
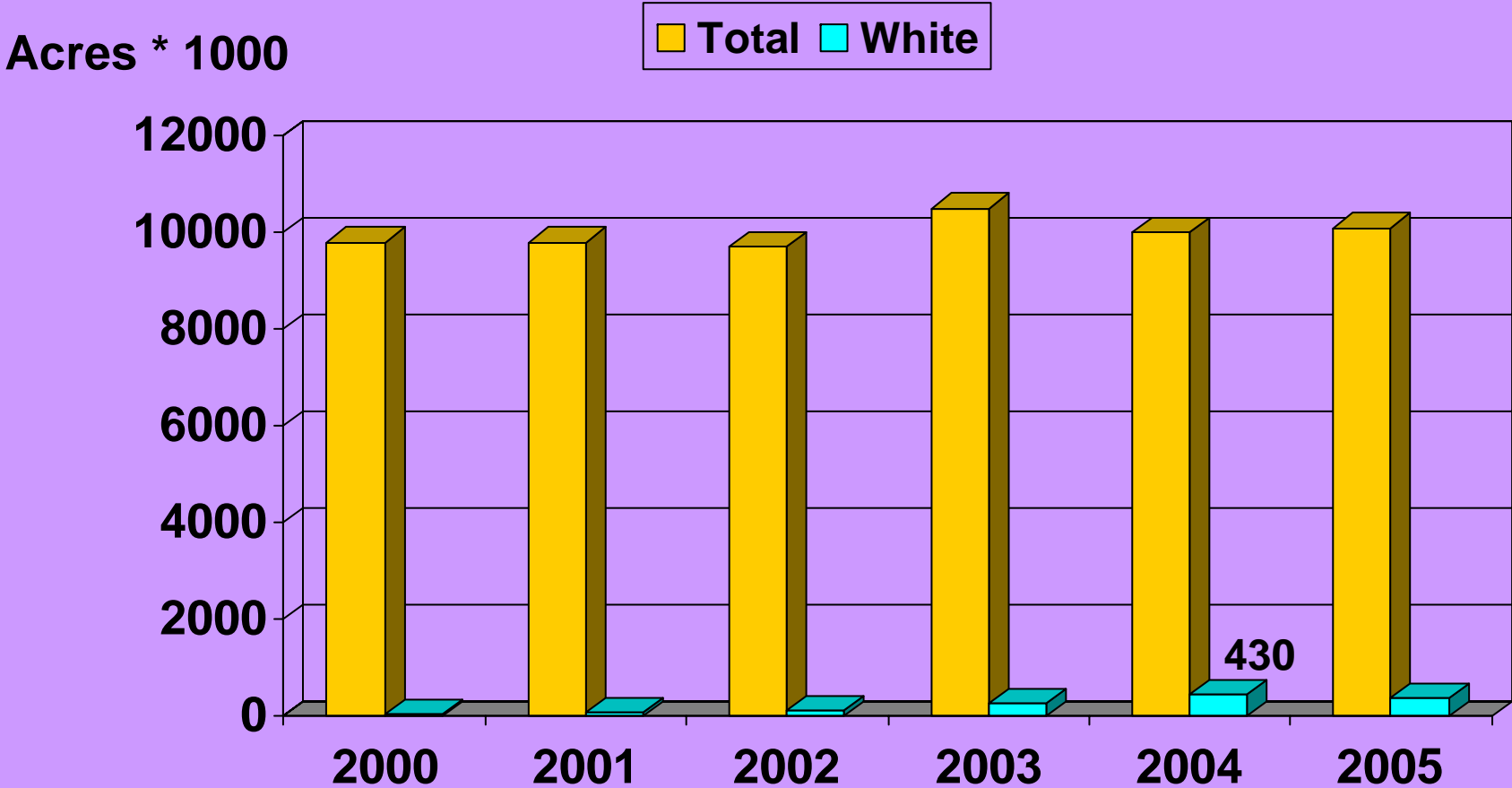


Effect of Grazing on Red and White Hard Winter Wheat Variety Yield and Quality



**C.R. Thompson, R.L. Hale, A.J. Schlegel, and T.J. Dumler
Kansas State University**

Kansas Wheat Acres Planted



Three to six million acres of wheat may be grazed each year, Shroyer et al 1993.

Introduction

- **Planted white wheat acres in Kansas has been increasing very slowly**
- **Producers concerns include:**
 - **Yield potential of white wheat varieties**
 - **Forage potential of white wheat varieties**
 - **Effect of grazing on grain production of white wheat**
 - **Disease tolerance of white wheat (strip rust)**
 - **Germination of the seed in the head**
- **This experiment was established to evaluate 6 common HRWW and 6 common HWWW varieties for their yield potential in a grazed and not grazed system.**

Methods

- **Burchett, Lakin, NuFrontier, NuHills, NuHorizon, and Trego white wheat and 2137, Jagalene, Jagger, OK 101, Stanton, and Thunderbolt red wheat were planted in Clark (rain fed) and Stanton (limited irrigation) Counties on 16 September 2003 and 16 October 2004, respectively.**
- **Seeding rates were 90 lbs at Clark Co and 120 lbs/a at Stanton Co. One hundred pounds of 11-52-0 was applied with the seed at planting.**

Methods

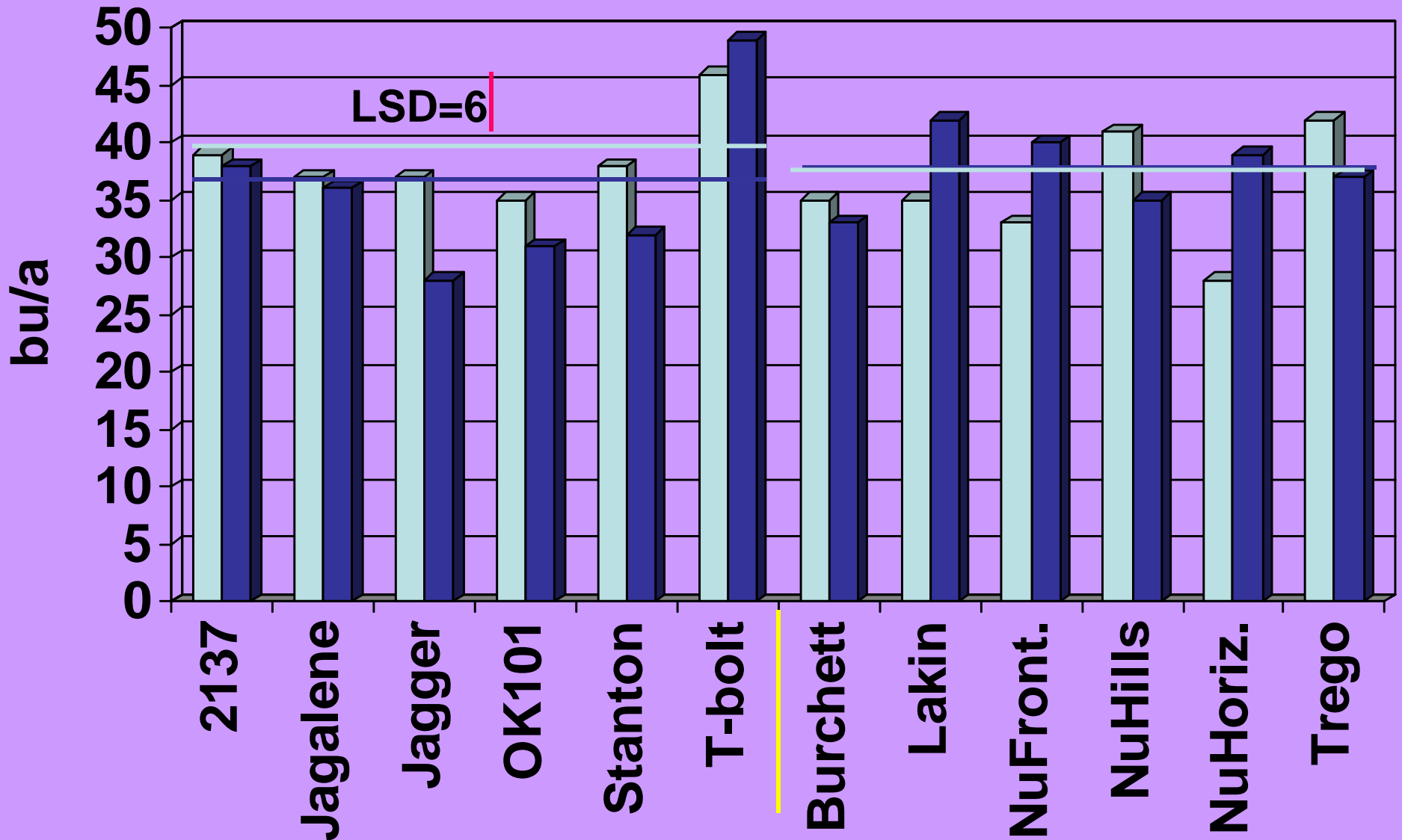
- The experiment was designed as a split plot with main plots being grazed and not grazed and subplots being wheat variety. All treatments were replicated 4 times.
- Cattle grazed on the 'grazed plots' after wheat was well rooted to first hollow stem.
- 30 lbs of N was broadcast applied to grazed wheat during March following livestock removal.
- December, March, and May forage clippings were taken. (data provided in poster by Hale)
- Grain was harvested during June of 2004 and 2005.

Results

- **Year and location interactions for yield were significant, thus individual experiments will be discussed separately.**
- **Red vs. white were not compared statistically. However; all data averaged over graze, location, and years: Red = 40 bu/a and White = 40 bu/a.**

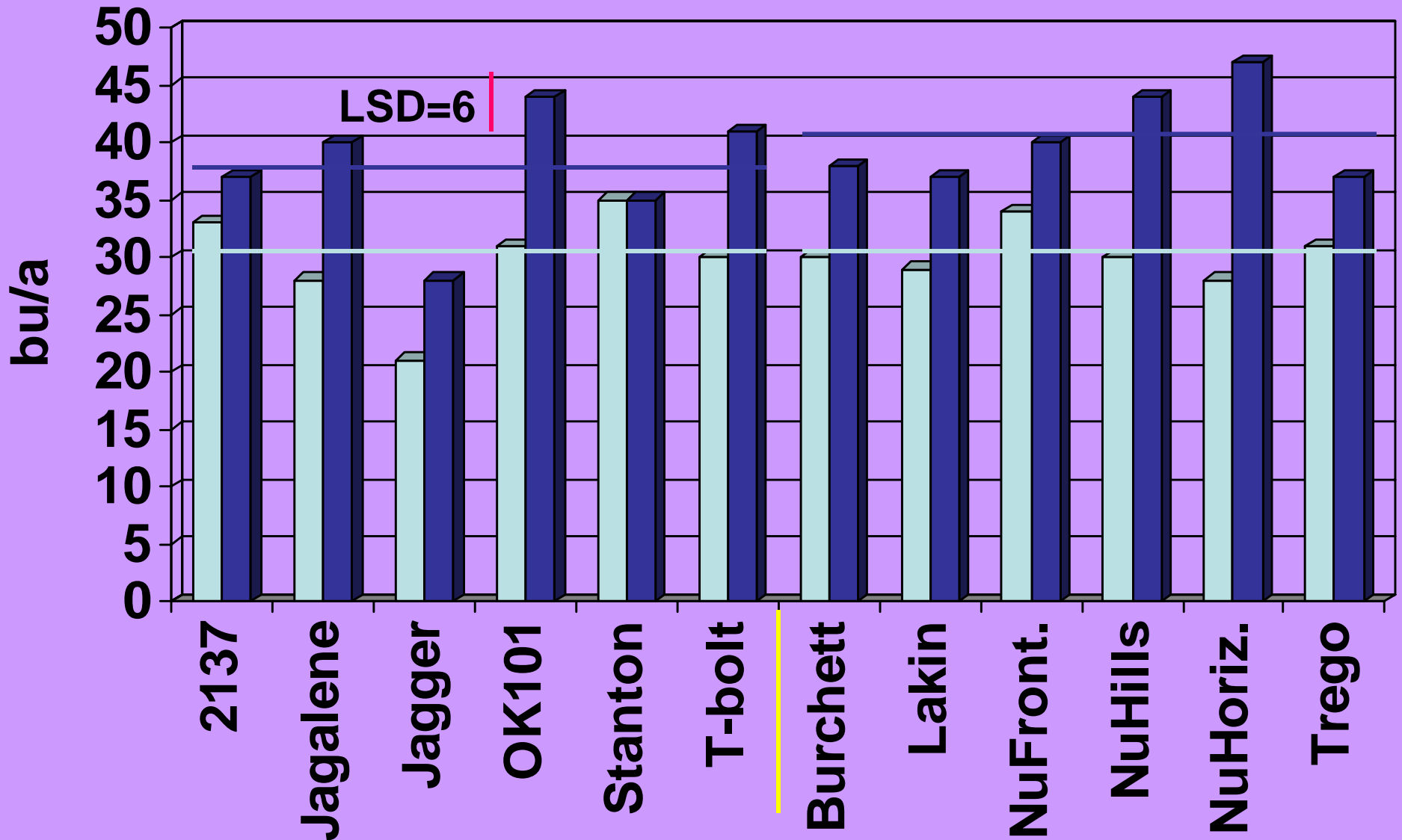
Grain Yields Clark Co. 2004

■ Grazed ■ Not Grazed



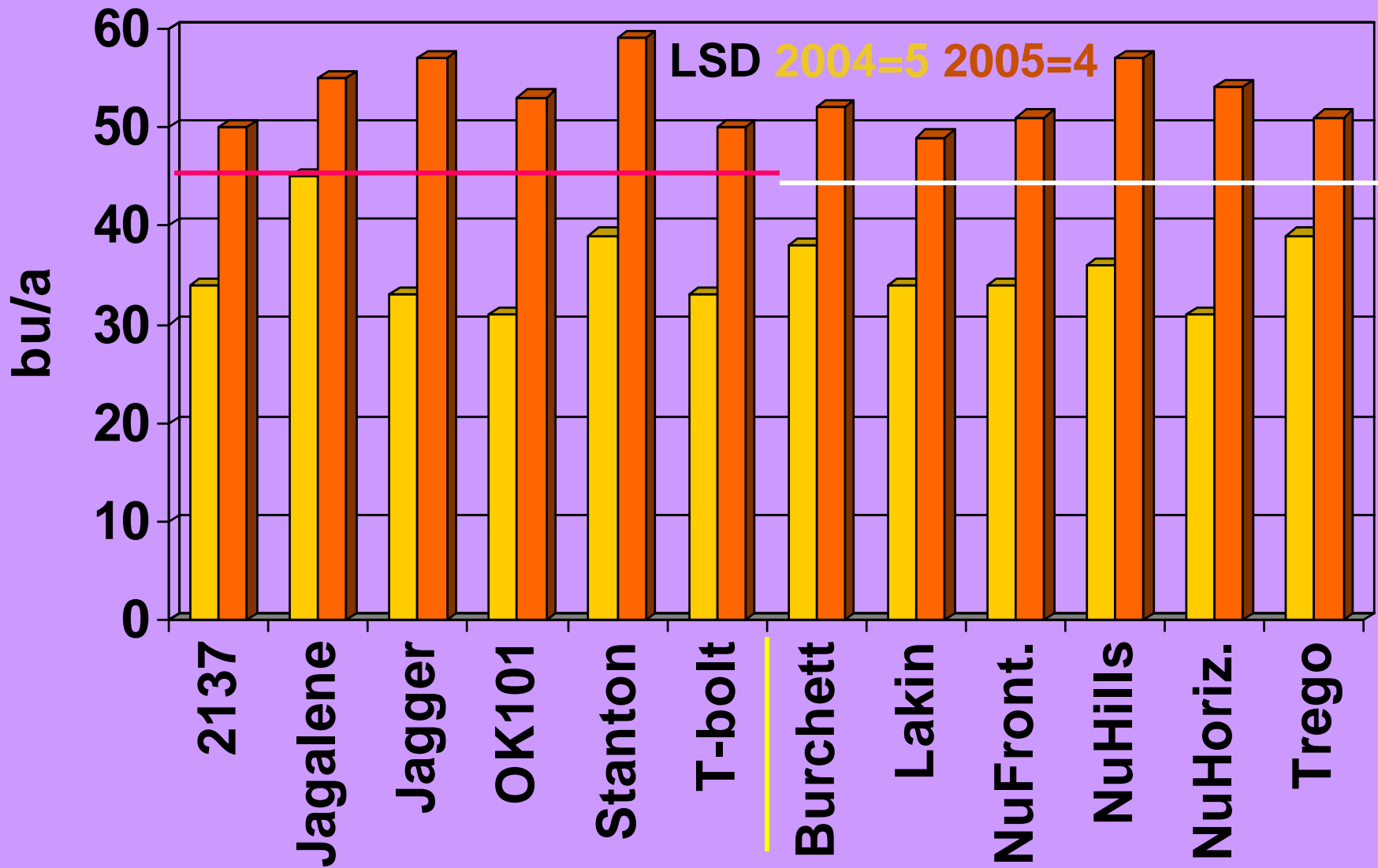
Grain Yields Clark Co. 2005

■ Grazed ■ Not Grazed

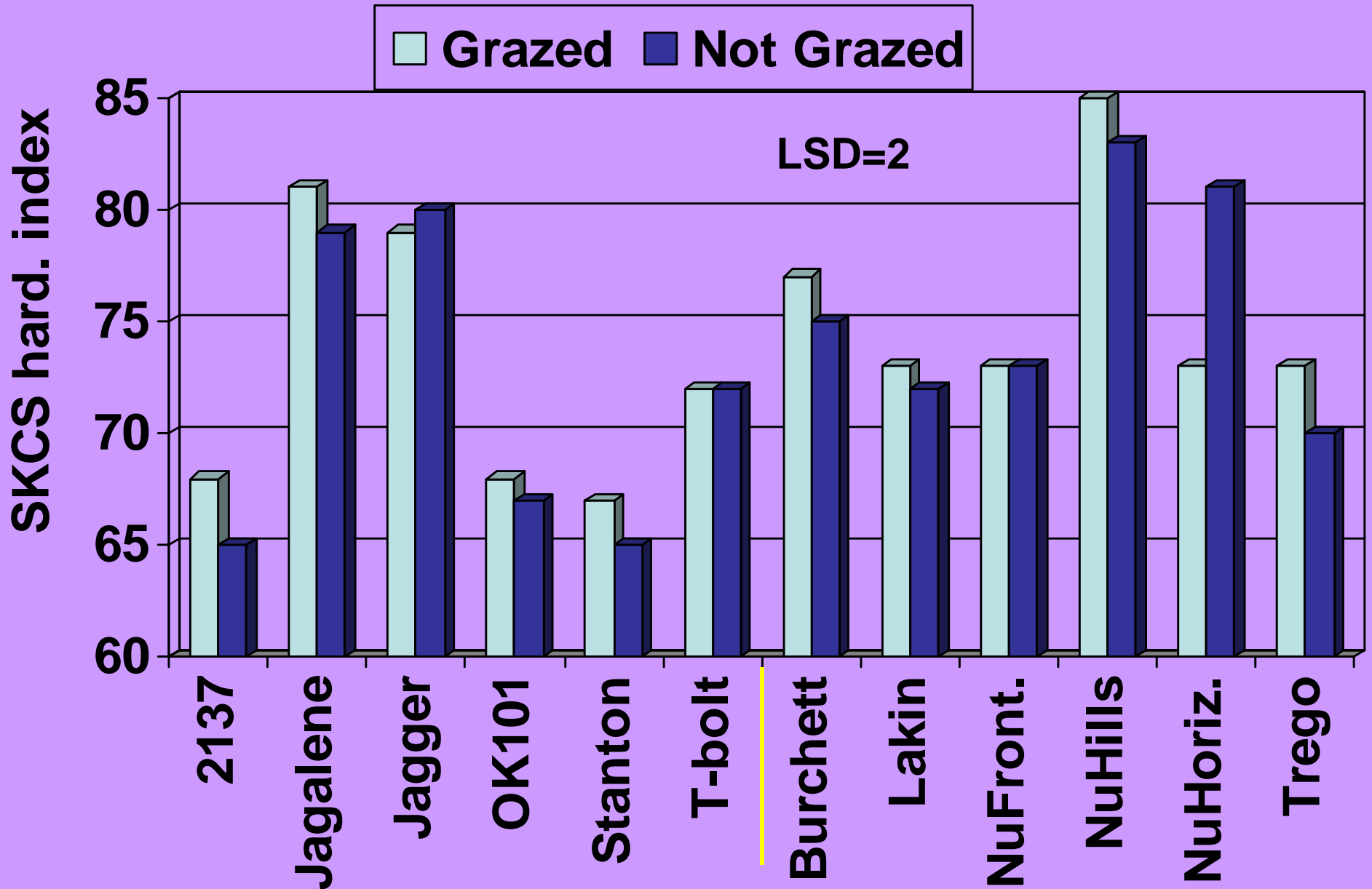


Grain Yields Stanton Co.

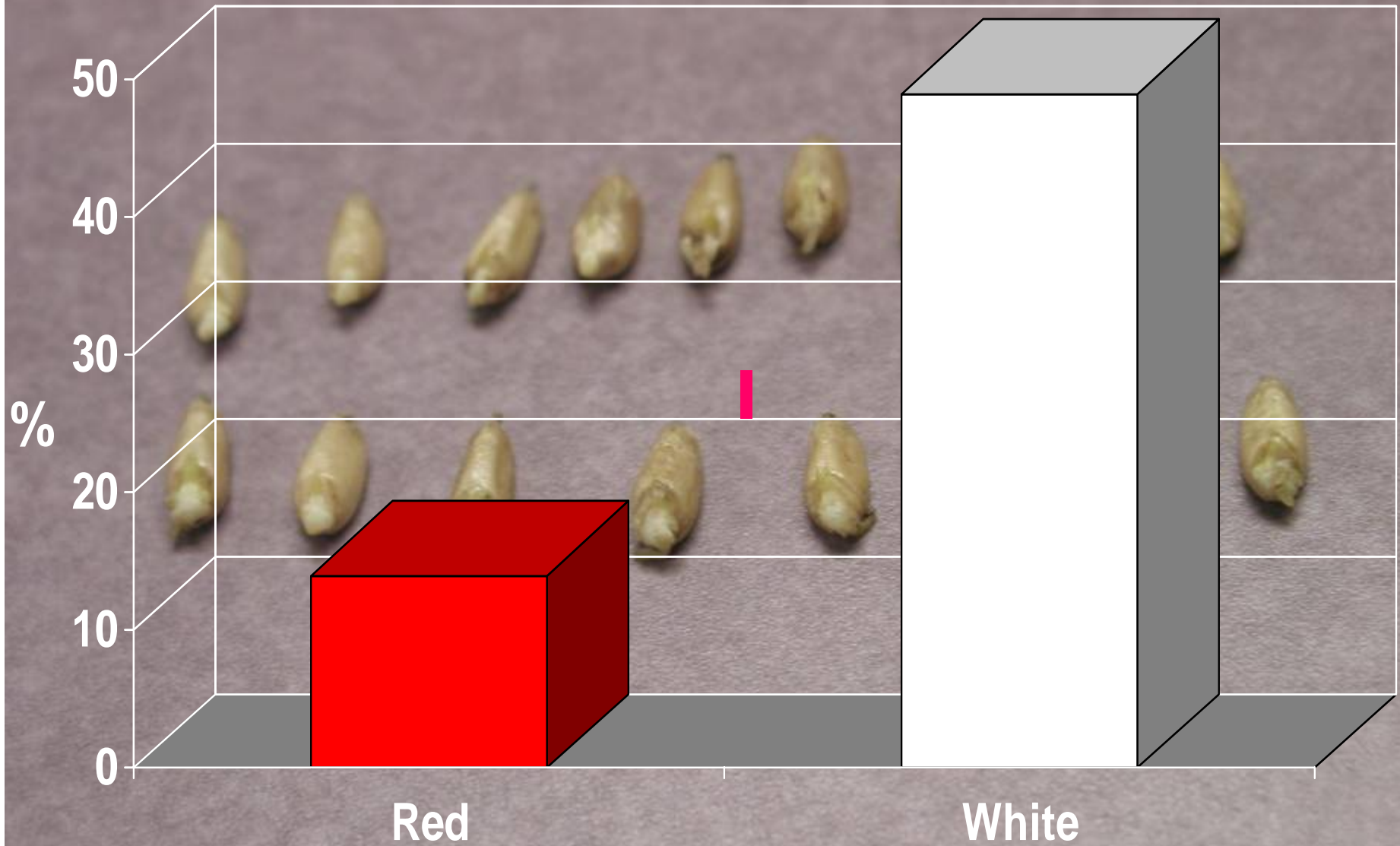
2004 2005



Kernel Hardness Clark Co. 2004



Sprout Damage 2004 Stanton Co.



Results

- **Crude protein**
 - Clark 2004 Grazed = 15.1 Not grazed = 15.8
 - Variety significant all years, all locations.
- **Test weight**
 - Clark 2004 Var*Grazing significant
 - Variety significant in ST both years and CA 2005
 - Grazing significant in 2005 both locations
 - Grazed 53.2 (CA) & 58.3 (ST), Not grazed 52.7 (CA) & 57.6 (ST)

Summary

- **NuHorizon white wheat grain production was adversely affected by grazing more than the other white wheat varieties tested**
- **Good management can minimize the effect of grazing on grain production for white and red wheat**
- **Producers can use white wheat varieties effectively in a dual purpose program with similar effectiveness to red wheat varieties**

Questions?

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K-State Research and Extension

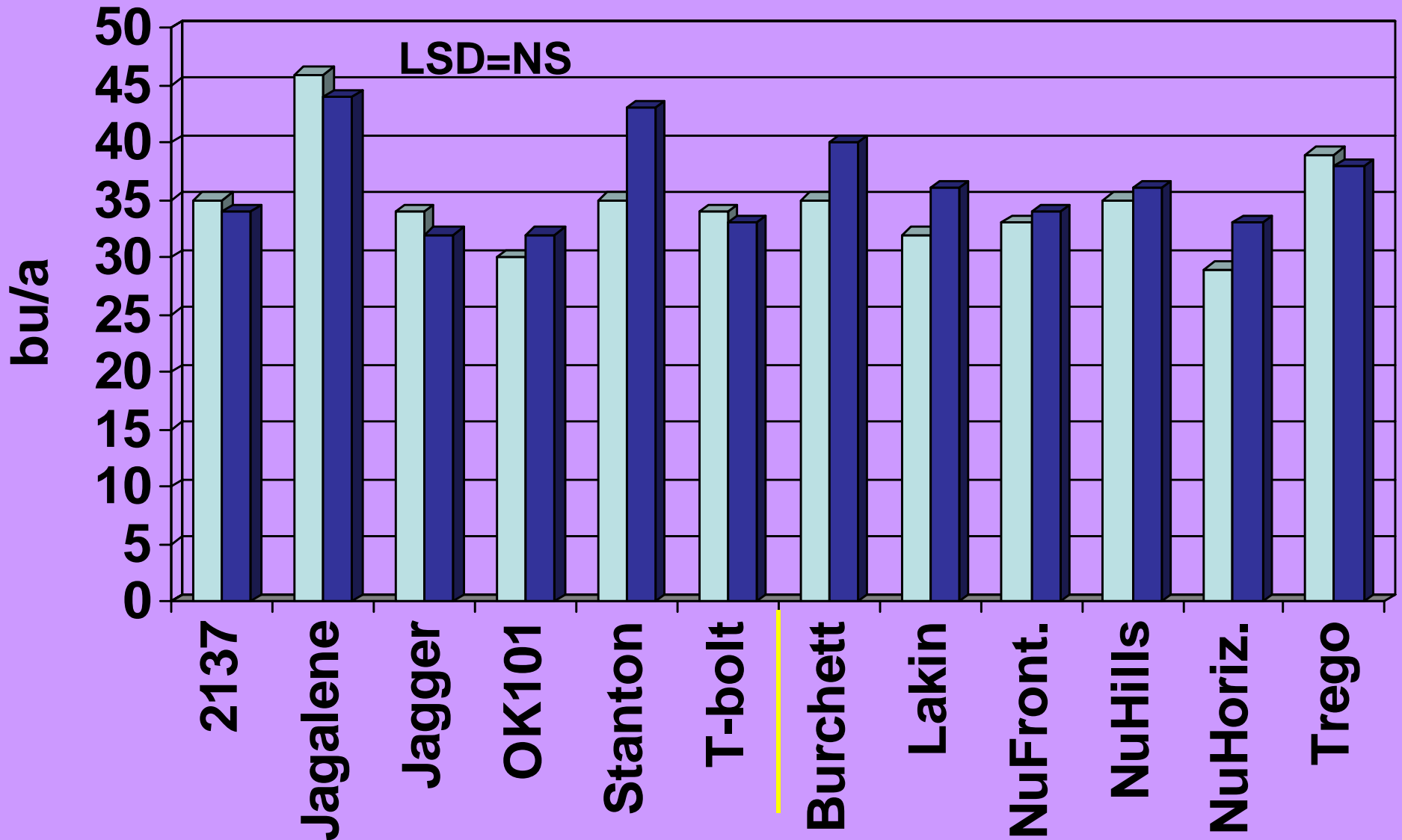
*Knowledge
for LIFE*



Thanks!

Grain Yields Stanton Co. 2004

■ Grazed ■ Not Grazed



Grain Yields Stanton Co. 2005

■ Grazed ■ Not Grazed

