

LIVESTOCK

Shade reduces cattle heat stress

by Deke Alkire / doalkire@noble.org



Cattle will naturally seek shade when the temperature and humidity rise. In many parts of the U.S., shade is a necessity for grazing animals to maintain

optimal performance. Heat stress can greatly impact cattle performance through decreased milk production and subsequent calf growth, decreased reproductive performance in cows and bulls, and decreased stocker and feeder calf performance.

The ideal temperature range for beef cattle is between 41 degrees Fahrenheit and 77 degrees Fahrenheit. When temperatures exceed this range, cattle are at risk of heat stress. Many environmental factors affect the potential for heat stress, including relative humidity, wind speed, solar radiation, ground cover, access to water, diet, shade and nighttime temperatures. In addition, individual animal characteristics can contribute to heat stress. These include hide color, breed, health, adaptation, hair coat length and disposition. When a combination of these factors and ambient temperature cause an animal's heat load to exceed its ability to dissipate that heat, heat stress occurs.

Adequate shade can be effective



Whether from natural sources or man-made structures, adequate shade is an effective tool to reduce heat stress in cattle.

at reducing the effects of heat stress. The minimum amount of shade required is 30 to 40 square feet for mature cattle, 20 to 25 square feet for feeder cattle and 15 to 20 square feet for stockers. If shade is limited, heat stress can be compounded by animals crowding together.

Portable or Permanent

Many times, there is natural shade available in pastures. However, if natural shade is inadequate, consider constructing permanent or portable

shade structures. Permanent structures are more suitable for feeding pens and receiving or weaning traps but can be placed in pastures as well. The initial cost of constructing a permanent structure is about \$1 per square foot of shade but can vary depending on material costs in your area. Portable structures are more expensive to construct but can be moved with the cattle, decreasing the number of units needed. Other advantages to a portable structure include more uniform grazing, less ▶

pasture damage in the shaded area and better manure distribution.

Location

Be sure to locate shade structures to take advantage of prevailing winds during summer. Select areas with minimal slope to prevent erosion that can result from concentrated animal traffic. Also, manure will be concentrated in this area and can contaminate ponds and streams. It is important to leave an adequate buffer along drainages to prevent nutrient runoff. If possible, design shade structures in a long rectangle oriented north to south. A long rectangle, as opposed to a large square, spreads animals out and facilitates drying.

Design Considerations

Both permanent and portable structures should be a minimum of 10 feet tall to allow adequate air flow. In heavy use situations, permanent structures will require manure removal and should be designed to allow easy access based on the size of your equipment. Shade cloth makes a good covering because it is relatively inexpensive, easily replaced and allows for good air flow. Use a UV-resistant cloth that blocks at least 80 percent of light, and expect to replace it every five to eight years. Solid coverings are more expensive and last longer but are more susceptible to wind damage. Consider a taller structure if a solid covering is used.

Every operation is different, and each pasture will have a unique need for shade. The decision to construct shade structures should be based on animal welfare and economics. The cheapest option may be to plant more trees. If natural shade is limited, animals will benefit from shade structures and, if well built, they should last many years. ■

Herbicides control blackberries

by Eddie Funderburg / efunderburg@noble.org



June is usually the best month to control blackberries in pastures and rangeland in the Southern Great Plains. Non-ranchers reading this may wonder why anyone would want to kill a plant that produces such tasty fruit. I like to eat blackberries as well as anyone, but when they encroach into fields, inhibiting forage growth and access to fields, they have crossed the line between desirable plant and weed.

Where blackberry plants are encroaching and need to be controlled, they should be sprayed only after the plants have bloomed and good soil moisture is present. Spraying too early usually leads to poor control and regrowth of plants. To adequately control blackberries, the new wood must have fully emerged. Blackberries only fruit on new wood. Therefore, if the plants have bloomed or have fruit, the new wood is out and the plants are susceptible to herbicides.

The growth status of the plant when it is sprayed is important. A healthy, mature plant is more sensitive to herbicides than one that has been mown or burned and has regrown. For best results, do not spray blackberry plants that have been mown or burned within the past 12 months.

Several herbicides are labeled for and reported to control blackberries. The two we have had the most consistent success with are triclopyr, which is often sold under the trade names Remedy®, Garlon® and Pathfinder II®, and a formulated mixture of triclopyr and fluroxypyr, which is sold under the trade name PastureGard®. Our tests and experience have shown almost 100 percent control when healthy, mature blackberry plants were sprayed with these products after they had bloomed and good soil moisture was present.

Always read and follow instructions on herbicide labels. The label contains a wealth of information about the product, and following its instructions can prevent costly mistakes. ■



Rain shortfall threatens 2014 growing season

by Hugh Aljoe / hdaljoe@noble.org



The rainfall pattern thus far for 2014 is very similar to the start of 2011 when we experienced exceptional drought. According to the Oklahoma Mesonet

website (see table), average total rainfall for the first four months of the year for Ardmore, Oklahoma, is 10.43 inches. At the end of April 2014, Ardmore had received a total of 5.67 inches of precipitation. That computes to 54 percent of the average to date. Every producer should assess the moisture situation at their operation and develop a drought plan if the year continues to be drier than average.

To make good management decisions about stocking rate and forage management, it is critical to know the rainfall patterns for your operation and how they compare to the long-term average. If you live in Oklahoma, the Mesonet network is available to assist you in determining your monthly and long-term rainfall average. It is online at mesonet.org or by searching for "Oklahoma Mesonet." If you live in Texas or another state, most counties have an official weather station and/or extension and NRCS offices monitoring local monthly rainfall that could provide long-term monthly rainfall information.

There are different ways to study rainfall patterns – by season, by monthly annual accumulations or by water year. The key is to know your data and be able to examine it against your forage production to determine if a different course of action is required.

The long-term average rainfall for the April-May-June time frame for Ardmore is 12.53 inches (Mesonet

Oklahoma Mesonet rainfall data: Ardmore site

	1971-2000 Mesonet		Year 2011	Year 2013	Year 2014
	Normal	Average			
January	1.85	1.75	0.28	1.62	0.39
February	2.19	1.5	1.94	2.45	0.88
March	3.2	2.63	0.06	1.44	2.57
April	3.19	3.09	1.86	1.96	1.83
May	5.08	4.88	5.77	8.37	
June	4.26	3.28	0.11	5.55	
July	2.48	3.02	0.35	3.69	
August	2.51	2.21	1.11	1.17	
September	4.17	2.4	2.51	1.17	
October	4.43	3.97	5.27	5.53	
November	2.7	1.73	2.99	2.79	
December	2.32	1.78	1.97	2.93	
	38.38	32.24	24.22	38.67	

data). In April 2014, only 1.83 inches were received. To expect an average forage year locally, 10.70 inches of rain has to fall in May and June. That is possible but not probable. If we received average rainfall in May (5.08 inches for Ardmore), our total through May would be 10.75 inches, which is still 69 percent behind for the year (long-term average is 15.51 inches) and 84 percent behind the average for April and May (8.27 inches). If rainfall prospects are slim for June, producers need to have a drought plan ready to implement. If prospects are favorable, then continue in a holding pattern for a few more weeks.

It takes rain to grow grass, but it also takes grass to grow more grass. Grass not produced early in the growing season is usually lost for the year. In the Southern Great Plains, approximately 65 percent to 70 percent of the yearly warm-season forage production occurs by the end of June. Above average rainfall during the summer might ensure the forage production expected for the summer (about 35 percent of annual production) but rarely compensates for the lack of production from the spring.

Producers need to be ready to adjust stocking rates or forage demand accordingly. For example, if we expect 65 percent of our forage production to occur by the end of June and we only receive 70 percent of our average rainfall for the spring, we probably should only expect about 45.5 percent (70 percent of 65) of our annual forage production for that spring. If we receive favorable rainfall during the summer and grow the 35 percent forage production expected, then total forage production for the year should be approximately 80.5 percent (45.5 percent + 35 percent) at best. If a producer is stocked for an average rainfall year, at the end of June he is facing a 20 percent forage deficit if the remainder of the growing season is average or better.

Early recognition of drier than normal conditions allows for better drought planning and management. Monitoring moisture and weather in the spring allows producers to consider alternatives and determine the best course of action. Dust off and update your drought plan, and be ready to implement it in a timely fashion should conditions warrant. ■

2014: Third Quarter Events

Winter Pasture Stocker Seminar

This seminar will cover three main areas of interest – best management practices for winter pasture establishment and grazing, economic projections for the cattle market and value of gain this fall, and Noble Foundation research and emerging technologies.

1-5 p.m.
July 15, 2014
Southern Oklahoma Technology Center
Ardmore, Oklahoma
No Registration Fee



Fall Cattle Seminar

As fall approaches, beef cattle producers in the Southern Great Plains are preparing to wean calves and developing plans to get the cow herd through the winter. This seminar will focus on issues that are key to this process: weaning management, supplementation strategies and marketing considerations based on price outlook.

1-5 p.m.
Aug. 26, 2014
Noble Foundation Kruse Auditorium
No Registration Fee



Integrity Beef Alliance Meeting

The Integrity Beef Alliance is a cow/calf program with goals of increasing marketability of ranch-raised calves through increase in brand recognition, the addition of stacked value-added traits and volume sales of high quality calves. The summer Integrity Beef Alliance membership meeting will allow producers interested in or new to the program to meet seasoned program producers and to learn about program specifics and the protocol for the upcoming year.

5:30-8 p.m.
Aug. 26, 2014
Noble Foundation Pavilion
Registration Fee: \$30 for non-members



For more information or to register, visit www.noble.org/agevents or call Jackie Kelley at 580.224.6360. Preregistration is requested.

Pecan 101 Workshop

There are many aspects of pecan production, from planning to planting to marketing. This course will cover all aspects of annual production, including fertilization and pest management.

9 a.m.-4 p.m.

Sept. 16, 2014

Southern Oklahoma Technology Center

Ardmore, Oklahoma

Registration Fee: \$20, includes lunch

White-tailed Deer Management Workshop

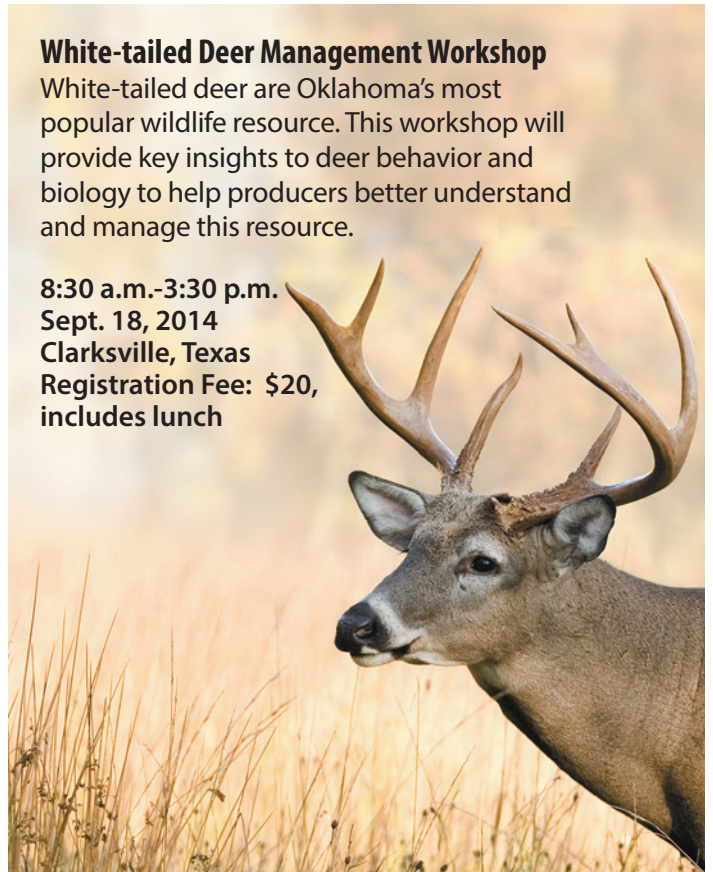
White-tailed deer are Oklahoma's most popular wildlife resource. This workshop will provide key insights to deer behavior and biology to help producers better understand and manage this resource.

8:30 a.m.-3:30 p.m.

Sept. 18, 2014

Clarksville, Texas

Registration Fee: \$20,
includes lunch



Fall Grazing Workshop

Join us at Collier Farms to discuss stockpiling forages for fall and winter grazing, forage gaps, weaned calf management, and winter cow nutrition.

9 a.m.-4 p.m.

Sept. 25, 2014

Collier Farms

503 County Road 1876

Chico, Texas 76431

Registration Fee: \$20, includes lunch

Guidelines facilitate drought management planning

by Hugh Aljoe / hdaljoe@noble.org

This article originally appeared in the June 2011 Ag News and Views newsletter.

Farmers and ranchers have become accustomed to managing through adverse conditions, and drought certainly falls into that category. During the last half of 2010 and the first few months of 2011, most producers have had to manage through drought conditions. Some have managed better than others. There is a common denominator for those producers who cope with drought better than others – they all have active drought management plans. Following is a set of guidelines for developing a drought management plan.

1. Know your expected forage production and annual rainfall patterns by season. As a rule of thumb for warm-season perennial pastures (native or introduced), about 70 percent of our annual forage production will occur by July 1 regardless of the total rainfall for the year. The most effective rainfall for our warm-season grasses occurs during the second quarter of the year (April through June), which is typically the most abundant rainfall quarter across the Southern Great Plains. Table 1 shows annual precipitation (including totals by quarter) from 1971 through 2000 for three selected southern Oklahoma counties extending on a line from east (Choctaw County), through Ardmore (Carter County), to west (Tillman County). About 30 to 37 percent of annual rainfall occurs during the spring quarter, in which 70 percent of our annual forage is produced. If precipitation is below average for more than one quarter, drought management plans should be implemented.

2. Establish conservative stocking rates based on average (or below) moisture conditions, providing an element of flexibility into the stocking rate. For example, with a spring-calving cow-calf operation, maintain cattle inventory at about 70 percent of potential stocking rate with the plan to retain ownership of all or some calves through the following spring if moisture conditions are average or better.
3. Identify target dates to assess pasture conditions and make strategic decisions to keep the operation aligned with the long-term management plan. The most critical date during the growing season is the end of the second quarter, when 70 percent of our forage production should have occurred. At this time, determine production to date and the variance from what was planned or expected. Another critical date is the end of the third quarter when forage reserves for the winter should be determined.
4. Apply spring fertilizer and herbicides to the most productive introduced grass pastures at the appropriate times. Even if early spring rains are absent, prepare to have fertilizer applied in early May since peak spring rainfall in the Southern Great Plains occurs in May and June.
5. Maintain a culling criteria list for marketing livestock if drought requires such action. The first category of animals to market in a drought is non-producing stock, such as yearling steers and replacement

Annual Precipitation (inches): 1971 - 2000					
County	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Total
Choctaw	9.98	14.24	9.64	13.77	47.63
Carter	7.04	12.63	9.10	9.61	38.38
Tillman	5.02	11.45	8.38	6.19	31.03

Percent of Annual Precipitation by Quarter: 1971 - 2000				
County	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Choctaw	21.0	29.9	20.2	28.9
Carter	18.3	32.9	23.7	25.0
Tillman	16.2	36.9	27.0	19.9

heifers (usually heaviest weights first – especially in a stocker operation), and open cows. The second category would be producing cows that have poor udders, eyes, feet, teeth, disposition, etc. The third category for culling would be less productive cows, non-uniform cows and the oldest cows.

6. Wean calves early. It is typically more cost effective to feed early-weaned calves through a drought than lactating cows. In addition, the maintenance requirements of a dry cow are about half that of a lactating cow.
7. If purchasing hay, purchase early in the growing season and only enough for winter use. Do not attempt to feed through a drought. If pasture can be located in another region within a reasonable trucking distance, it is often better to pay for a grazing lease for a short period of time (including hauling cattle to and from the alternate location) than to feed through a long drought spell.

There are no easy answers when it comes to dealing with drought. However, with a good drought management plan in place, a producer is better prepared to take action if drought conditions persist. ■

Growing-season prescribed burns offer many benefits

by Steven Smith / sgsmith@noble.org



The summer

months of June through September are often overlooked as months to conduct prescribed burns. Many land managers believe growing-

season prescribed burns are ineffective because green vegetation will not burn. However, burns conducted during these months can be very beneficial for improving wildlife habitat, livestock forage and brush management. Prescribed burns conducted when herbaceous vegetation (grasses and forbs) is actively growing are called growing-season prescribed burns.

Like dormant-season burns, growing-season prescribed burns rely on last year's vegetative growth as fine fuel to conduct the burn. When ample dead fine fuel is present, green herbaceous vegetation will burn. This is why when planning a dormant- or growing-season prescribed burn, a land manager must leave adequate herbaceous vegetation in the planned burn unit. This means the area should only be grazed lightly, if at all, and haying or mowing should not be allowed during the previous growing season.

Another common belief is that a prescribed burn conducted this time of year will have a negative effect on the plant community. Many different plant communities across the country have evolved with fire, meaning the plants in these communities are well adapted to fire. This is especially true in many areas in the central, midwestern and southeastern states. Growing-season prescribed burns have many of the same benefits as dormant-season burns. These burns remove thatch (old dead vegetation), increase



Burned on June 22, 2012

sunlight to the ground and stimulate new growth which is high in quality and very palatable for wildlife and livestock. Growing-season prescribed burns can be effective at controlling encroaching brush such as Eastern red-cedar, winged elm, honey locust, pecan, etc. Growing-season prescribed burns are less intense than dormant-season burns but typically are more effective for woody plant control. This is achieved by the longer length of time the fire is burning brush as well as higher cambium (growing tissue) temperatures caused by the increased air temperature when the burn is ignited.

Using growing-season prescribed burns can extend land managers' burn opportunities. When conducting prescribed burns, land managers are restricted to certain weather conditions, smoke management and labor needs. Adding several more months to burn will allow greater flexibility to land managers' burn



August 24, 2012 (63 days post burn)

schedules. All too often, many land managers, including myself, are not able to complete all the scheduled dormant-season burns, causing these burns to be pushed off to next year or being burned when conditions are safe but not favorable to achieve the objective of the burn.

The likelihood of spot fires and escapes is reduced due to the amount of green vegetation and higher relative humidity which are typically present during the growing season.

When conducting growing-season prescribed burns, remember to use good smoke management practices. Growing-season prescribed burns can produce more smoke than dormant-season burns due to the amount of moisture in the growing herbaceous vegetation. In addition, closely monitor the crew. These burns are being conducted during the hottest months of the year. Bring plenty of water, and allow for adequate rest periods. ■

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EVENTS

Summer Prescribed Burn Workshop

Time: 8 a.m.-5 p.m.

Date: June 25-26, 2014

Location: Marietta High School cafeteria, Highway 77 S, Marietta, Okla.

No Registration Fee

A free lunch will be served.

Winter Pasture Stocker Seminar

Time: 1-5 p.m.

Date: July 15, 2014

Location: Southern Oklahoma Technology Center

2610 Sam Noble Parkway, Ardmore, Oklahoma

No Registration Fee

For more information or to register, please visit www.noble.org/agevents/ or call Jackie Kelley at 580.224.6360. Preregistration is requested.

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