

# Missouri Cover Crop Report

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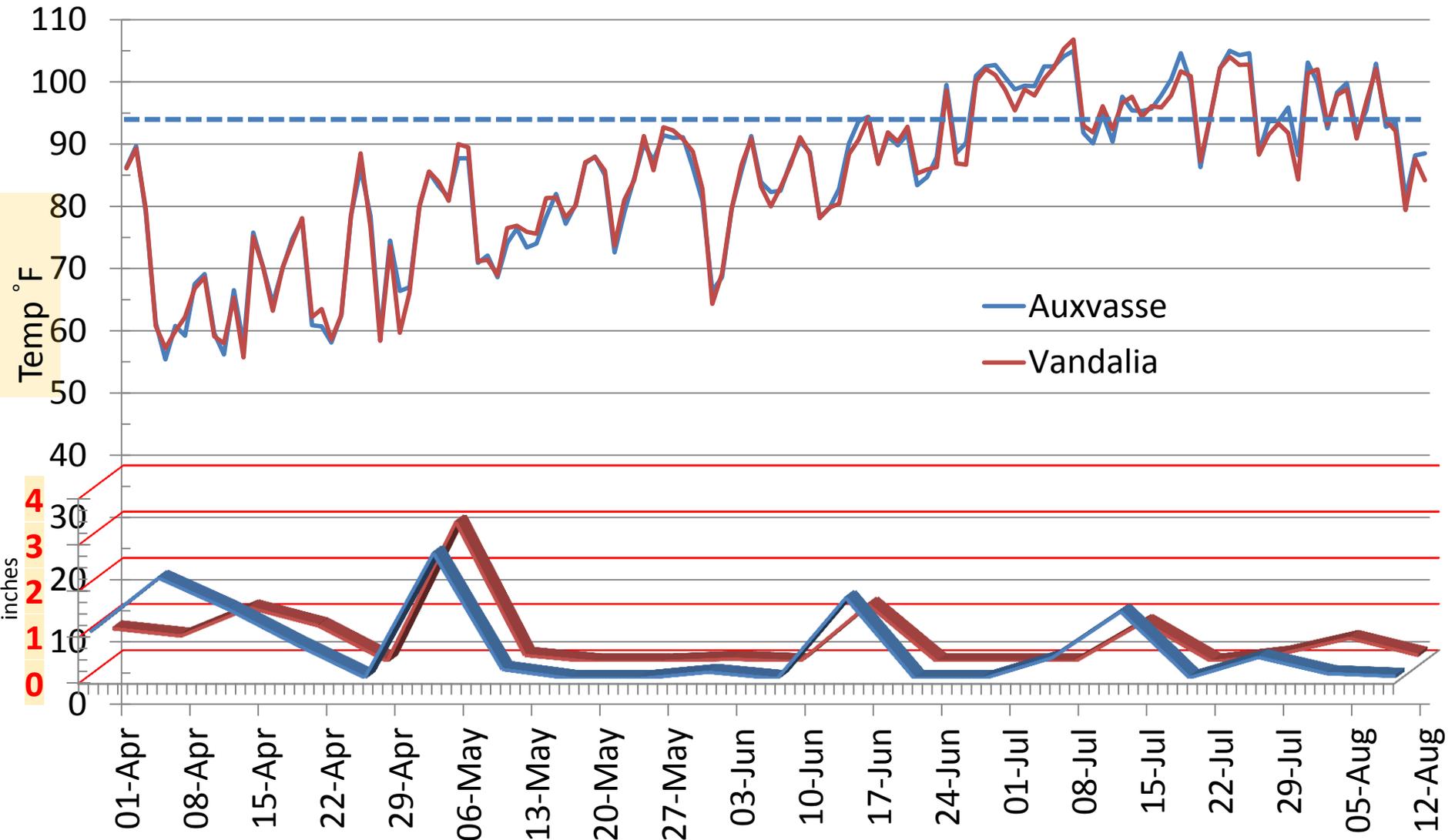
Rich Hoormann

Charles Ellis

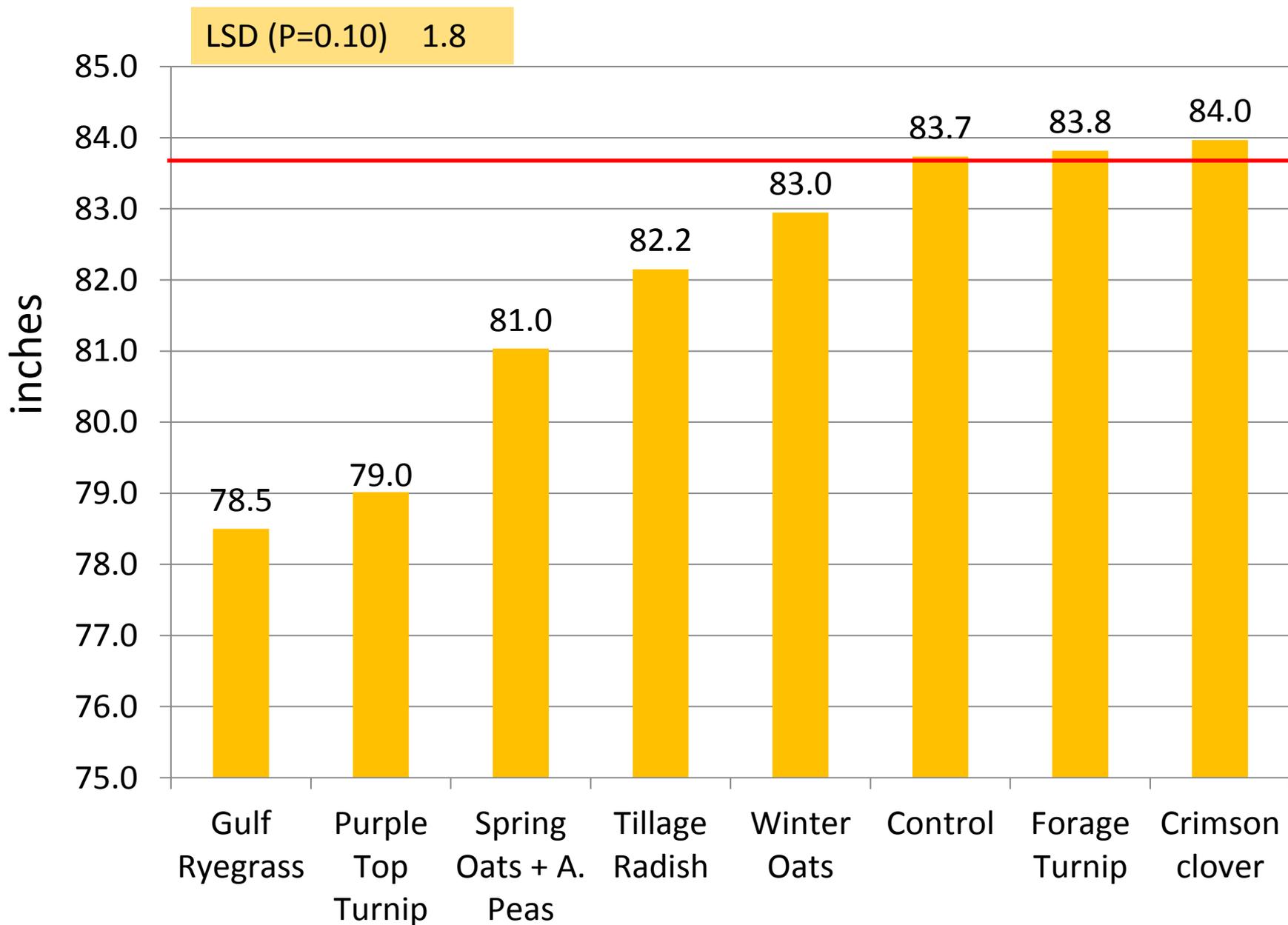
Region Specialist

March 1, 2013

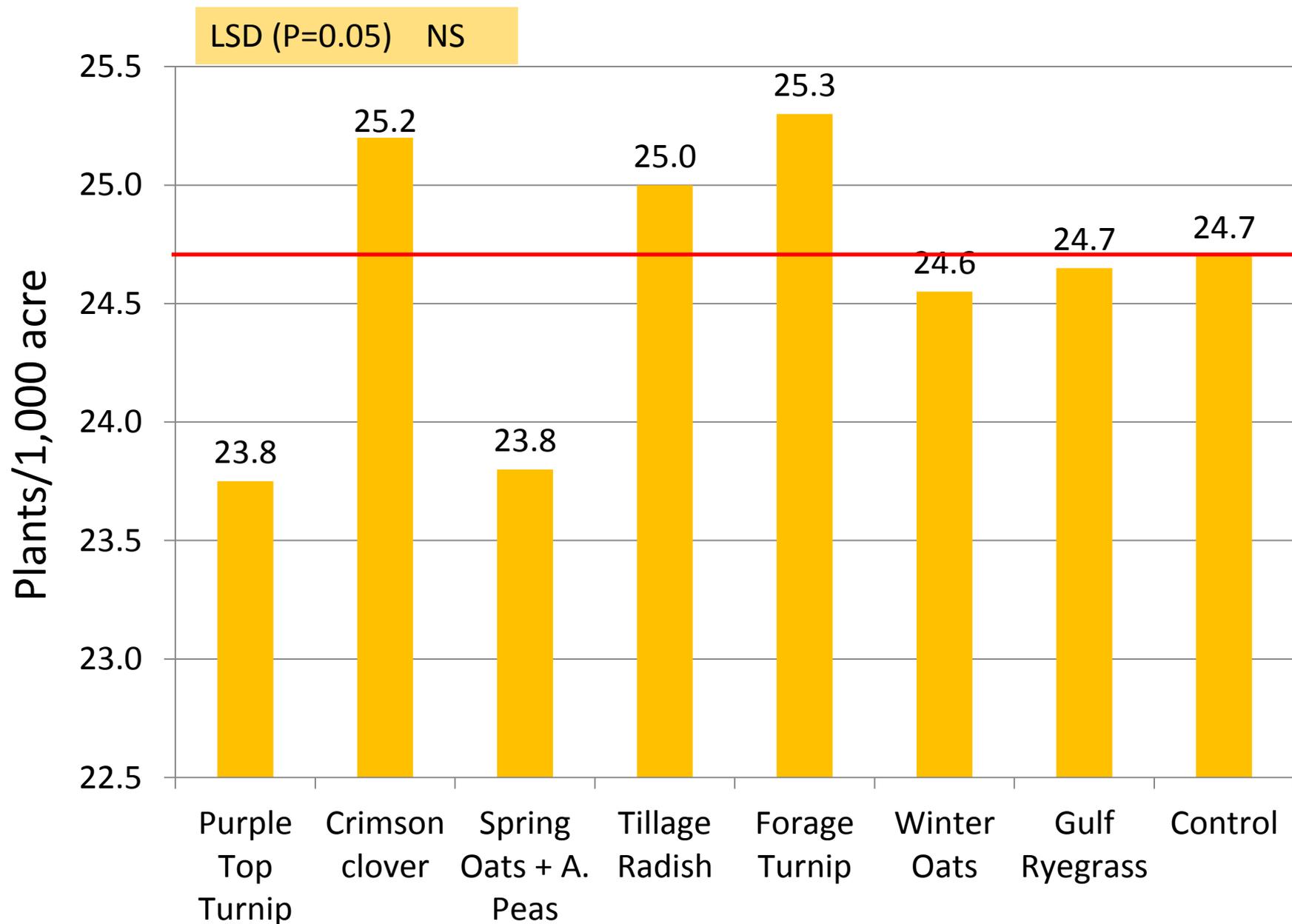
# MUEXT Automated Weather Station 2012 Max-temp April 01—August 12



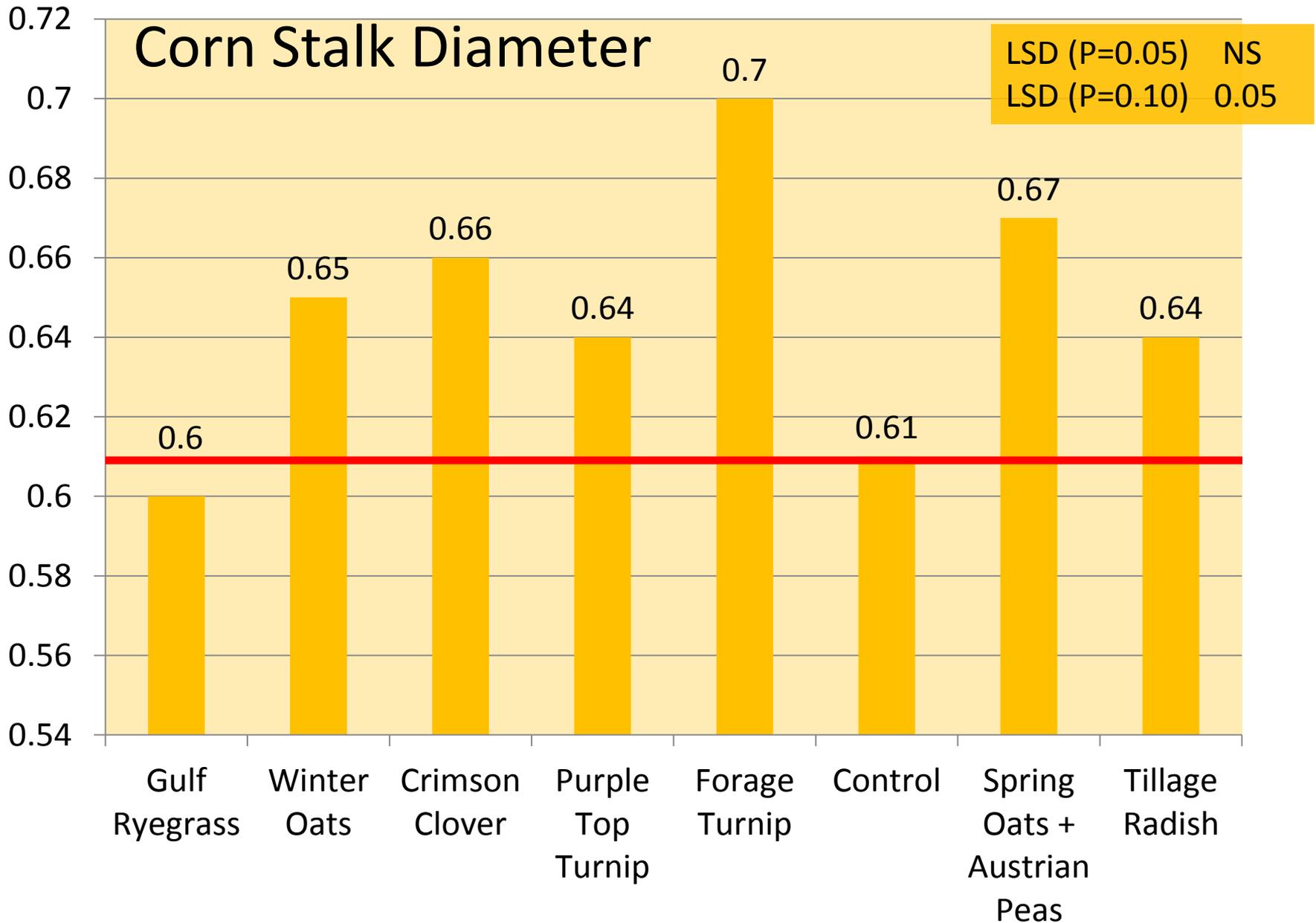
# 2012 Willott CC Plot Corn Stalk Height



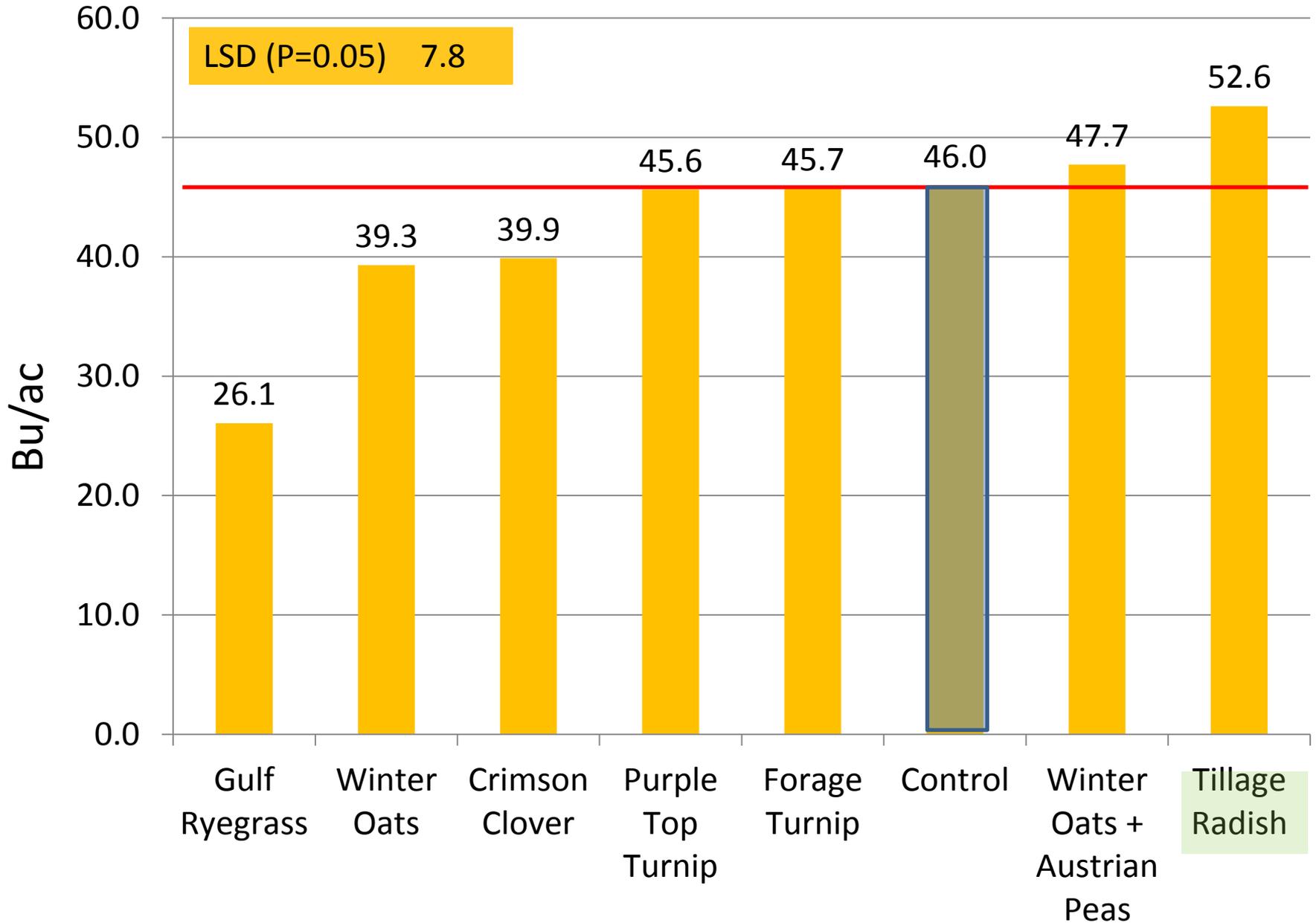
# 2012 Willott CC Plot Corn Harvest Population



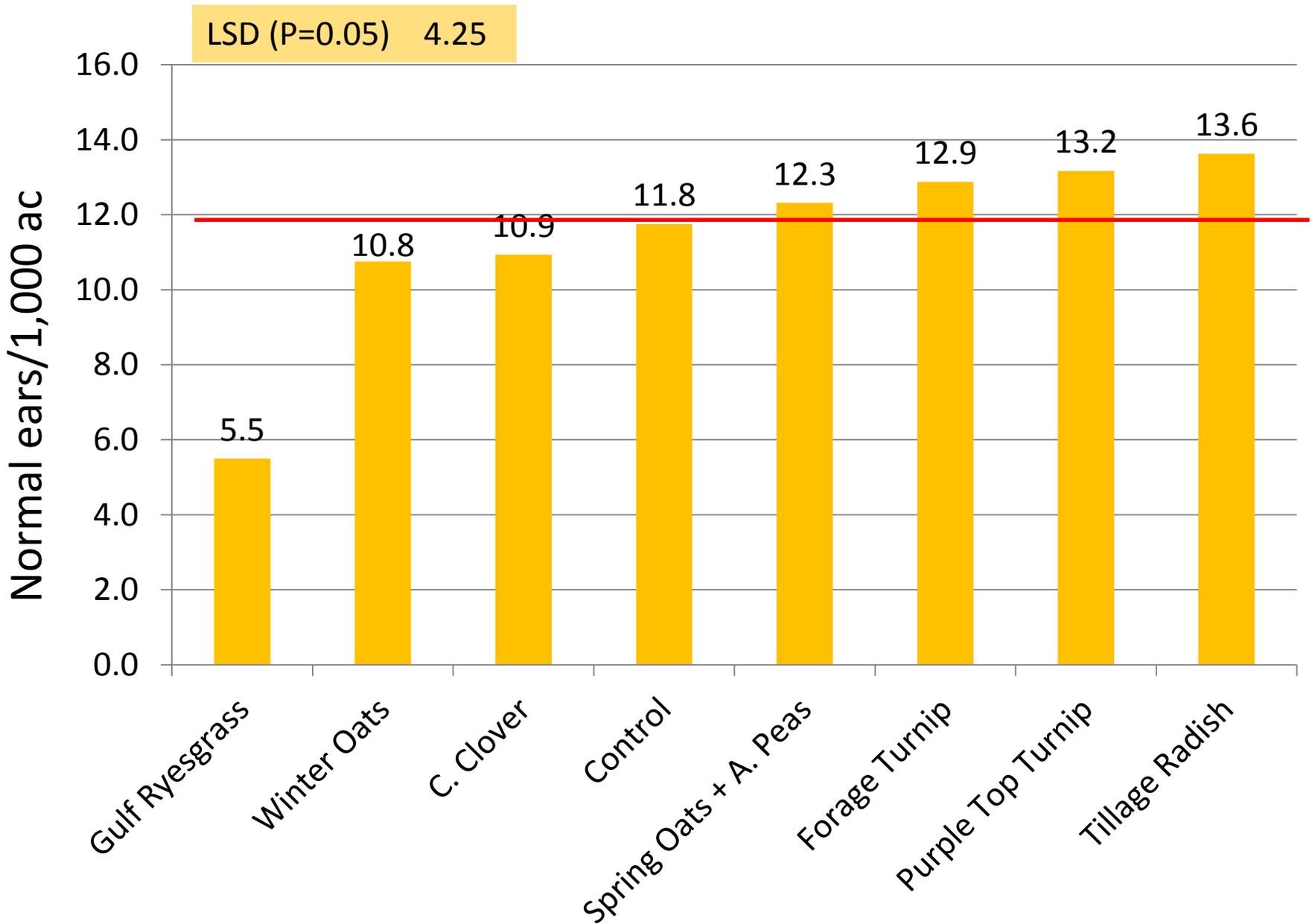
# Willott Farms CC Plots-North Plot



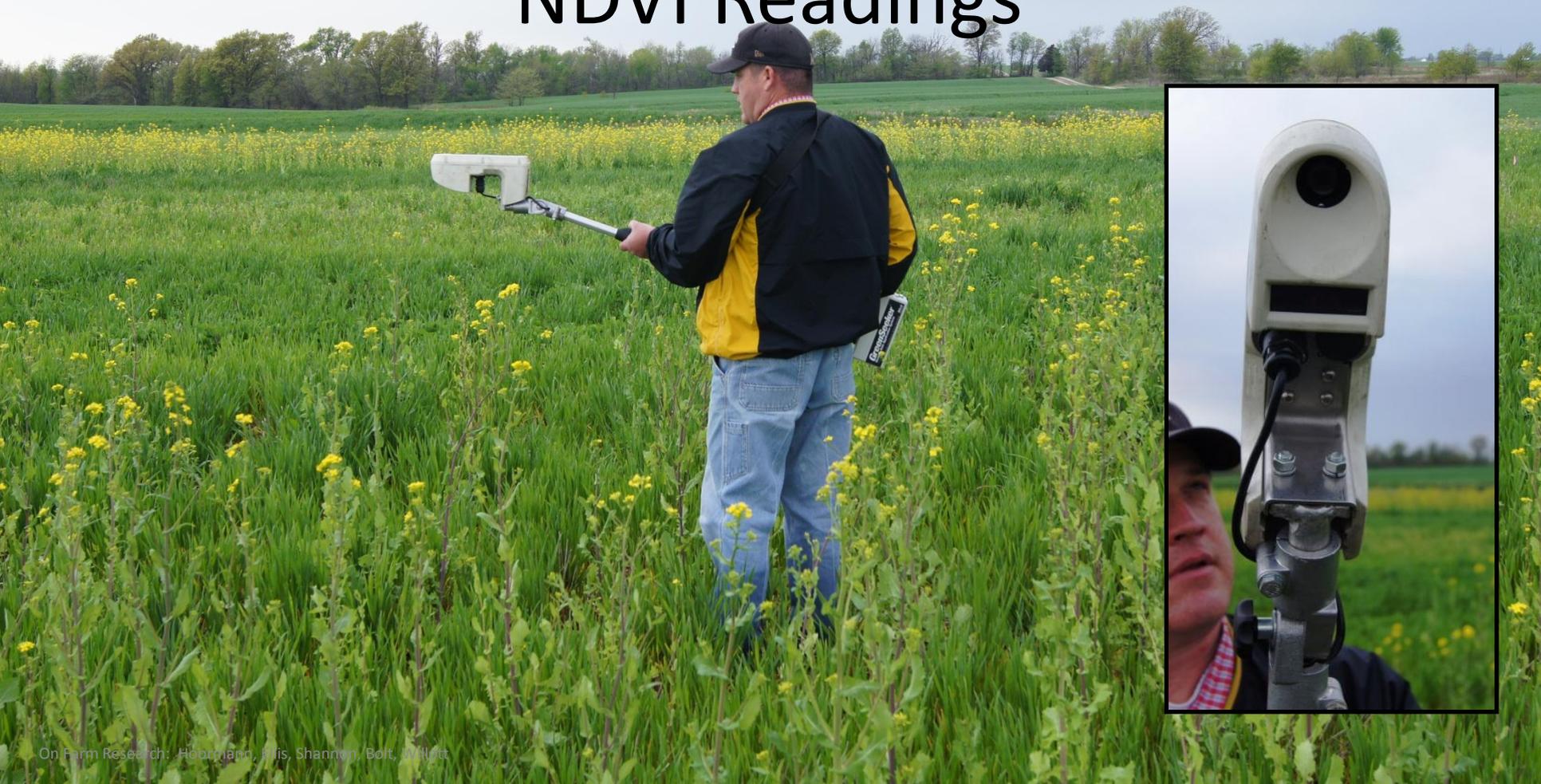
# 2012 Willott CC Plots Corn Yield



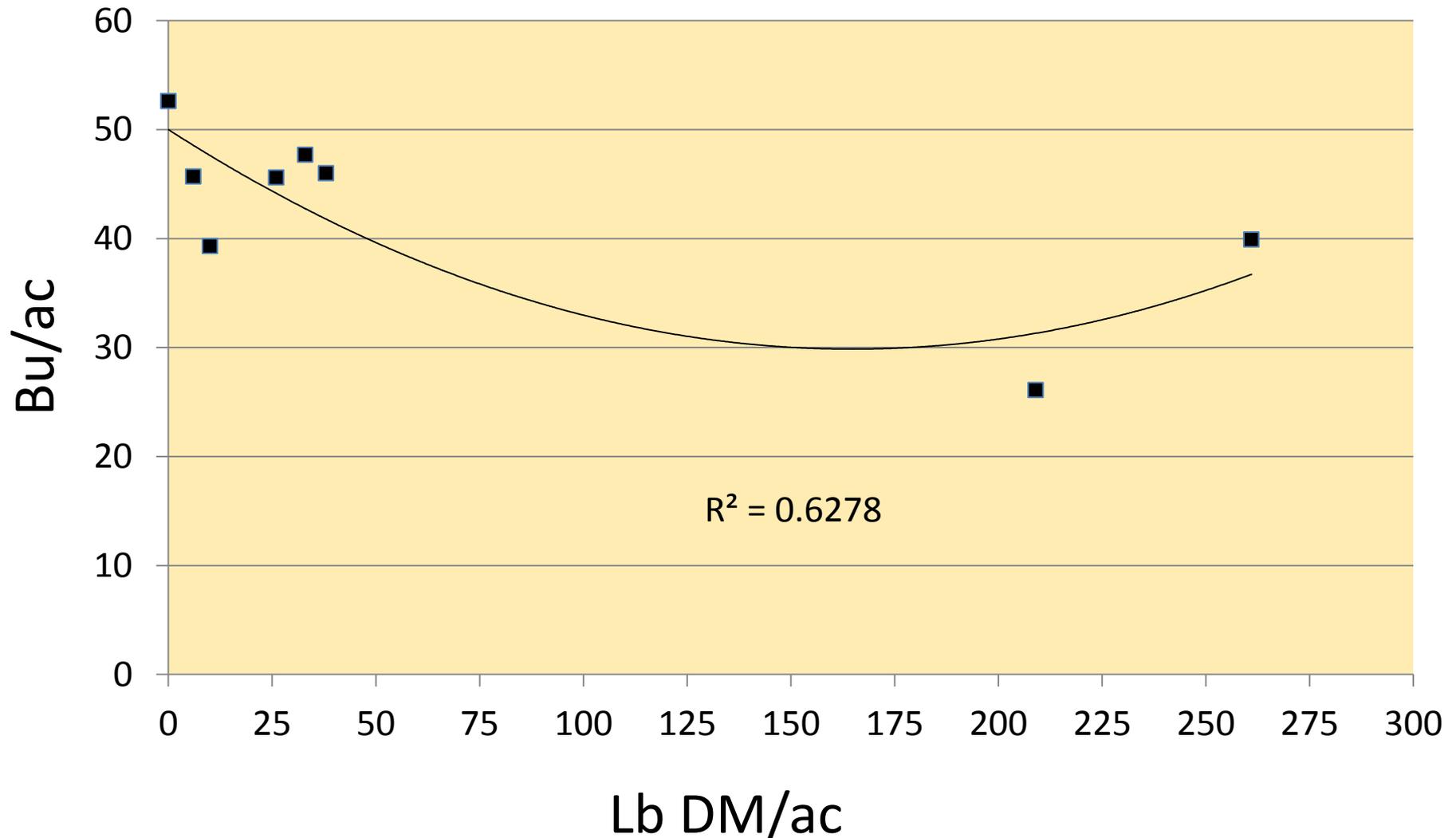
# 2012 Willott CC Plot "Normal" Ear



## Biomass readings and Nitrogen Sidedress Recommendation using GreenSeeker NDVI Readings



## Influence of DM lb/ac on Corn bu



# Willott Farms CC Plots

## Nitrogen Sidedress lb/ac

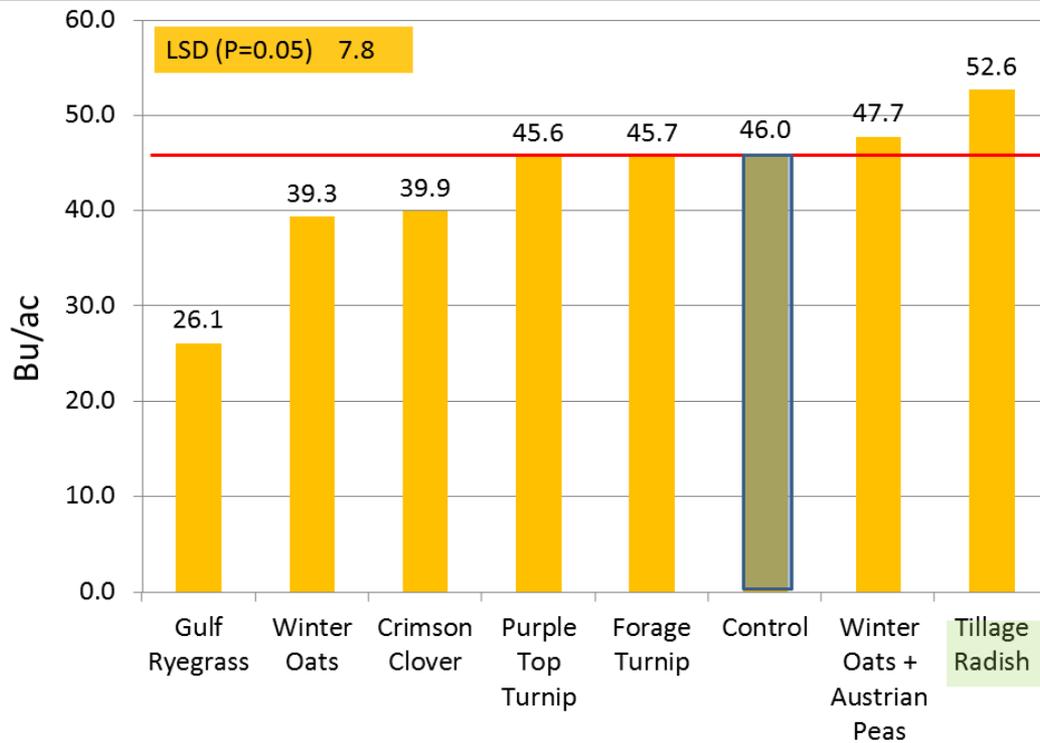
### North Plots Drilled Aug. 26, 2011

Treatment	Mean	
Crimson Clover	70	A
Winter Oats + Crimson Clover	79	A
Winter Oats	88	A
Tillage Radish	101	AB
Control	101	AB
Forage Turnip	104	AB
Winter Oats + Austrian Peas	113	AB
Purple Top Turnip	141	B
Gulf Annual Ryegrass	145	B
<b>LSD (P=0.01)</b>	<b>52</b>	



# Drought Results

UNIVERSITY OF MISSOURI™  
**U** Extension 2012 Willott CC Plots Corn Yield



On Farm Research: Hoormann, Ellis, Shannon, Bolt, Willott



# Establishment Methods

- Establishment methods/species being evaluated in a corn/soybean rotation.



# Drought Response

- Due to the severe drought in Missouri, extension personnel assisted cattle producers in incorporating cover crops in their crop rotation for fall grazing.



# Field Days:

- Demonstration plots were featured in fields at Laddonia in April and November. Over 60 producers, service suppliers and agency personnel attended to see soil pits of the cover crop species and fall establishment of cover crops.



- Webinars were held in August and October
  - Four total for the year
- Topics discussed included species selection, establishment methods and demonstration site yield results.

# Soils & Crops Presentations:

- **Audrain County Soils & Crops Conference**
- **Montgomery County Soils & Crops Conference**
- **Callaway County Soils & Crops Conference**

**Presentations to local suppliers, industry reps  
and farmers**

**-fitting cover crops in corn-soybean rotations**

**-Grazing cover crops in crop rotations**

**-Seeding methods and timing**

# Experiment Station Presentations

- Cover Crop presentations:
  - Bradford Farm
  - Graves Chapple Farm
  - Hundley-Whaley Farm
- Over 500 producers in attendance.

# Demonstration site

## activity:

- Demonstrations were expanded
  - three sites in 2010
  - seven in 2011.
- The demonstration sites in Central, NW, EC, NC cropping regions
  - Laddonia, Silex, Truxton, Jonesburg, Jefferson City (Carver Farm, Lincoln University), Columbia (Bradford Farm, MU), Rockport (Graves-Chapel Farm, MU), Hundley-Whaley Farm

- The **Lincoln University IPM Vegetable Workshop**
- ***The Lincoln University Cove Crop Program***
  - *Small farmer orientation*

- **Pilot Grove MFA**
  - central Missouri for invitation only farm customers
  - Presented with cover crop farmer cooperator
- **Fayette MFA**
  - Open meeting in central Missouri
- **Green Valley Seed Company**
  - Presentations by farmer cooperators in SARE sponsored projects
    - Row crop systems
    - Grazing systems

- USDA Plant Materials Center
  - staff held a joint meeting with MUEXT specialist Rich Hoormann and Charles Ellis in January 2012 to exchange demonstration protocols and exchange plot information and assist with increasing cover crop species growing information.
- Biomass for fuel Production
- Organic Farming
- AFRI grant Economic Decision Tool
  - ERS faculty in MU
  - Small and Medium farm decision tool
    - Vegetable
    - Row crops
- Soil Health Project
  - ARS
  - MU research appointments
  - Rich Hoormann
  - Characterization of undisturbed soil associations for base line
  - Characterization of physical and chemical changes in long term cover crop plots around the state

# AFRI Small & Medium Sized Farms

- "Adopt new multidisciplinary theories and models to assist farm decision-making and in turn
- enhance farm efficiency and sustainability . . . ."
- We propose an integrated research, extension and outreach effort focused on developing web-based decision tools that help farmers diversify their cropping systems.
- This project will involve a combination of economic analysis, development of decision tools and modules, and verification of decision tools

- **Lincoln University Grant Research:**
- Dr. Todd Higgins has begin cover crop work for small farmers.
- Field Days were held in 2011 and 2012

- **WC and CM Regions Cover Crop Conference:**
  - field faculty hosted a cover crop meeting featuring Josh Brown, and Ray Archuleta, NRCS. Both locations were well attended.
- **Cover Crops to Improve the Soil Health of Missouri River Flooded Soils**
  - Wayne Flanary, MUEXT Agronomist

- Organize teams to work on various aspects of cover crops for a state wide pooling of research, demonstration and education efforts for the next two years
- ***2012 Crop Management Conference***
  - *Cover Crops and Drought Management*
- ***National Small Farmer Conference***
  - *Columbia*

- Missouri Research Faculty
  - Pursuing and obtaining grant funding
- Agency cooperation in efforts
- Industry increasingly interested
  - Pioneer, MFA, etc.
- Rapid increase in farmer experimentation
- More questions from clientele