Master Cattleman Quarterly

Oklahoma State University

Federal Programs to Assist in Flood Recovery

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Many Oklahoma counties have been affected by heavy flooding, hail and tornadoes. The full extent of the damage or how long it will take to recover isn't known yet. There are several federal disaster programs designed to aid in recovery for agricultural producers. Here we will highlight two programs that are relevant to cattle producers affected by flooding.

Livestock Losses

The Livestock Indemnity Program (LIP) is one of three primary emergency assistance programs for livestock producers. LIP provides indemnity payments for livestock deaths that exceed normal mortality rates as a direct result of an eligible loss condition, or the value loss of animals injured, but not killed, by an eligible loss condition and therefore sold at a reduced price. Eligible loss conditions include extreme or abnormally damaging weather, disease promoted by such weather, and attacks by animals reintroduced and protected in the wild by the federal government.

LIP payments are calculated by multiplying the national payment rate for each livestock category by the number of eligible livestock in excess of normal mortality in each category that died as a result of an eligible adverse weather event. Current national payment rates can be found on the FSA Livestock Indemnity Fact Sheet. For injured livestock due to an eligible loss condition, producers can be compensated for the difference between the national average payment and the payment received for the injured animal. There is no payment cap on LIP as of 2018.

To be eligible for LIP, the producer must have legally owned the livestock on the day the livestock died. Livestock must have been for commercial use only, with recreational and show animals being excluded from eligibility. The livestock must have either died or been injured in above normal rates of mortality or injury due to an eligible loss condition, such as the ones described above. Producers have up to 60 days after an eligible loss condition to apply for a LIP payment, and proof of death must be included. This may mean pictures or a veterinarian inspection. Contact your local USDA FSA office as soon as possible to determine the appropriate reporting requirements for your specific situation.

For more information: **https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/livestock-indemnity/index**

Land Rehabilitation and Mortality Management

The Environmental Quality Incentives Program (EQIP) is a voluntary conservation program that assists farmers, ranchers and forest landowners with financial and technical resources to improve conservation practices and environmental quality on land. Ranchers that own or rent rangeland and pasture land in disaster areas may be eligible for EQIP to help with soil erosion, weed proliferation, water quality, and fence line damage from flooding. The program can also help manage appropriate disposal of livestock that have died due to flooding, including transportation costs, but may require some additional information and waivers. If ranchers already have an EQIP contract in place, the contract may be amended to cover rehabilitation costs, but new contracts may be possible under a special EQIP signup at the local office.

For more information**:** **https://www.nrcs.usda.gov/Internet/FSE_MEDIA/nrcseprd1429025.pdf**.

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USDA Information and Tools

USDA recently sent out information on disaster programs available. "FSA has a variety of disaster assistance programs to support farmers and ranchers through times of adversity," said SED Scott Biggs, State Executive Director for the FSA in Oklahoma. "Once you are able to evaluate your losses, it is important to contact your local FSA office to report all damages and losses and learn more about how we can assist, as soon as possible."

USDA offers a disaster assistance discovery tool that walks producers through five questions to help them identify personalized results of what USDA disaster assistance programs meet their needs. For more information on disaster assistance programs, contact your local USDA service center or farmers.gov/recover.

Other programs are available for flooding on cropland, forest land, and orchards/vineyards.

Oklahoma's Agricultural Pastureland Market Show Stability

Roger Sahs, Associate Extension Specialist, OSU, Agricultural Economics Department

The latest trends and patterns in Oklahoma's agricultural real estate landscape have been updated through 2018 and can be found at http://agecon.okstate.edu/ oklandvalues/ Statewide statistics, regional comparisons, and county summaries are presented in chart and tabular form. Per acre values shown for cropland and pasture are the averages of tracts having 85%+ cropland and pasture, respectively. The Farm Credit Associations of Oklahoma provided information on 1405 sales tracts that were considered representative of the 2018 agricultural land market. These market-based estimates provide a perspective into the characteristics of recent sales as well as benchmark indicators for studying trends over time.

The recent performance by the livestock economy (namely cattle) and future earnings expectations carry a great deal of weight on the pastureland market in Oklahoma. Pasture values grew a modest 1.8% last year on top of the 1.9% bump in 2017. The herd expansion that Oklahoma experienced over the past several years led to a healthy demand for forage-based tracts. However, given the recent slowdown in herd expansion and with the increased tonnage in beef supply, one might expect some downward pressure in the markets going forward. Fortunately, strong beef exports have provided support in the cattle markets and the condition of the state's forage base looks very good at this point. In addition, returns in the cow-calf sector are expected to improve going into 2020, according to the Livestock Marketing Information Center. These positive factors will lend additional stability to the land markets into the foreseeable future.

There are additional sources of land value information available that provide further insight into the markets. State level land values available from USDA-NASS are derived from annual surveys by landowners and producers as to where they think land values are going. In Figure 1, the OSU study and USDA pastureland trends are similar, but the price levels are different. Recall that the OSU estimates are developed from a market-based sample of the land transfer market in Oklahoma in contrast to the survey -based estimate provided by USDA. Typically around 80% of the pastureland tracts in the annual OSU study are less than 200 acres in size, priced several hundred dollars higher than larger sale tracts. This heavily influences the OSU average values. Another valuable source of land market information is from the quarterly Ag Credit Surveys provided by the Federal Reserve Bank of Kansas City, **https://www.kansascityfed.org/research/indicatorsdata/agcreditsurvey**. In conclusion, cattle prices and resulting farm income, and the financial health of prospective buyers will all determine pastureland trends in 2019 and beyond. Oklahoma's pasture values will react and adjust to these fundamentals and will likely stay on a positive course for the rest of this year.

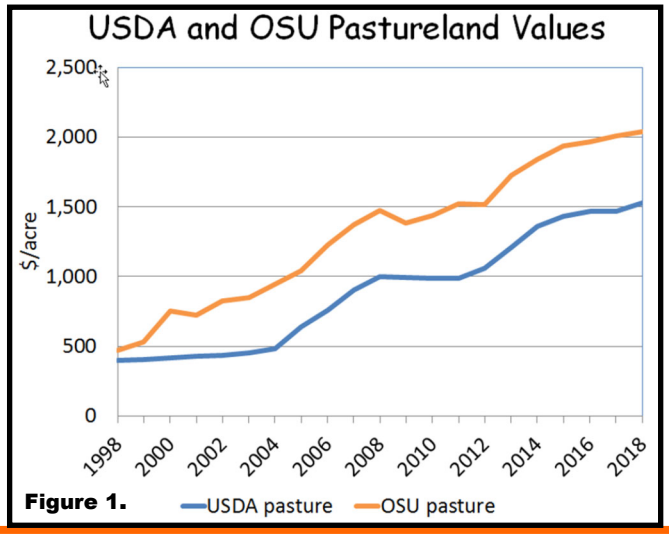

Figure 1.

Understanding Wet Hay

Glenn Self, OSU, Emeritus Extension, Department of Animal & Food Sciences

Frequent spring rains in Oklahoma have allowed cool season forages to grow in abundance. Even when the fields and meadows dry enough to cut standing forages, harvesting and baling cool season crops such as fescue and wheat hay can be a challenge during a wet spring. The timing of the rains can make it difficult for cattlemen that are trying hard to put quality hay in the bale for next winter's feed supply. All producers that harvest hay occasionally will put up hay that gets wet from time to time. Therefore, ranchers and hay farmers need to understand the impact of wet hay in the tightly wound bales.

Extra moisture in hay can cause heat inside the hay bale or hay stack. Heat produced by the bale comes from two sources: First, biochemical reactions from plants themselves as hay cures. (This heating is minor and rarely causes the hay temperature to exceed 110 degrees F. Very little if any damage occurs if the hay never exceeds 110 F.); Second, most heat in hay is caused by the metabolic activity of microorganisms. They exist in all hay and thrive when extra moisture is abundant.

When the activity of these microbes increases, hay temperature rises. Hay with a little extra moisture may not exceed 120 degrees F., whereas, wetter hay can quickly exceed 150 degrees. If the hay rises above 170 degrees, chemical reactions can begin to occur that produce enough heat to quickly raise the temperature above 400 degrees and the wet hay can begin to burn and cause fires. Be wary of the fire danger of wet hay and store it away from buildings and other "good" hay just in case this would occur.

Below is a table with moisture guidelines at time of baling. (Adapted from "Preventing hay fires" Martinson, University of Minnesota).

Several commercially produced hay temperature probes are available. Also, homemade probes can be constructed and will help monitor the heating in the hay bales. Information from the University of Kentucky (Overhults) discusses both commercial and homemade probes. Go the website: **https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1115&context=ky_alfalfa**

Heat damage causes hay to be less digestible, especially the protein. Heat damaged hay often turns a brownish color and has a caramel odor. Cattle often readily eat this hay, but because of the heat damage, its nutritional value might be quite low. Some ranchers have reported that "the cows ate the hay like there was no tomorrow, but they did very poorly on the hay".

Testing wet hay may be very important. Determining the internal temperature of large bales or stacks of hay should be done carefully. Make certain that checking the temperature in suspicious hay is done safely. Read the E-Extension Fact Sheet "Preventing Fires in Baled Hay and Straw" (**http://www.extension.org/pages/66577/preventing-fires-in-baled-hay-and-straw#.VV-WALco7L8**).

Testing the protein and energy content of stored wet hay will allow for more appropriate supplementation next winter when that hay is fed. Moldy hay could be a source of mycotoxins that could present several health problems for cattle. Many animal disease diagnostic laboratories can examine feedstuffs for mycotoxins or can recommend laboratories that do such testing.

Moisture ranges (%)	Comments
Less than 10	Too dry. Hay may be brittle and dusty
10 – 15	Recommended moisture range. Minimal risk of fire
16 – 20	Could mold. Slight risk of fire hazard
21 -25	Will likely mold. Moderate risk of fire hazard
Greater than 25	Severe heat damage likely. High risk of fire hazard

Dr. Whitworth has information about how excessive wet weather affects livestock. To see the entire video, check out Sunup's May 25 video, **http://sunup.okstate.edu/category/vet-scripts/2019/052519-vs/?searchterm=May%2025**

Efficacy of an Anthelmintic (Dewormer)

Barry Whitworth, DVM, Area Food/Animal Quality and Health Specialist for Eastern Oklahoma

According to the National Animal Health Monitoring System (NAHMS) Beef Cow-calf Study 2007-2008, 91.1% of operations listed efficacy as important or very important when choosing a deworming product. Because the efficacy of an anthelmintic is so important, it is vital for producers to know how to determine the effectiveness of a product.

In the study mentioned above, few producers (0.7%) rely on laboratory testing to evaluate the effectiveness of their deworming program. Instead most producers rely strictly on observations. 92.3% of producers included in the study make evaluations on the effectiveness of their deworming program based on the appearance of their cattle. 13.7% of producers evaluate their programs on whether their cattle achieve their expected performance. Another 3% rely on fecal consistency or the lack of diarrhea. All conclusions not based on scientific facts may lead to costly and misleading conclusions.

The most important consideration in any deworming program should be the efficacy of the anthelmintic that a producer uses. Any anthelmintic approved by the Food and Drug Administration (FDA) must demonstrate efficacy of 90% or greater for the specific parasite. This is determined by conducting trials where the number of parasites in non-treated cattle groups are counted and compared to the number of parasites in treated cattle groups. An approved drug must show a 90% or greater reduction in the number of parasites between the two groups.

Unfortunately, producers should not rely completely on choosing an FDA approved anthelmintic to ensure an effective deworming program. Parasites have begun to develop resistance to anthelmintics. The first case of resistance was discovered in 2002 in a stocker operation in the northern United States (Gasbarre et.al). The producer was experiencing decreased weight gains and gastroenteritis in his cattle even though the cattle were on a strategic parasite control program. Fecal samples confirmed that internal parasites were the cause, and additional testing confirmed that certain species of gastrointestinal parasites were not being eliminated at a 90% efficacy level. Since this initial case, other cases have been diagnosed.

There are ways for producers to assess whether their deworming programs are effective. One simple way is to run a fecal egg count reduction test (FECRT). When running this test, a producer must collect fecal material from the animal and have a fecal egg count performed prior to administering the anthelmintic. Ten to fourteen days later a second fecal egg count must be performed on the treated animal. FECRT is expressed as a percentage of the difference between the pre and post treatment egg counts. The following formula is used to express the results.

$$\frac{\text{FEC Pre Treatment} - \text{FEC Post Treatment}}{\text{FEC Pre Treatment}} \times 100 = \% \text{ Reduction}$$

If the FECRT is not 90% or greater, then resistance is developing in the herd.

If the FECRT is 90 to 100%, then the resistance in the herd is not-existent or very small. FECRT of 80 to 90% indicate that the deworming program is still effective, but that resistance is increasing. Production loses start becoming apparent as FECRT percentages move below 80% and become more apparent as the effectiveness of the anthelmintic moves closer to zero.

To do a FECRT on each animal in the herd would be cost prohibitive. Fortunately, a study demonstrated that composite fecal samples may be used to assess the effectiveness of an anthelmintic (George et.al). A producer could collect 20 random fecal samples from the herd before deworming the herd. He/she would submit those samples to his/her veterinarian or veterinary lab. The samples would be homogenized, and one fecal egg count would be performed. Ten to fourteen days later, 20 additional random samples would be submitted for a FEC. With the results of the two FEC, a FECRT could be performed to assess the effectiveness of the anthelmintic. This would save the producers money.

The results of the FECRT may demonstrate that the producer's parasite control program is working well, or it might indicate that changes need to be made. Whatever the results, monitoring the deworming program is vital for herd health and the economics of the operation.

For more information on FECRT or parasite control programs, producers should contact their local veterinarian or local Oklahoma Cooperative Extension Service Educator.

Recommended Management Practices for Summer Months

Full year's management guide calendar can be accessed at http://factsheets.okstate.edu/documents/ansi-3261-beef-cow-herd-calendar/.

July

Fall Calving

1. Wean calves and vaccinate as recommended in June
2. If not completed, pregnancy check cows and bred heifers, make culling decisions and vaccinate stockers and replacement heifers.
3. Place weaned calves on good quality pasture and watch closely for health problems.

Spring Calving

1. Remove bulls after 70 to 90-day breeding season.
2. Continue to creep graze calves on sudan pasture.
3. Watch the herd closely for health problems.
4. Continue creep for calves (OK Silver).
5. Deworm intensively grazed cows, if needed.
6. Body condition score cows and if thin, consider weaning calves early and/or supplementing cows.
7. Complete marketing or retained ownership plan for calves.

General Recommendations:

1. Water is extremely important in hot weather. Make routine checks of the water supply.
2. If additional summer grazing or hay is needed, fertilize Bermudagrass with 40 to 60 lbs. N/acre.
3. Harvest sudan and sudan hybrids for hay in the boot stage (normally three to four feet in height). Top dress with nitrogen to promote growth. It is a good idea to run a routine nitrate test on a field before harvesting hay.
4. Treat for cattle grubs after heel fly activity ceases and before larvae reach the back, between July 1 and October 1.5
5. Continue fly and tick control program.
6. Continue anaplasmosis control program.
7. Remove intensive early stocking (IES) calves from native grass by July 10.
8. Supplement stockers and replacement heifers with OK Gold feed.

August

Fall Calving

1. Continue the newly weaned stockers on the highest quality pasture available.
2. Observe all groups of cattle closely for health problems.
3. Identify purebred herds and test stations at which you want to look for herd sires. Check sale dates and review performance criteria.

Spring Calving

1. Continue to creep graze calves on sudan or other high quality pasture, if available. Manage (rotationally graze or hay) sudan so that it does not become mature and of low quality.
2. Observe the herd closely for health problems such as pinkeye and foot rot.
3. Continue creep feeding program for calves (OK Silver).
4. Evaluate body condition of young cows. Wean calves if body condition score is 4 or lower.

General Recommendations:

1. Continue fly, tick, and anaplasmosis control programs.
2. Plan winter pasture program. Prepare seedbeds for small grain pastures and fertilize according to soil test.
3. Treat cattle for grubs after heel fly activity ceases, between July 1 and October 1, before larvae reach the back.
4. Identify pasture weed problems to aid in planning control methods needed next spring. Adjust stocking rate and grazing system to control undesirable plants and forage accumulation for prescribed fire.
5. Evaluate cool-season pastures, commercial supplements or bulk feed commodities as alternatives for supplemental feed in winter.
6. Continue OK Gold supplementation for stocker and replacement heifers grazing moderate to low quality pasture.

How Does Bovine Respiratory Disease in the Stocker Receiving Pens Affect Subsequent Stocker and Finishing Performance

Paul Beck, Associate Professor, OSU, Department of Animal & Food Sciences

Health of incoming cattle to backgrounders and feedlots continues to be a major issue. Today we have better vaccines, better antibiotics, and better genetics than ever before, but the health outcomes, sick pull rates and mortality, have not improved over the last 30 years. Dr. Dan Thompson from Kansas State University explained, "Animals get sick due to an overwhelming exposure to a pathogen or a suppressed immune system. Many times, disease infections can occur in one segment of the industry but not present clinically until the cattle are stressed during transfer to a subsequent beef production segment in the supply chain."

Dr. Blake Wilson of the Oklahoma State University Department of Animal and Food Sciences, conducted finishing research with calves that were untreated for bovine respiratory disease (BRD), or had been pulled and treated once, twice, or three or more times. The results indicate the expense BRD has on performance, carcass quality, and economics of the finishing enterprise. Just over 500 high risk calves weighing 478 pounds were received at the Oklahoma State University Willard Sparks Beef Research Center and after a 60 day receiving period 174 of them were finished on high concentrate diets. The bodyweight at the end of the receiving phase decreased due to the incidence of BRD, and decreased more as cattle had to be retreated. At the start of the finishing phase, cattle that had never been treated for BRD weighed 713 lbs, cattle that had been treated once weighed 697, cattle treated twice for BRD weighed 628, and cattle treated 3 or more times weighed 573 lbs. Even though average daily gains were higher during finishing for cattle treated for BRD, this compensatory gain did not fully make up for the earlier shortfall. The calves treated 3 or more times for BRD made up over 83% of the reduced weight by slaughter but were on feed 15 days longer. Hot carcass weights of cattle treated once were 7 pounds lighter than untreated calves, while those treated twice had 26 pounds and those treated 3 or more times had 42 pound lighter carcasses. The percentage choice decreased from 70% for untreated calves to 36% as treatments for BRD increased. Total cost of BRD (including labor, cost of antibiotic, reduced production and carcass quality, and increased days of feed) was $37/head, $166/head, and $230/head for cattle treated once, twice, and three or more times.

Costs in the stocker industry can be just as big. An analysis was conducted including 12 stocker receiving trials from Oklahoma, Arkansas and Mississippi where over 1,300 steers and bulls were received and followed through grazing on cool-season pastures. The average BRD morbidity was 57% and 25% were pulled twice and 9.5% pulled and treated three or more times. During receiving, untreated calves gained 2.3 pounds per day, daily gains decreased to 2.1, 1.6, and 1.5 pounds/day for calves treated once, twice, or three or more times. Daily gains on pasture were not affected for calves treated only once (2.2 lbs/day), yet pasture gains of calves treated 2 or more times decreased to 2.0 lbs/day. During the entire ownership period (Receiving + Grazing) daily gains were 2.3 pounds for untreated, 2.1 for those treated once, 1.8 for those treated twice, and 1.7 for those treated three or more times. These calves were healthy when placed on grass, any calves that appeared to be chronically morbid were not included in this analysis, even yet, calves that were treated for BRD two or more times were affected significantly during grazing and over the ownership period.

When health and finishing performance of calves that were received at the OSU Willard Sparks Beef Center then grazed wheat pastures at the OSU Marshall Wheat Pasture Research Unit for 86 days was tracked it showed the long-term impacts of cattle health. Bull and steer calves weighing 498 pounds went through a 35 day receiving period. There was 66% BRD morbidity and 31% were pulled and treated twice for BRD. When cattle were tracked from receiving, through a stocker grazing period, and into the finishing; performance during the finishing phase was not affected by previous BRD incidence, but lifetime performance was reduced with increasing BRD treatments as was hot carcass weight, rib eye area and marbling.

Performance reductions due to health issues do not generally result in compensatory gain during the stocker grazing period and result in lifetime reductions in performance and beef production. Health will continue to be a problem for calves sold after simply removing calves from dams with no weaning or preconditioning process. Preconditioning programs where calves are weaned for at least 45-days, dewormed and given clostiridal and BRD vaccinations has been proven to decrease BRD morbidity by 90%.

How Does Bovine Respiratory Disease in the Stocker Receiving Pens Affect Subsequent Stocker and Finishing Performance (cont.)

Table 1. Effect of treatment for bovine respiratory disease during receiving on finishing performance of steers (Wilson et al. Professional Animal Scientist; 33: 24-36).

	Number of Times Treated for BRD			
	0x	1x	2x	>3x
Initial bodyweight	713	697	628	573
Slaughter bodyweight	1,250	1,261	1,234	1,217
Average Daily Gain	3.1	3.3	3.1	3.4
Days on Feed	174	170	193	189
Hot Carcass Weight	820	813	794	778
% Choice or greater	70	56	60	36
Cost of BRD/calf	-	$37	$166	$230

Table 2. Effect of treatment for bovine respiratory disease during receiving on grazing performance during the stocker phase.

	Number of Times Treated for BRD			
	0x	1x	2x	>3x
Average Daily Gain, lb/d				
Receiving	2.3	2.1	1.6	1.5
Pasture	2.3	2.2	2.0	2.0
Overall	2.3	2.1	1.8	1.7

Table 3. Effect of treatment for bovine respiratory disease during receiving on grazing and finishing performance.

	Number of Times Treated for BRD		
	0x	1x	2x
BRD treated, % of calves	34	35	31
Average Daily Gain, lb/d			
Receiving	3.0	1.8	1.0
Pasture	2.3	2.2	2.3
Finishing	3.7	3.8	3.6
Overall	3.6	3.5	3.3
Hot Carcass Weight	878	857	831

Upcoming Oklahoma Quality Beef Network 2019-2020 Sales Dates

Location	Sale Date	Must Wean By	Location	Sale Date	Must Wean By
OKC-West	11/5/2019	9/21/2019	Blackwell	11/23/2019	10/9/2019
Cherokee	11/6/2019	9/22/2019	OKC-West	12/3/2019	10/19/2019
Woodward	11/7/2019	9/23/2019	McAlester	2/18/2020	1/4/2020
McAlester	11/12/2019	9/28/2019	McAlester	4/21/2020	3/7/2020
Enid	11/21/2019	10/7/2019	McAlester	6/9/2020	4/25/2020

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MASTER CATTLEMAN

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