

Double-Cropping Soybeans and Wheat Effectively



2008 LATMC Annual Meeting

LA Background

- 85% of Louisiana wheat acres are double-cropped with soybean
- In the last decade, Louisiana producers have harvested an average of 130K acres annually
- Soybeans account for 1/3 of all planted acres annually (around 820K)
- The economic impact of these two crops is about 150 million dollars annually
- 30% of LA's soybean crop is planted in an non-optimal timeframe



Midsouth Background

- 90% of Midsouth wheat acres are double-cropped with soybean
- Last year (2007) in AR, MS and LA there were 1.27 M acres



Wheat Stubble Management Options

- Leave stubble
- Burn stubble – if moisture is not limiting
- Burn and lightly disc stubble



Wheat Stubble Materials and Methods

- Cultivars
 - Soybeans - D&PL 5414
 - Wheat - Pioneer 26R61
- Agronomic Data
 - Norwood silt loam soil type
 - Standard weed control and fertilization recommendations were practiced

Location and Years

- Dean Lee Research Station and Extension Center, Alexandria, LA 2003 and 2004

Materials and Methods cont.

- Design (Randomized Complete Block)
 - Plot size 50 by 100ft
 - Each treatment was replicated 4 times

- Data Collected
 - Stand Count (per 3 feet /row)
 - Plant Height at V1 (inches)
 - Plant Height at R5 (inches)
 - Yield (Bu/A)

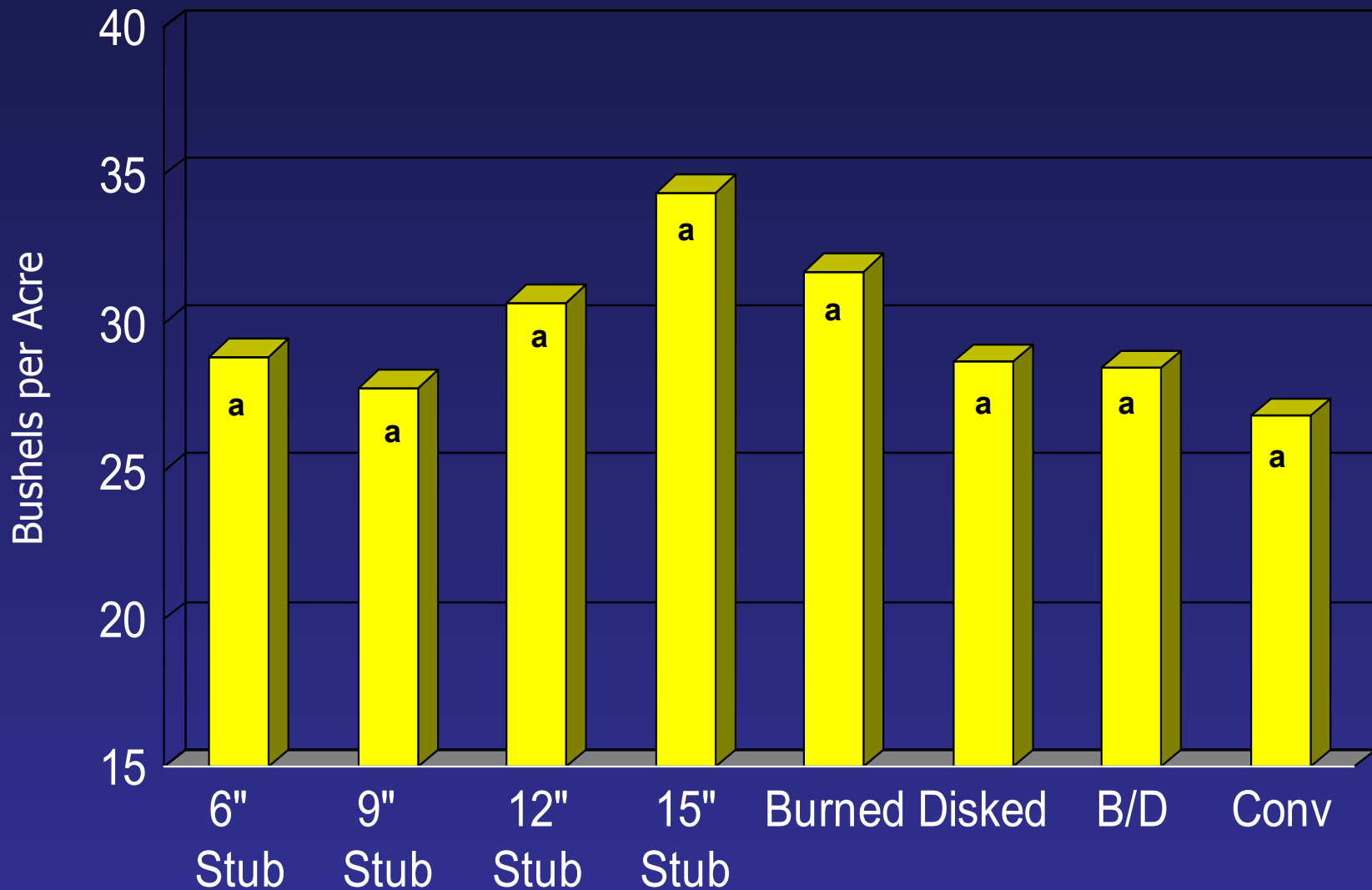
Materials and Methods cont.

- *Treatments*
 - 6 inch stubble
 - 9 inch stubble
 - 12 inch stubble
 - 15 inch stubble
 - Burned stubble
 - Disked stubble
 - Burned and disked stubble
 - Conventional tillage



*Rolling packer was used across all treatments

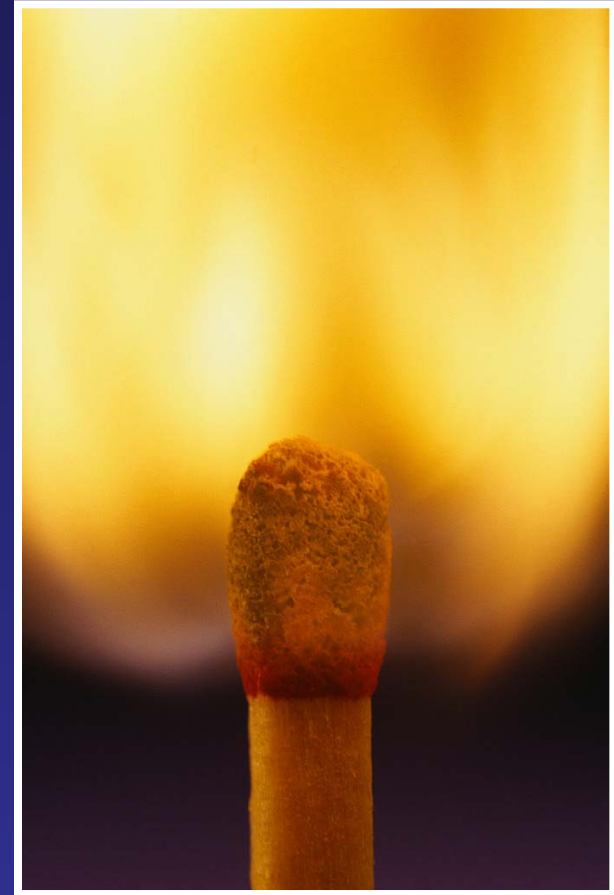
Stubble Management Research at Dean Lee Research Station, Alexandria, LA 2003 and 2004



The test method was Tukey adjusted post hoc test of differences.

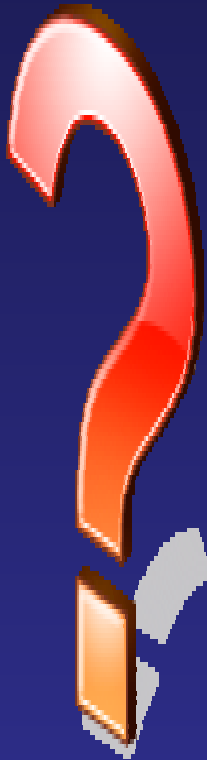
Conclusions

- No statistical differences among treatments in respect to yield – however, differences did exist among treatments
- In the two years of the study, the 15 inch stubble and burned treatments yielded highest
- Results indicate that soybean yields are maximized when stubble height is left one foot or higher or burned



Maturity Group Selection

- MG3
- MG4
- MG5



MG Materials and Methods

- Two independent studies
- Cultivars
 - Wheat Pioneer 26R61
 - Soybeans
 - Pioneer MG 3, 4 and 5
 - D&PL MG 3, 4 and 5
- Agronomic Data
 - Norwood silt loam soil type
 - Standard weed control and fertilization practices
 - Planting date June 2, 2005 and May 16, 2006 with 15" spacing

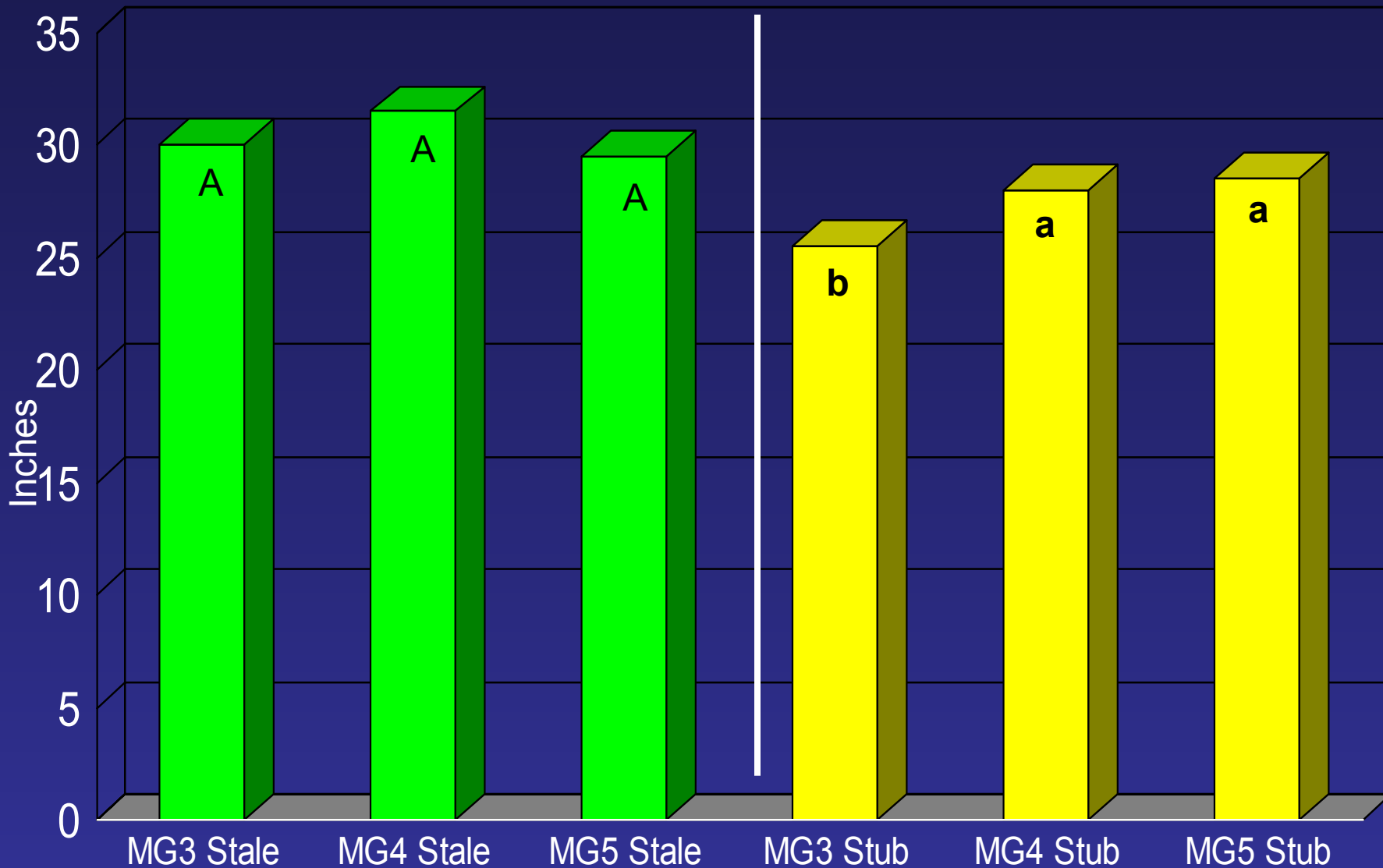


MG Materials and Methods cont.

- Location and Years
 - Dean Lee Research and Extension Center, Alexandria, LA 2005 and 2006
- Design
 - RCB, Plot size 50 by 100ft
 - Replicated 4 times
- Data Collected
 - Days to R1 and R5
 - Plant Height at Harvest
 - Yield (Bushels/acre)



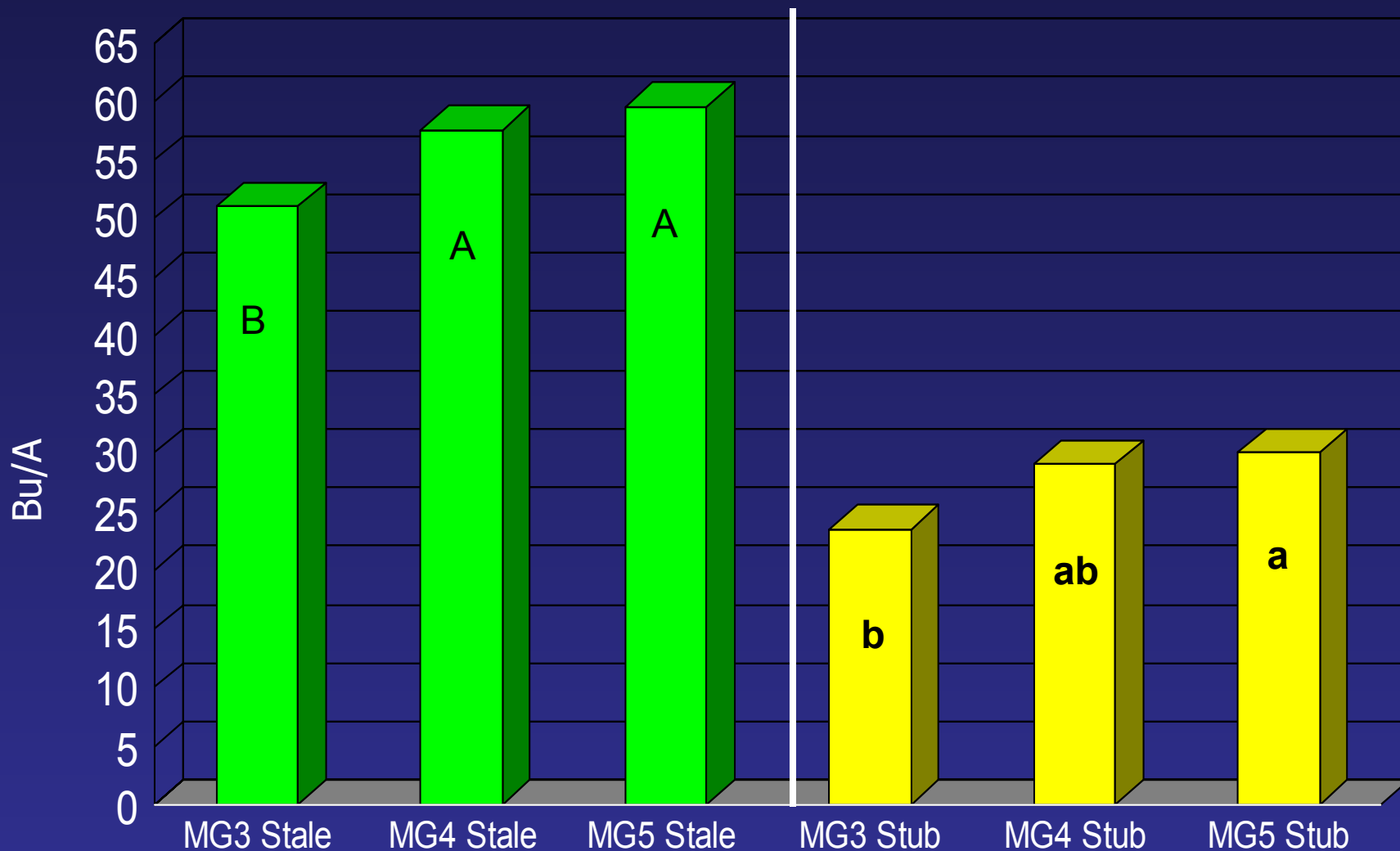
2005 and 06' Plant Height at Harvest



The test method was Tukey adjusted post hoc test of differences.

Means are separated within independent tillage systems.

2005 and 06' Yield – LSU AgCenter



The test method was Tukey adjusted post hoc test of differences.

Means are separated within independent tillage systems.

"Agronomic" Production Questions Recap

Should I expect a yield drag?

When should I plant beans behind wheat?

Should I bump my plant population?

Should I use treated seed?

What row spacing is best?

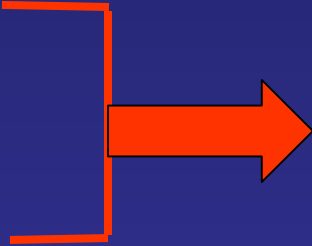
When should I use inoculant?



What is the last date to plant?

What else should you worry about?

Soybean Stresses

- Temperature/Heat
 - Drought/Water logging
 - Mineral Deficiency
 - Mineral Toxicity
 - Salinity
 - Weeds
 - Insects
 - Diseases
- General Stress
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- ```
graph LR; A[Weeds] --- B[]; B --- C[Insects]; C --- D[Diseases]; D --- E[General Stress];
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# Soybean Responses to Stress

- Wilting
- Smaller leaves
- Slower or ceasing growth and flowering
- Abortion of flowers
- Abortion of pods
- Node stacking
- Sticking leaves
- Green bean syndrome
- Green stem/brown pod syndrome



# Questions

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