1

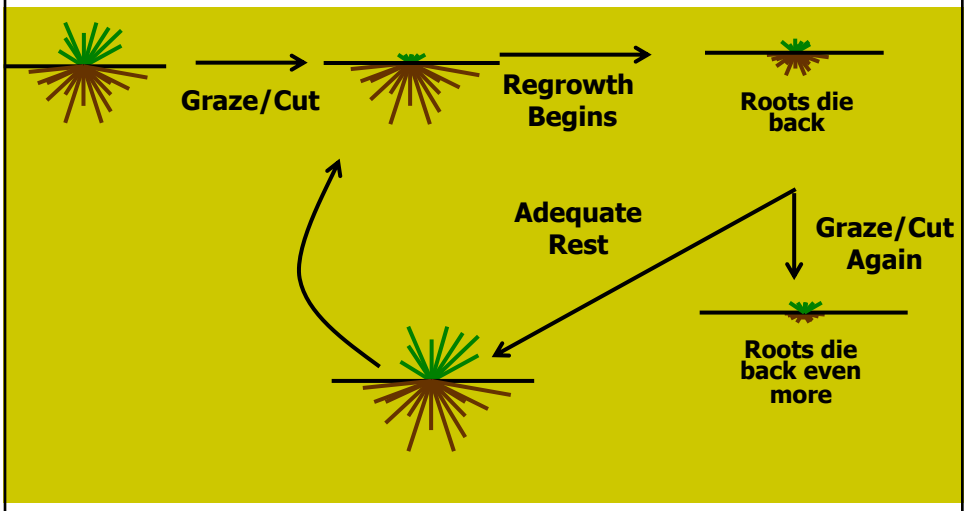
Forage Management Tips

- Minimize overgrazing
- Watch U.S. Drought Monitor
- Maintain fertility
- Weed & insect control
- Utilize cool season annual forages

2

3

What you don't see….

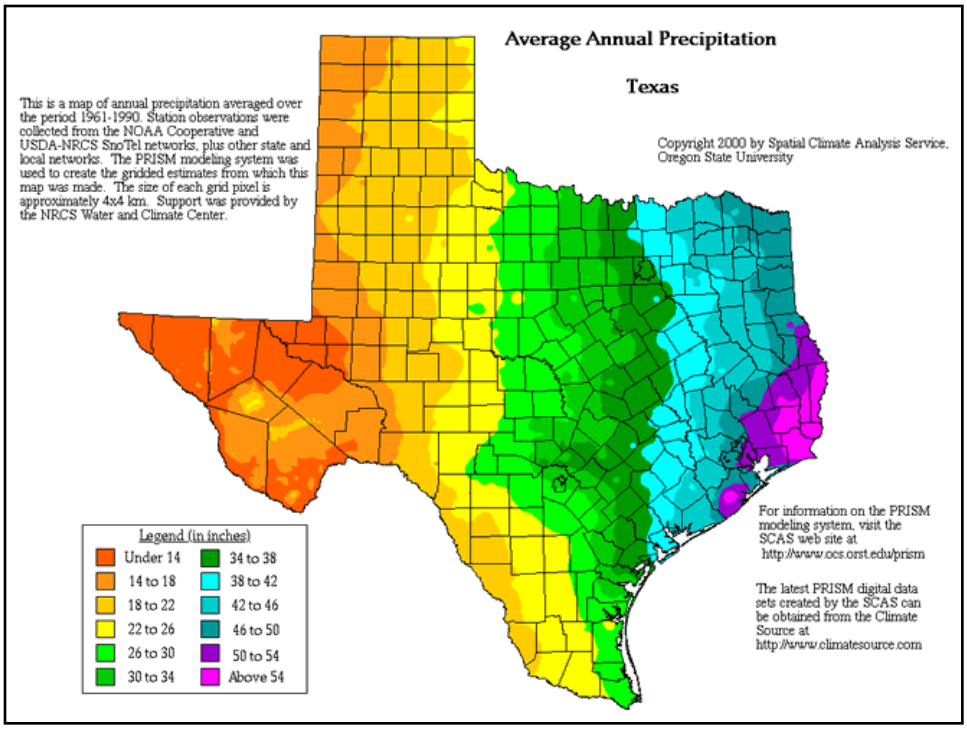


4

Management Tips

- Minimize overgrazing
- Watch U.S. Drought Monitor

5



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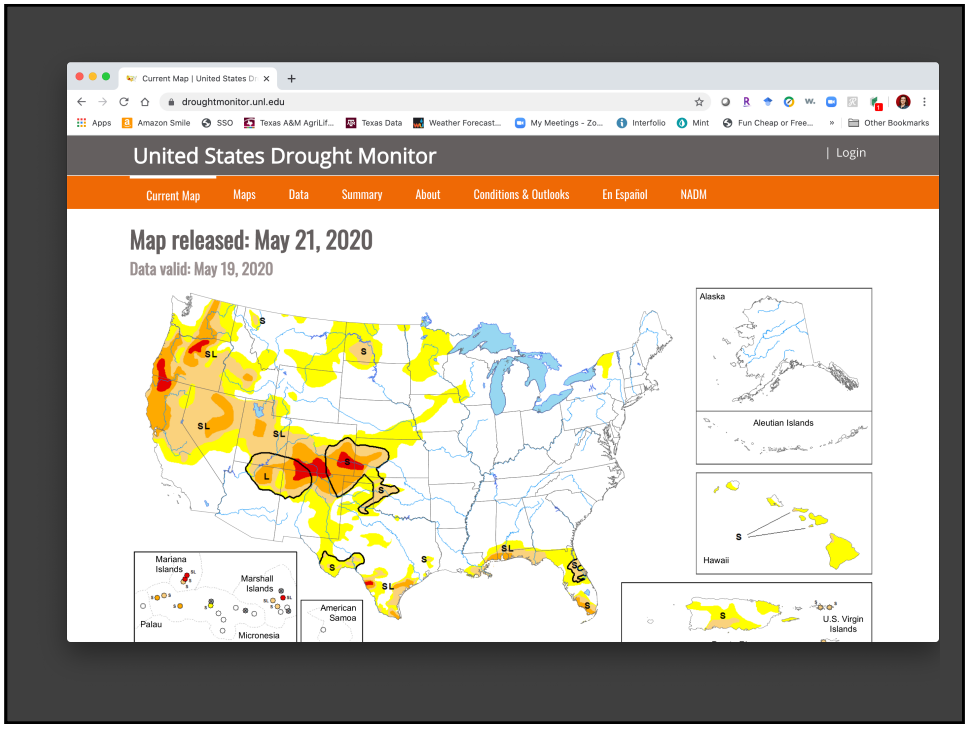
droughtmonitor.unl.edu
United States Drought Monitor
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NADM
Map released: May 21, 2020
Data valid: May 19, 2020
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Mariana Islands
Marshall Islands
Palau
Micronesia
American Samoa
U.S. Virgin Islands

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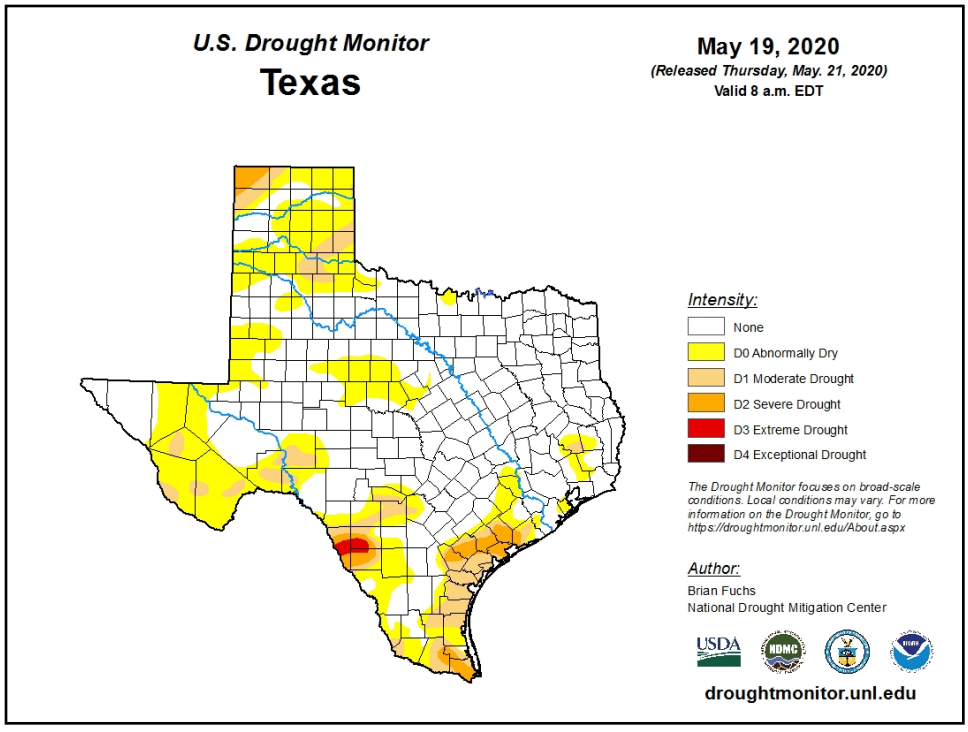
U.S. Drought Monitor
Texas
May 19, 2020
(Released Thursday, May. 21, 2020)
Valid 8 a.m. EDT
Intensity:
None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx
Author:
Brian Fuchs
National Drought Mitigation Center
droughtmonitor.unl.edu

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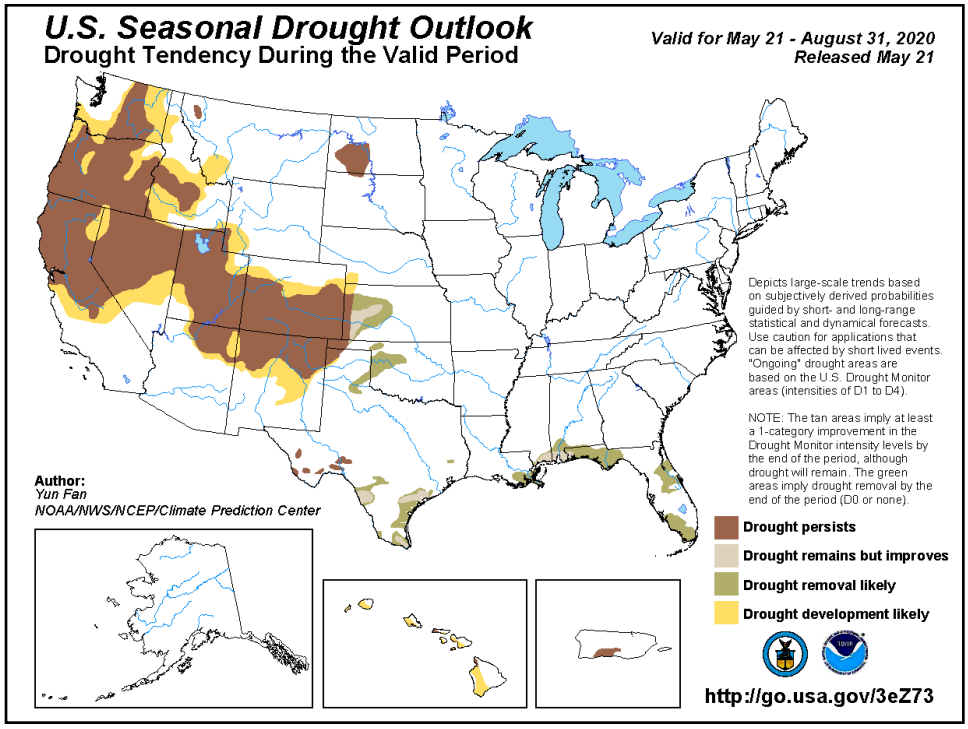

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Management Tips

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- Maintain fertility

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Soil Testing

- **Annual Testing most effective/recommended**
  - Credits natural and carryover nutrients
  - Determines proper annual fertilizer rates
  - Best economic return
- **Sampling depth**
  - 0 to 6 inches (standard): best for N,P,K, micros
  - 6 to 12 inches or 6 to 18 inches?

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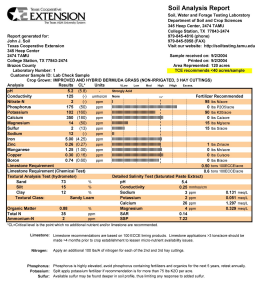
Soil Sampling: The Most Important Step



Soil Analysis Report

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Essential Elements

- **Primary Nutrients:**
  - Nitrogen, Phosphorus, Potassium
- **Secondary Nutrients:**
  - Calcium, Magnesium, Sulfur
- **Micronutrients:**
  - Copper, Iron, Manganese, Zinc

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Nutrient Uptake of Coastal Bermudagrass

	Nutrient	lbs/ton	lbs/2 tons
Primary	Nitrogen	50	100
	Phosphorus	14	28
	Potassium	42	84
Secondary	Calcium	8	15
	Magnesium	3	6
	Sulfur	4	8
Micro	Copper	0.03	0.05
	Manganese	0.03	0.05
	Zinc	0.05	0.10

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Effect of Nitrogen Rate on Bermudagrass Yield and Quality

Annual N (lbs/acre)	Yield (tons/acre)	Crude Protein (%)
0	2.7	7.0
100	4.4	9.1
200	5.9	10.5
400	8.6	12.7

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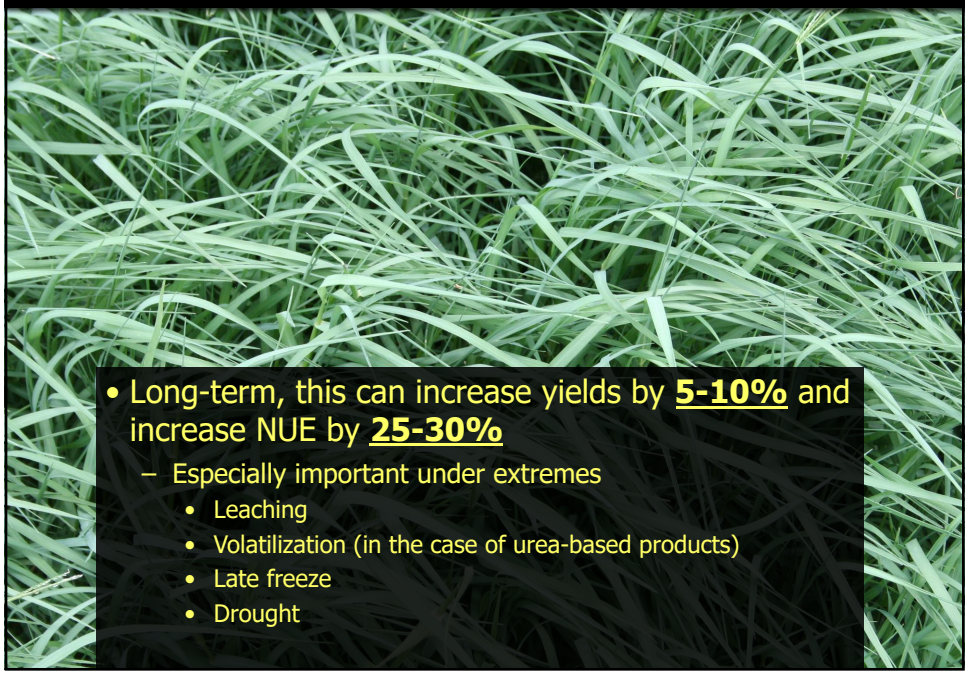
SPLIT YOUR NITROGEN APPLICATIONS!



- Long-term, this can increase yields by **5-10%** and increase NUE by **25-30%**
  - Especially important under extremes
    - Leaching
    - Volatilization (in the case of urea-based products)
    - Late freeze
    - Drought

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Phosphorus:

Characteristics and Functions

- **Functions:**
  - Stimulate early growth and root formation
  - Improves moisture and nutrient uptake
  - Promotes optimum forage growth and quality
- **Soil Movement:**
  - Very immobile
  - Will not leak nor volatize
  - Subject to stratification (build-up in surface 2-3" of soil)

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Potassium:

Characteristics and Functions

- **Function in Plant:**
  - Controls stomates ⇨ water use efficiency
  - Increases disease resistance
  - Improves cold hardiness
- **Movement in Soil:**
  - Does not leach (med./heavy soils)
  - Will not volatilize
- **Deficiency:**
  - Uncommon on heavy soils
  - More likely on medium/coarse textured soils

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K is for Persistence
N P K
200 40 160
N P K
200 40 0

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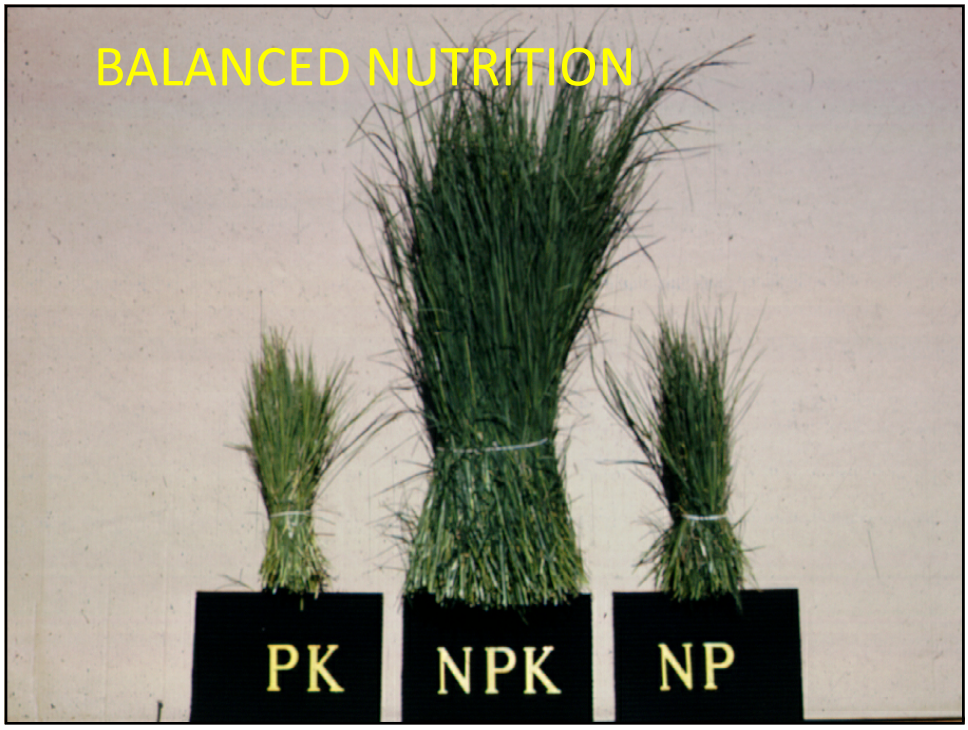
BALANCED NUTRITION
PK
NPK
NP

20

Effect of Soil pH on Nutrient Recovery

pH	Nitrogen	Phosphorus	Potash
7.0	70	30	60
6.0	63	20	60
5.5	52	15	45
5.0	38	10	30
4.5	21	8	21

- **Below 5.5 can begin to have problems with aluminum and manganese toxicity**

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Average and Range in Nutrient Value for Animal Manures

Source	Nitrogen	Phosphorus	Potassium
	----------lbs/ton----------		
Beef	27 (23-39)	24 (15-39)	36 (18-56)
Dairy	28 (4-44)	11 (1-78)	26 (1-48)
Broiler	58 (34-89)	51 (32-67)	40 (16-48)
Layer	30 (13-70)	40 (2-85)	20 (8-52)
Swine	10 (9-11)	9 (7-13)	7 (6-9)

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Comparison of traditional and nontraditional fertilizers for Bermudagrass yields

Treatment	Dry Matter Yield (lbs/ac)
Ammonium Nitrate	3,299
Urea + Monty's Plant Food	2,919
Urea + Sea 90 Mineral	2,913
UAN	2,877
Urea	2,872
Urea + Fish Emulsion	2,619
Fish Emulsion	965
Monty's Plant Food	928
Sea 90 Mineral	847
Untreated Check	745

J.A. Jennings, K.J. Simon, J.W. Boyd, L. Espinoza and M.S. Gadberry. University of Arkansas. Dairy Digest Vol 16:5

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Management Tips

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Methods of Weed Control

- Manage pasture for maximum production (compete against weeds)
  - Soil pH and fertility maintained
- Grazing pressure
- Mowing (mechanical)
- Herbicide application
  - Pre-emergence
  - Post-emergence

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Economic Comparison: Mechanical vs. Chemical

Item	40-hp tractor w/ 6' Rotary Mower	40-hp tractor w/ 30' boom sprayer
Labor cost	$15.00	$15.00
Acres/hour	2.98	14.88
Costs		
Fixed cost/acre	$4.95	$1.00
Operating cost/acre	$6.18	$1.37
Labor cost/acre	$5.04	$1.01
Herbicide cost/acre (1.5 pt GrazonNext HL/acre)	$0	$9.00
Total Cost/Acre	**$16.17**	**$12.38**

Corriher-Olson and Cornforth, 2018

$3.79/acre difference!!

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Effective Chemical Use

- **Follow label directions** for:
  - Application rate
  - Timing of application
  - Grazing restrictions
  - Cleanup and disposal
- **ID weed** correctly
  - Use appropriate herbicide
  - Timing
- **DO NOT APPLY** during drought

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Planting Options

	Seeding Rate (lb/ac)	Planting Depth	Months of Use
Ryegrass Only	25-30	0-0.5 in	Feb to May
Small Grain Only	90-100	1-1.5 in	Dec to April
Ryegrass & Small Grain	15-20 (ryegrass) 90-100 (small grain)	See above	Dec to May
Ryegrass & Legume	15-20 (ryegrass) 2/3 of pure stand seeding rate (legume)	0-0.5 in (ryegrass) 0-1.0 in depending on legume	Feb to May

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NOTE:

- Well-managed forages recover **more rapidly** and **more completely** than those that are not well managed.
- Well-managed means:
  - **Fertilized** appropriately
  - **Stocked** appropriately
  - Not grazed/hayed **too short**.

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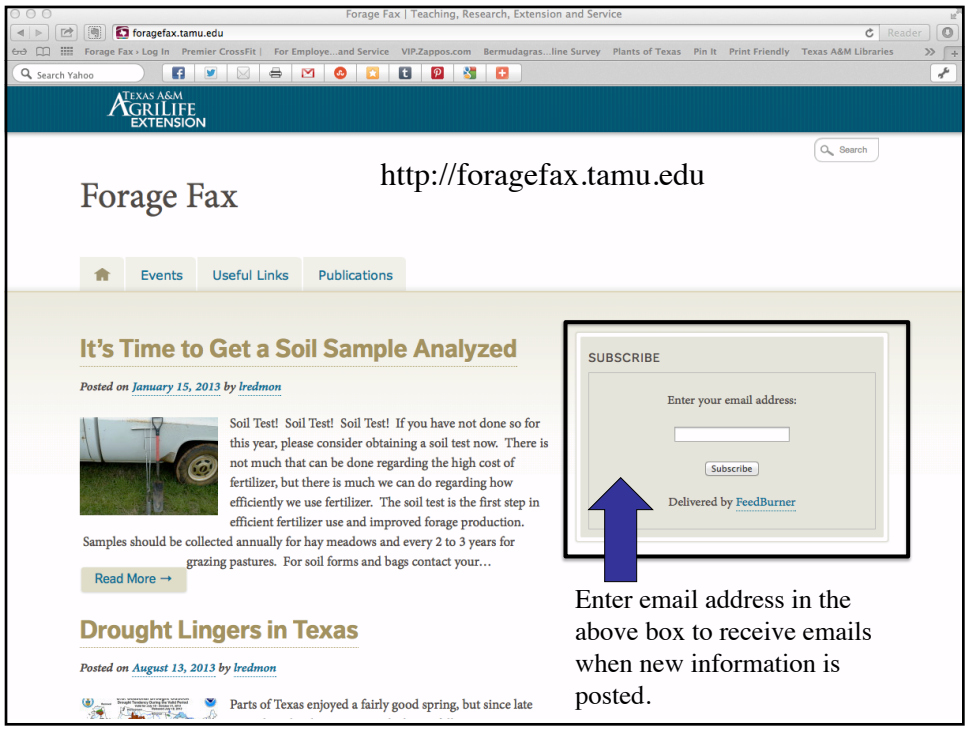
40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Events
Useful Links
Publications
It's Time to Get a Soil Sample Analyzed
Posted on January 15, 2013 by lredmon
Soil Test! Soil Test! Soil Test! If you have not done so for this year, please consider obtaining a soil test now. There is not much that can be done regarding the high cost of fertilizer, but there is much we can do regarding how efficiently we use fertilizer. The soil test is the first step in efficient fertilizer use and improved forage production. Samples should be collected annually for hay meadows and every 2 to 3 years for grazing pastures. For soil forms and bags contact your…
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Drought Lingers in Texas
Posted on August 13, 2013 by lredmon
Parts of Texas enjoyed a fairly good spring, but since late
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