

Drought Impact on Crops

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Discussion Points for Grasses

- What are the major drought effects on plants?
- What can we expect from our pastures next spring and summer?
- How long will it take them to recover?
- How should we approach post-drought pasture management?



What are the major drought effects on plants?

When actively growing

- Reduced growth (yield)
- Restricted root growth
 - Less moisture
 - Less nutrients

When dormant

- Little or no effect
- Reduced canopy for weed species?



General Expectations (Improved Grasses)

If there is any damage, expect less production and more weeds

- Stands on sandy sites may be damaged more than stands on heavier soils.
- Stands with lower fertility and overgrazing may be more damaged than properly managed stands.



Lingering Effects on Native Range Sites

- Overgrazed if not managed
- Less plant residue causing less canopy on the ground
- Reduced carbohydrate reserves reducing growth and development the next spring
- Increased weed pressure



Challenges for 2012 (and beyond)

- Managing cows to rebreed
- Forage budgeting
- Fertilization strategies
- Weed control strategies



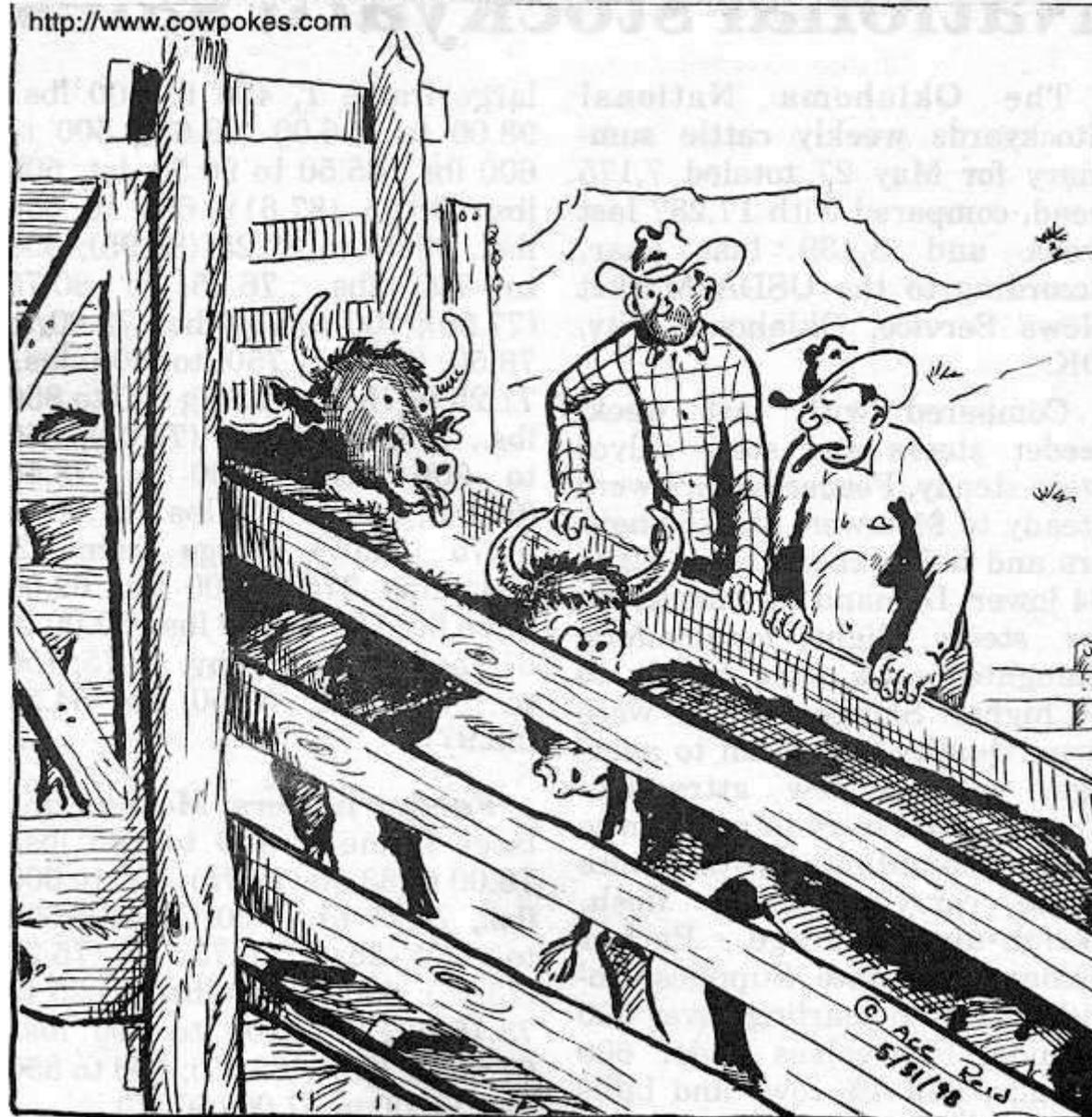
Forage Budgeting Guidelines

- OSU Extension Fact Sheet F-2584.
- Required Dry Matter Forage Intake.
- Fertility rates to get to needed total forage production. Get ready for sticker shock!
- Growing season for the forage species.



**"How many head are you plannin' on
overstockin' with this summer?"**

<http://www.cowpokes.com>

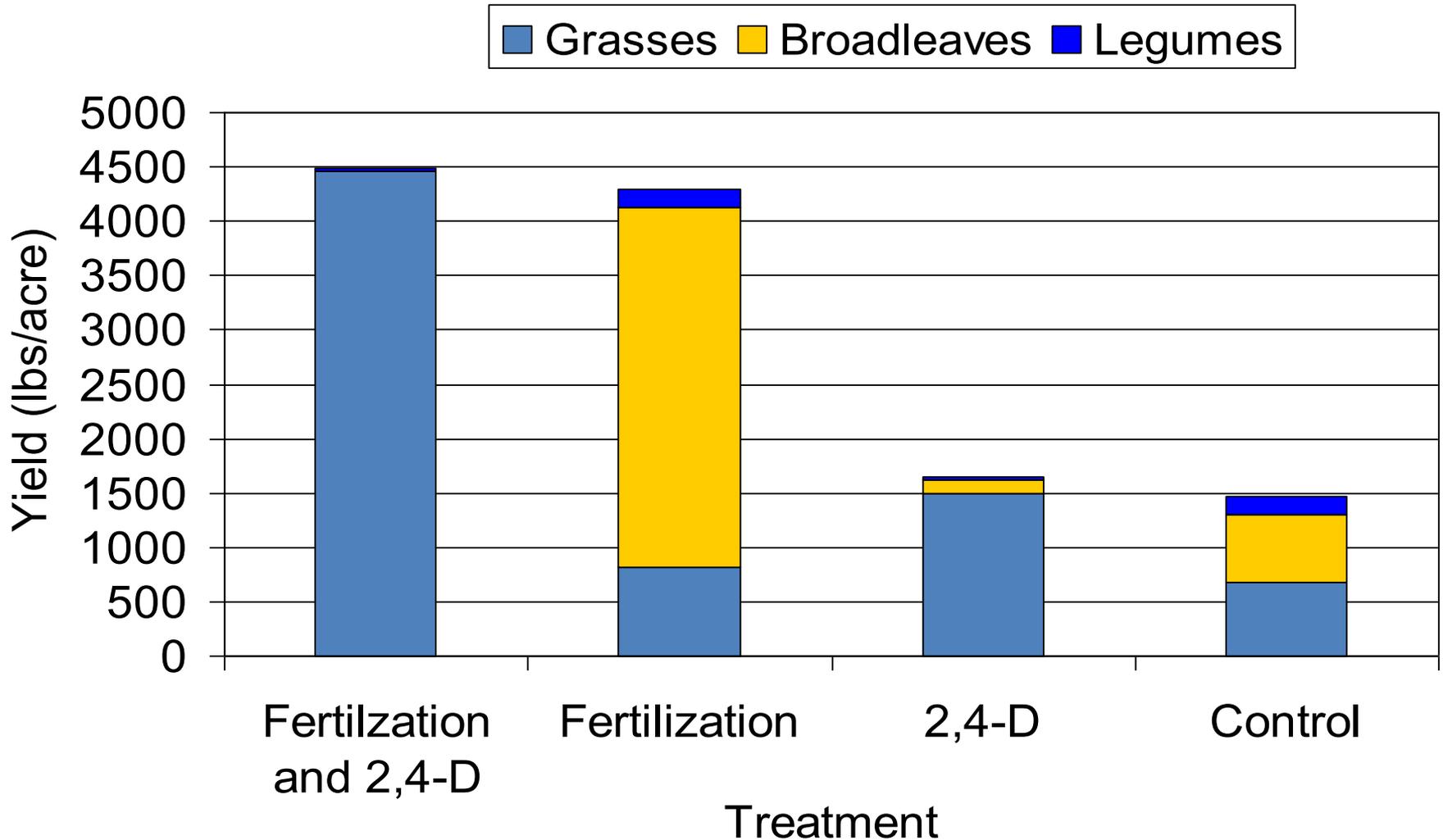


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Fertilization and Herbicides



Management Choices

- Overstock and let animal performance suffer.
- Overstock and supplement with purchased hays or grains.
- Fit stocking rate to the natural production (no fertilizers or herbicides)
- Fertilize the forage base and fit production potential and intended stocking rate.

Wheat Production Concerns

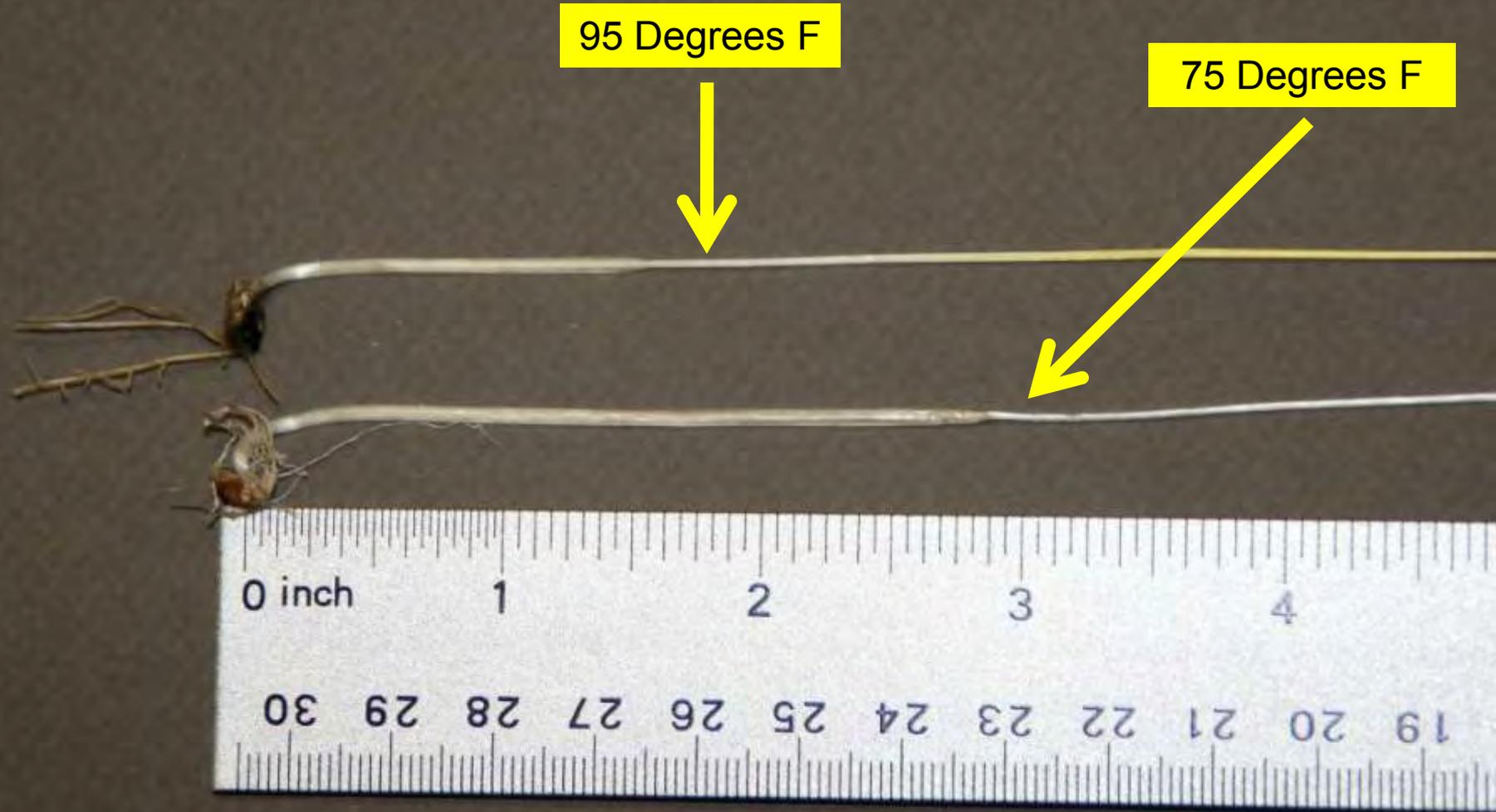


Germination Sensitivity





Coleoptile Length





2011 Fall Forage Production







How do plants respond to drought conditions?

- Decrease in the area of individual leaves
- Leaf abscission (drop)
- Photosynthesis is limited
- Stomata close
- Wax deposition on leaf surface increases
- Leaf orientation changes



Glyphosate resistant waterhemp Muskogee County, OK



Untreated

0.5x

0.375 lb ae

1x

0.75 lb ae

2x

1.5 lb ae

4x

3.0 lb ae

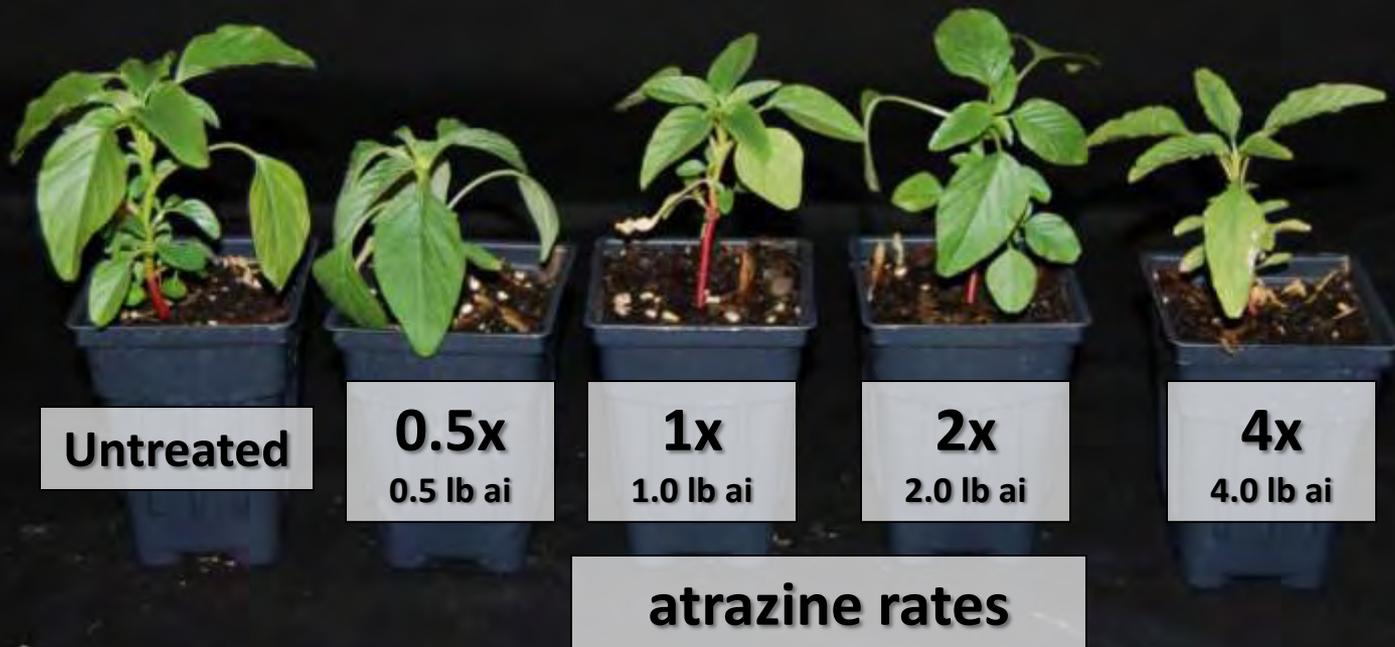
8x

6.0 lb ae

Glyphosate rates

0.75 lb ae/acre = 32 fl oz generic glyphosate/acre

Atrazine resistant Palmer amaranth submitted by Metcalf & Gribble





Corn

- Nitrates
- Aflatoxin



Grain Sorghum

- Nitrates
- Prussic Acid









