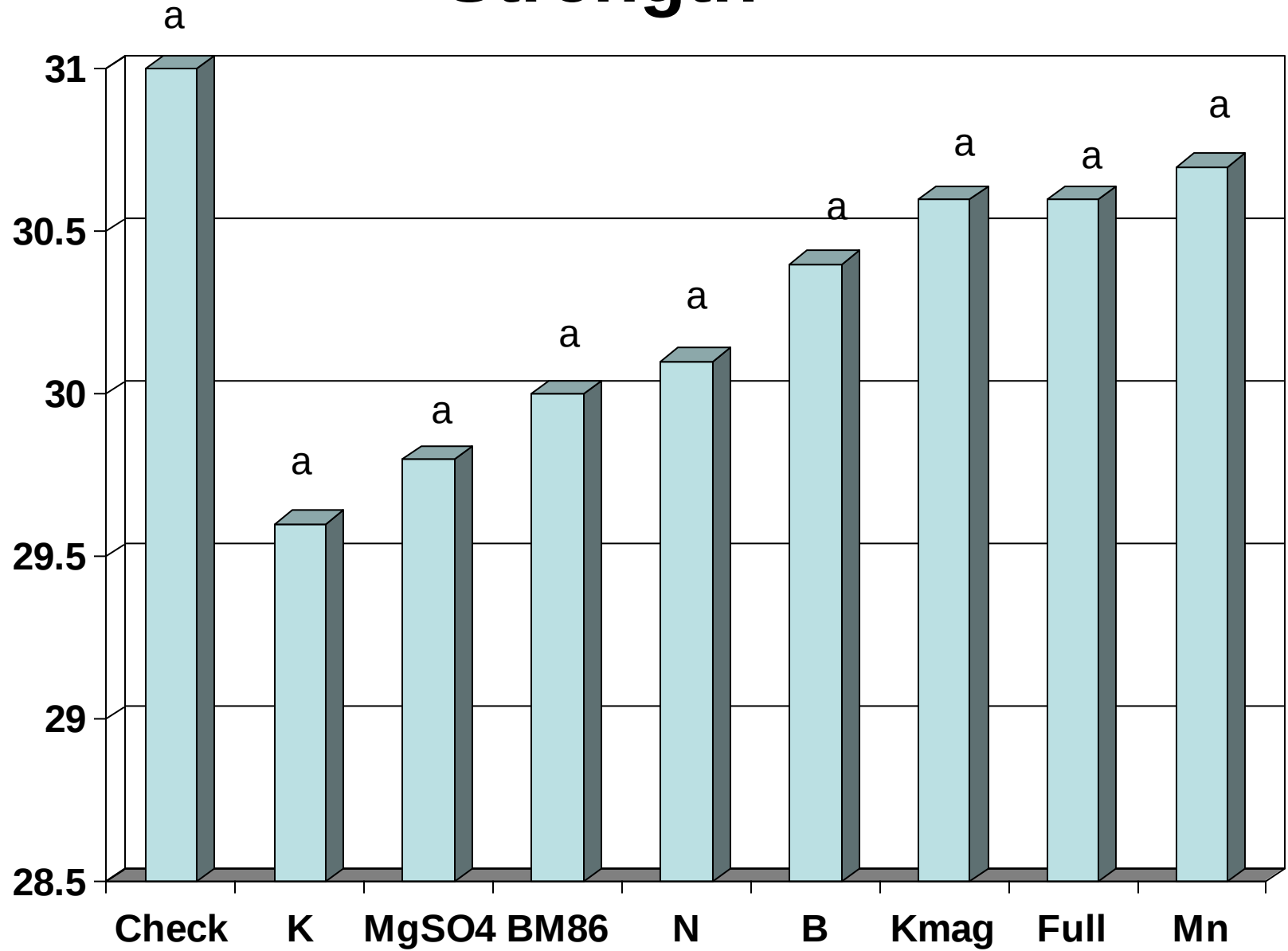
CV=9%

LI 625
1 qt/a

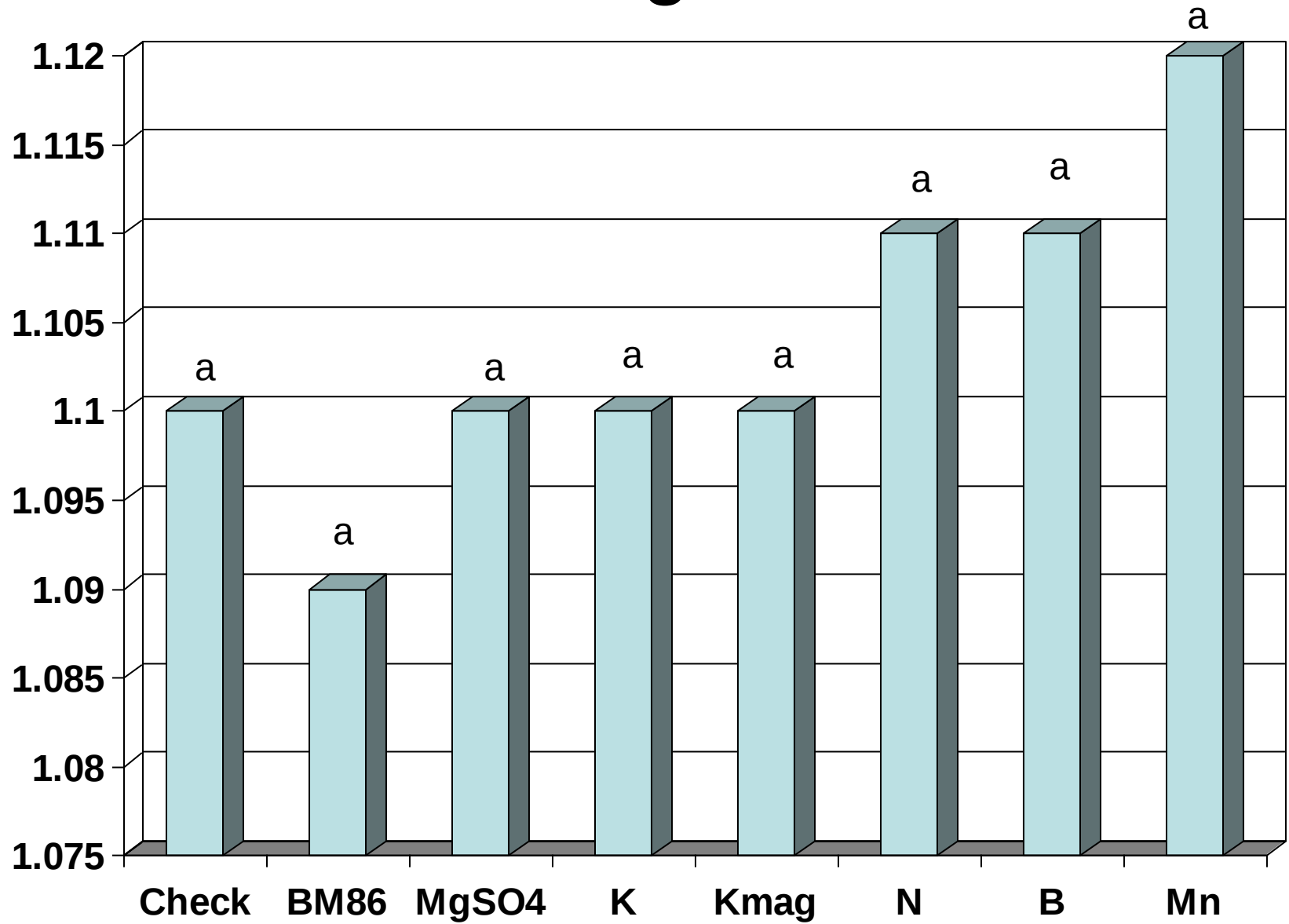
LI 625
2 qt/a

UTC

Strength



Length



Foliar Potassium on Soybeans ?

- Two years of Study at Sunbelt Expo
- No



Questions?

