

## Strategies for Drought II

### Preparing for the Next Drought

If your crystal ball is not working it is always better to be safe than sorry when it comes to a potential drought because another drought will occur, the prediction is when. Some best management practices can prepare us for a potential drought: forage management, grazing management, and utilization of warm-season annual forages.

*Forage management:* It is always important, drought or not, to pay attention to plant nutrient requirements. Soil test, apply the needed fertilizer and hope for rain. Ensure soil pH is adequate to enhance fertilizer uptake efficiency. Applying nitrogen fertilizer just prior to times when conditions are likely to be optimum for forage growth, such as the beginning of the growing season, helps to maximize its utilization. In periods of limited soil moisture, delaying fertilizer application until moisture is present or imminent can also increase efficiency. When rain falls, pastures should be well fed and ready to grow. If not managed properly during drought recover, invasive species will take over and once established will be difficult to get rid of.

*Grazing management:* Heavy grazing during drought can severely stress plants. Even prior to a drought, heavy grazing reduces the root mass and can make the plants less efficient at utilizing any nutrients and moisture in the soil. It may be necessary to remove livestock from pastures and feed stored feed for some time. Those without adequate facilities may have to establish a sacrifice paddock where feeding can take place. Using a rotation stocking management system allows flexibility for this practice. Using a sacrifice paddock will limit the damage to only one pasture as opposed to multiple areas. Animals could also be fed in alleyways and/or lanes. If feeding livestock in other locations, make sure water is always available. If destocking has occurred due to a drought, consider maintaining herd size at that number. It is much more economical to harvest hay from excess forage during good times than it is to feed stored forage and supplement during a drought.

*Warm-season annuals:* Summer annual grasses should be considered as temporary solutions to summer forage needs. They can be expensive to produce, difficult to manage, and have a potential for prussic acid and/or nitrate poisoning of livestock. Some desirable characteristics include rapid growth, excellent drought tolerance, and good response to fertilizer and water. The most efficient and economical use of these grasses is in a management-intensive rotational grazing system. Summer annuals can be an excellent option in dry years.

Summer annual grasses that can be grown in Texas include sudangrass (*Sorghum bicolor*), forage sorghum (*Sorghum bicolor*), sorghum x sudangrass hybrids, pearl millet (*Pennisetum americanum*),



Figure 1 Summer stockers on well-managed Tifton 85 bermudagrass

and crabgrass (*Digitaria sanguinalis*). These forages can be valuable in the development of a forage system. Each of these has unique growth characteristics that require proper management for optimum production.

Pearl millet is better adapted to sandy, acid soils than forage sorghum. Plantings can be made in the spring by simply broadcasting or drilling at a soil depth of 1/2 to 1 inch. Pearl millet will regrow after harvest if a 5-inch stubble height is left. Be careful not to graze or mow pearl millet too closely because it can be killed. It will take about 4 to 6 weeks of regrowth before it is ready for the next harvest. Grazing can be continued until frost is expected. Pearl millet has a distinct advantage over sorghum, sudangrass, and sorghum x sudangrass hybrids, it does not produce prussic acid. However, millet as well as sorghums can cause nitrate poisoning.

Sorghums are a class of warm season annual grasses in which several forage types have been developed. Forage sorghums are best adapted to fertile, well-drained soils that have good water holding capacity. It is the most drought tolerant of the warm-season annuals mentioned in this paper. Before grazing, sorghum should be at least 30 inches tall and grazed to a stubble height of 5 to 7 inches. Forage sorghums are best used in a single hay cutting when plants are in bloom or early dough stage. A mower-conditioner will be needed to crush the stems to decrease drying time.

Sudangrass is a rapid growing warm-season annual that can produce good quality forage if management appropriately. True sudangrass has fine stems and grows rapidly after grazing. They are usually lower yielding compared with sorghum-sudangrass hybrids. Sorghum-sudangrass hybrids have the highest yield potential of any of the summer annuals. Sorghum-sudans can be used for grazing or silage, but like other annual sorghums, their forage is very difficult to dry to moistures suitable for hay production. If grazed, the sorghum-sudans should be rotationally grazed allowing regrowth height to reach 24 inches before grazing.

Be aware that both millet and sorghum-sudan plants can accumulate nitrates during drought, so test hay before feeding and graze pastures cautiously. Nitrates will persist in forages cut for hay. If hay is suspected of having high nitrate levels, it should be sampled and tested. Your local County Extension Office can provide information on hay sampling and advice on using hay with high nitrate levels. In addition to grazing, these crops can be harvested as green chop, silage, or hay. Feeding green chop requires the same precautions as grazing to prevent prussic acid and/or nitrate poisoning, Silage or hay is easiest to cure when the plants are in the boot stage; however, yield and sugar for rapid fermentation of silage are greater at the soft dough stage. A conditioner must be used to crush the stems to ensure quick drying for hay.

Crabgrass is commonly considered a weed, however it possesses significant potential for supplying high quality summer forage. Crabgrass is best adapted to well-drained soils such as sand, sandy-loam, loamy-fine sand, loams and silt loams. It is best utilized in a rotational grazing system.

Summer annuals need a good supply of nutrients to make high yields. Lime, phosphorus and potassium should be applied according to soil test recommendations. Nitrogen is important and should be added at the rate of 60 to 100 pounds per acre at green up. If additional harvests are planned, 40 to 60 pounds of nitrogen per acre may be added after each harvest. Warm season annuals do require annual land preparation, planting and fertilization. They may not be economical with high diesel, seed, fertilizer, and irrigation prices. If summer precipitation limits or prevents hay production, winter annuals are the cattleman's next option.

**Managing for drought is complex and must take place throughout the calendar year. Be sure to graze properly in the summer and plan ahead for fall, winter and spring forage production so that feeding of expensive hay or supplements is minimized.**

Vanessa Corriher-Olson

Forage Extension Specialist  
Soil & Crop Sciences  
Overton, TX

The members of Texas A&M AgriLife Extension will provide equal opportunities in programs and activities, education, and employment to all persons regardless of race, color, religion, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or gender identity and will strive to achieve full and equal employment opportunities through Texas A&M AgriLife. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.

## CEU & PESTICIDE / HERBICIDE NEWS

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### USE OF PARAQUAT PRODUCTS:

Training is being required by the EPA for the use of any paraquat product. This training is strictly online, and the training module can be accessed at: <https://campus.extension.org/enrol/index.php?id=1660>. This training applies to all paraquat applications, and to use you must be a licensed applicator. The word “use “in this rule applies to all activities occurring before applications (mixing & loading), applying the pesticide, and other related activities including, but not limited to storage of open containers, transporting open containers, cleaning equipment, disposing of excess pesticides, spray mix, wash water, pesticide containers, and any other materials containing paraquat

## UPCOMING EVENTS, PROGRAMS, MEETINGS – See Flyers Below

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04/21/2022 - Forage Program Part 2 – 6:00pm – 7:00pm \$10

- In office or Online Via Teams. Please contact the Office if you have questions

04/26/2022 – Entomology 101 – 1:00pm -4:00pm \$20

- Navarro County Youth Expo, Contact the office if you have any questions

05/18/2022 – Cattle Marketing Clinic – Noon – 4:00pm \$25

- @Navarro County Youth Expo, Contact the office with any questions

## HOW TO CONTACT US

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Find us online: <https://navarro.agrilife.org/>

Find us on Facebook: @NAVCOANR

Call us: 903-654-3075

Email us: [Andrew.lewis@ag.tamu.edu](mailto:Andrew.lewis@ag.tamu.edu)

Give us a call or email to get added to our email and mailing list.

**NAVARRO COUNTY FORAGE TALK PT2**

April 21, 2022

6:00 pm

Extension Office

313 W 3rd Ave

Corsicana, TX 75110

**DR. VANESSA CORRIHER-OLSON  
EXTENSION FORAGE SPECIALIST**

**VIRTUAL OPTIONS AVAILABLE**

The members of Texas A&M AgriLife will provide equal opportunities in programs and activities, education, and employment to all persons regardless of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, gender identity, or any other classification protected by federal, state, or local law and will strive to achieve full and equal employment opportunity throughout Texas A&M AgriLife.

TEXAS A&M  
**AGRI LIFE**  
EXTENSION

Navarro County



# NAVARRO COUNTY ENTO 101

Navarro County  
Entomology 101  
W/ Dr. Sonja Swiger  
04/26/2022

Navarro County Youth Expo  
1:00pm Livestock Pests  
2:00pm Garden&Lawn Pests  
\$20 - 1hr CEU Offered  
Contact the office for any  
questions.

903-654-3075

TEXAS A&M  
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Navarro County

The members of Texas A&M AgriLife will provide equal opportunities in programs and activities, education, and employment to all persons regardless of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, gender identity, or any other classification protected by federal, state, or local law and will strive to achieve full and equal employment opportunity throughout Texas A&M AgriLife.

**All East Texas Regions:**

**Seed control:**

- Scout for warm-season annual weeds and assess whether to control them with recommended herbicides. When pastures contain 50 percent or more weeds, economic inputs start to increase and net returns drop.
- Calibrate the sprayer.
- Apply herbicide early, depending on the climate. To control annual weeds effectively, spray when they are small and growing

**Hay Production:** As warm-season perennials emerge from dormancy, fertilize according to annual soil test recommendations.

**Ryegrass:** Fertilize with 50 to 65 pounds of nitrogen per acre.

**Small grain and ryegrass:** For a sod-seeded pasture used for grazing, fertilize at 50 - 65 pounds of nitrogen per acre.

**Clover:**

- Remove cattle from clover if seed production and reseeding are desired. Then harvest/graze for May.
- To reduce competition with emerging summer perennials grasses, remove all winter forage from overseeded pastures by grazing or haying.
- Test the soil of pastures to be planted to clover in the fall to determine whether to apply lime now to raise soil pH.

**Blackland Prairies:**

**Hay Production:** In general, May 1 may be the best time to start fertilizing for hay.

**Establishing bermudagrass:** Plant seeded bermudagrass, bahiagrass, or dallisgrass after night temperatures reach at least 60F.

The information above is taken from the AgriLife Extension Eastern Texas forage Calendar. The calendar is compiled by our Forage specialist Dr. Vanessa Corriher – Olsen. If you have any questions, please do not hesitate to contact me at the office 903-654-3075

**All East Texas Regions:**

**Hay Production:**

- As warm-season perennials emerge from dormancy, fertilize according to annual soil test recommendations
- Begin harvesting hay to ensure adequate quality.

**Ryegrass:**

- Add another set of stockers or continue with cow-calf
- May 15: Ryegrass starts setting seed. Fertilize it with 50 – 65 pounds of nitrogen per acre.

**Weed management:**

- Assess whether weeds need to be controlled. If so, use recommended herbicides.
- For Warm-season annual weeds, apply herbicide when the weeds are small and actively growing.
- Calibrate the sprayer.
- Follow the recommendations on the product label.

**Establishing bermudagrass:**

- Bermudagrass prefers warm weather. Do not dig or plant sprigs of Tifton 85 until night temperatures reach the mid- to upper 50s.
- Plant 30 to 40 bushels of sprigs per acre into a moist seedbed.
- Plant the sprigs 2 to 2<sup>1</sup>/<sub>2</sub> inches deep. Do not plant them deeper than 3 inches.
- Roll the seedbed to insure good sprig-soil contact
- Use a preemergent herbicide within a day or two post-planting

**Small grain and ryegrass:** Fertilize May 15 – 30 if winter pasture and bermudagrass grazing are needed. Note: Fertilization on this date depends on forage conditions and stocking rate.

**Blackland Prairies:**

**Hay Production:** In general, May 1 can be the best time to start fertilizing for hay.

**Small grain and ryegrass:** In sod-seeded pastures used for grazing, stockers may be removed in mid-May and other cattle (cow-calf or stocker) may be placed on bermudagrass pastures.

**Warm-season annual:** If more forage is needed, start planting summer annual forages (sorghum-sudangrass).

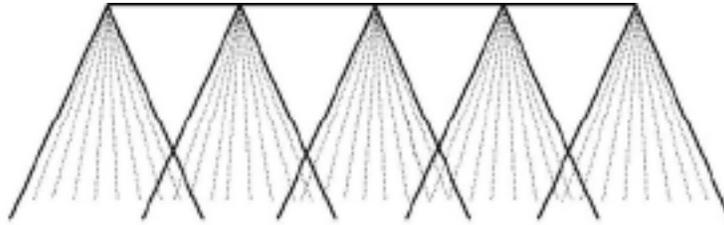
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# Sprayer Calibration

**Dr. Scott A. Nolte**

*Assistant Professor and Extension Weed Specialist*

## Boom Sprayer:



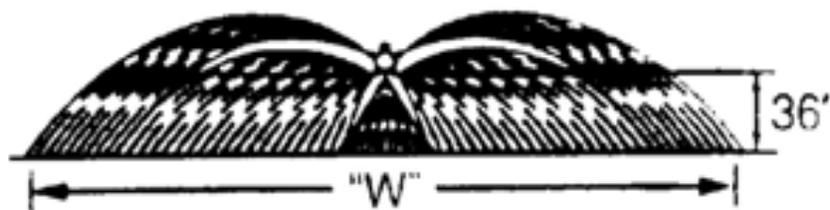
1. Determine nozzle spacing.
2. Refer to table below for length of calibration course.
3. Mark off calibration course.
4. Record time required to drive calibration course at desired field gear and rpm.
5. Park tractor, maintain rpm used to drive course, turn on sprayer.
6. Catch water from one nozzle for time equal to that required to drive calibration course
7. Ounces of water = gallons per acre.
8.  $\text{Spray tank volume} \div \text{gallons per acre} = \text{acres worth of herbicide to add to spray tank.}$

**Chart for Swath Width and Length of Calibration Course**

Nozzle Spacing (inches)	18	20	30	40
Length of Calibration Course (linear feet)	227	204	136	102

\*To determine course for other nozzle spacing, divide the spacing in feet into 340 (340 sq. ft. = 1/128 of an acre). **Example:** For 19 in. spacing =  $340 \div (19 \div 12) = 215$  ft.

## Boomless Sprayer:



1. Determine swath width.
2. Refer to table below for length of calibration course.
3. Mark off calibration course.
4. Record time required to drive calibration course at desired field gear and rpm.
5. Park tractor, maintain rpm used to drive course, turn on sprayer.
6. Catch water from one nozzle for time equal to that required to drive calibration course.
7. Pints of water = gallons per acre.
8. Spray tank volume  $\div$  gallons per acre = acres worth of herbicide to add to spray tank.

**Chart for Swath Width and Length of Calibration Course**

<b>Effective Swath Width (feet)</b>	<b>25</b>	<b>30</b>	<b>35</b>	<b>40</b>	<b>45</b>	<b>50</b>
<b>Length of Calibration Course* (linear feet)</b>	<b>218</b>	<b>182</b>	<b>156</b>	<b>136</b>	<b>121</b>	<b>109</b>

\*To determine the calibration course for a swath width not listed, divide the swath width expressed in feet into 5445 (5445 sq. ft. = 1/8 of an acre). **Example:** Calibration distance for 32-foot swath width =  $5445 \div 32 = 170$  feet.

Publication by the Department of Soil & Crop Sciences

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