

TIMELY TOPICS

OSU EXTENSION - NORTHEAST DISTRICT
October 2023 – Volume 43 – Issue 10



EXTENSION

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Home Grown – Bringing Container Plants in for the Winter

Laura Payne, Horticulture Educator, Payne County

If you haven't already started the process of preparing your outdoor container plants to come inside for winter, you still have a little time to do so.

The first step is to move those plants that have been growing in full sun to a partially shaded location so they can begin adapting to lower indoor light. Plants need time to acclimate to the different light levels as well as temperature and humidity.

Another very important step is to rid your plants of any pests that can become a problem indoors. Spider mites and mealy bugs are two very difficult insects to control outside, let alone inside, where they don't have natural predators. A heavy mealy bug activity is easy to spot because of the presence of a white, cottony mass, oftentimes found on the underside of leaves on the stem or even on the lip of the container. The cottony mass covering the mealybug is what makes control so difficult as it protects the insects and their eggs from insecticides. Applying rubbing alcohol with a Q-tip works for smaller plants. For larger plants, treat the plant thoroughly with an insecticide labeled for control of mealy bug. Complete coverage is very important, paying close attention to the undersides of the leaves and the container. Follow label directions closely, giving special attention to the suggested retreatment interval.

Spider mites are also a problem, partly because they are very difficult to see with the naked eye. Most gardeners realize they are present only when the webbing becomes visible. By this time, the mite population is well established, and control becomes more difficult. Spider mites also have a way of protecting themselves by using its very fine webbing. Before bringing plants indoors, check for spider mite presence by patting a few leaves sharply on a piece of plain white paper. Live mites will fall off and appear as very small specks. If you look closely, you can see them crawling around on the paper. To control spider mites, prune off any plant parts that have webbing or a large population of mites. Then use a water hose and spray off the leaves with a good blast of water. Lastly, follow up with an insecticide labeled for this pest. Please note that each of these pests is difficult to treat and all common insecticides will not be labeled for control of both. Please follow the same protocol as instructed for mealy bugs until you are certain control has been achieved.

One last pest I want to warn you about is the good ole garden snake. Believe it or not, snakes will curl up in containers and just might make the trip indoors. So, check your plants and containers thoroughly before bringing them indoors or even into the garage to over winter.

For more information on this or any other horticultural topic, you can contact your local OSU Extension Office.

Lead Toxicity in Cattle

Barry Whitworth, DVM, Senior Extension Specialist, Department of Animal and Food Sciences

Lead is one of the most common causes of poisoning in cattle. Most clinical signs of lead poisoning are usually associated with the nervous system and the gastrointestinal tract. The most common sources of lead are improper disposal of car and farm machinery batteries and used motor oil. Other sources include old structures with lead paint, linoleum, lead pipes, and grease from machinery. Since calves are more curious and prone to nibble or lick objects, poisoning is seen more frequently in calves than older cattle.

Most animals have a background level of lead. Toxicity occurs when the background level plus the amount ingested reaches a toxic level. Doses of 50 to 400 mg/kg may kill a calf. Higher doses (600 to 800 mg/kg) are required to kill adult cattle. Cattle that consume 7 mg/kg a day will eventually die from lead toxicity.

Clinical signs of lead toxicity appear acutely. Many times, producers just find dead animals. Most clinical signs observed are associated with the neurological system. One common sign is blindness. Producers may find a calf walking aimlessly and/or walking into objects. Other signs are circling, head pressing, ataxia, muscle tremors, and convulsions. Occasionally, gastrointestinal system signs such as colic, anorexia, diarrhea, grinding of teeth, and frothing of the mouth precede the nervous signs.

Clinical signs of lead poisoning are similar to other nervous and gastrointestinal diseases. Some diseases that can be confused with lead poisoning are polioencephalomalacia, nervous coccidiosis, tetanus, rabies, and listeriosis.

A tentative diagnosis of lead poisoning in cattle is based on clinical signs and finding a source of lead. The tentative diagnosis should be confirmed by analyzing blood and/or liver and kidney tissue analysis.

Treating cattle with lead poisoning is not recommended because it is seldom successful. A second reason for not treating cattle is the amount of labor and drugs required make it a poor economic choice. Also, most of the drugs used to treat lead toxicity are not approved for use in food animals. Lastly, public health needs to be considered. Cattle with lead toxicity will have tissue residues of lead that remain for a long period of time. Cattle with lead poisoning should never be used for food since no safe blood levels exist for humans according to the Center for Disease Control and Prevention. Children are especially susceptible to the effects of lead exposure.

Whether treating or not treating animals exposed to lead, producers should remove all cattle from the area associated with the lead toxicity until the source of lead can be found and removed. If treatment is considered, a producer should start treatment as soon as possible. A veterinarian will administer drugs to bind the lead in the blood and it will be expelled through the digestive tract. Thiamine is also recommended to reduce lead in tissues as well as lessen clinical signs. Treatment will be required for several days. When dealing with young animals exposed to lead, it might be wise to treat all calves in the herd when one is diagnosed with lead poisoning.

Lead poisoning can be prevented by avoiding contact with lead containing materials. Lead containing materials such as batteries and used motor oil should be disposed of properly. Old dump sites should be cleaned up. Old barns and outbuildings should be checked for lead paint and dealt with appropriately if lead is found.

For more information about lead poisoning in cattle, cattle producers should consult with their veterinarian and/or contact their Oklahoma State University Cooperative County Extension Agriculture Educator.

References

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Blakley, B., R. (2022). Lead poisoning in animals. Merck Veterinary Manual. Accessed September 29, 2023, at: <https://www.merckvetmanual.com/toxicology/lead-poisoning/lead-poisoning-in-animals>.

Cowan, V., & Blakley, B. (2016). Acute lead poisoning in western Canadian cattle - A 16-year retrospective study of diagnostic case records. The Canadian veterinary journal = La revue veterinaire canadienne, 57(4), 421–426.

Rebhun, J., L. (1986). Neurological diseases in food animals. In J. L. Howard (Ed.), Current veterinary therapy 2 food animal practice (pp. 856-857). W. B. Saunders Company.

Nutrition Cost per Day

Earl H. Ward, Area Livestock Specialist

Livestock production costs are very similar to the waist band on an aging man’s trousers, they just keep going up! As these costs increase, we need to be careful how we calculate those costs. When pricing nutrition inputs, many times it is priced as cost per bale or cost per ton, but ultimately, we need to consider the cost per day.

Recently at the Adair County Extension 3rd Annual Pasture Tour the OSU Extension Educator, Jennifer Patterson, had five different hay bales for producers to evaluate. The producers had to make a choice on which hay they would rather purchase based on visual appraisal and price. The prices range from \$35/bale to \$75/bale and sizes ranged from 4x5 to 5x6. After they made their choices, we provided them with the information of bale weights and quality. This information would allow us to calculate cost per ton of forage along with cost per pound of crude protein (CP) and cost per pound of total digestible nutrients (TDN). All this information is important to know and understand but again the question is “which forage would be the cheapest per day?”

	\$/bale	Wt	\$/ton	% DM	% CP	% TDN	lb DM	lb CP	lb TDN	\$/lb CP	\$/lb TDN
#1 Bermuda/Crabgrass	\$75	1620	\$92.59	89.2	11.1	59.3	1445	160	857	\$ 0.468	\$ 0.088
#2 Sorghum/Crabgrass	\$45	1150	\$78.26	87.1	8.2	55.6	1002	82	557	\$ 0.548	\$ 0.081
#3 Mix Hay	\$35	788	\$88.83	91.2	8.8	58.5	719	63	420	\$ 0.553	\$ 0.083
#4 Johnsongrass	\$50	972	\$102.88	91.4	12.6	59.6	888	112	529	\$ 0.447	\$ 0.094
#5 Mix Hay	\$60	1345	\$89.22	85.6	10.7	64.6	1151	123	744	\$ 0.487	\$ 0.081

If we were just feeding the forages to our 1200-pound cow while she is in mid to late gestation, then the cheapest cost per day would belong to Hay #2 with a cost of \$1.19/day while she is consuming an estimated 30.3 lbs. of hay per day. Since all these forage options will meet a dry cow’s nutrient requirements the cheapest forage is easily calculated. However, once our females calve and her nutrient requirements go above what some of these forages can provide, then more calculations will be warranted.

A newly lactating cow’s dry matter intake will increase along with her nutrient requirements. Hays #2 and #3 do not have enough nutrients to meet a lactating cow’s requirements and therefore will require additional supplement to make up for the difference. In this scenario, the hay that was the cheapest during gestation is now the most expensive during lactation. For hay #2, the female will now be consuming 34.4 pounds of hay but she would also require 4.67 pounds of a 20% supplement (\$340/ton) for a total cost per day of \$2.14 (\$1.35 for hay and \$0.79 for supplement). The cheapest nutritional option during lactation would be purchasing Hay #1 which was not the cheapest per bale or even the cheapest per ton.

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Table 2.

		Gestating	Lactating			Total
		\$/day Hay	\$/day Hay	lb 20%/day	\$/day Supp	
#1	Bermuda/Crabgrass	\$1.56	\$1.68	0	\$0.00	\$1.68
#2	Sorghum/Crabgrass	\$1.19	\$1.35	4.67	\$0.79	\$2.14
#3	Mix Hay	\$1.29	\$1.48	3.67	\$0.62	\$2.10
#4	Johnsongrass	\$1.69	\$1.82	0	\$0.00	\$1.82
#5	Mix Hay	\$1.56	\$1.69	0	\$0.00	\$1.69

Now that we have evaluated our forage options, let’s evaluate our supplementation options. Which supplement you choose to feed should be based off forage quality and current supplement prices. The best supplement to match your forage should not be based on cost per ton but again cost per day. You can do the calculations to find the cheapest source of protein or the cheapest source of energy, but it ultimately comes down to how many pounds of that supplement it takes to meet the animal’s requirements.

Again, if we were feeding hays #1, #4, or #5 we would be meeting even a lactating cow’s requirements with the forage alone and would not require any supplementation. For hays #2 and #3 additional supplementation is required and for the supplements that are available in this scenario the most expensive supplement per ton is the cheapest supplement per day. The 37% crude protein feed priced at \$455 per ton reduces the costs per day from the 20% supplement priced \$115/ton cheaper by \$0.17 and \$0.19 per day for hay #2 and hay #3, respectively.

Table 3.

	\$/ton	\$/lb CP	\$/lb TDn	Hay #2		Hay # 3	
				lb/day	\$/day	lb/day	\$/day
14%	\$300	\$1.21	\$0.25	6.8	\$1.02	5.3	\$0.80
20%	\$340	\$0.94	\$0.28	4.7	\$0.79	3.7	\$0.62
37%	\$455	\$0.62	\$0.34	2.7	\$0.62	1.8	\$0.41
Corn	\$300	\$1.85	\$0.19	10.4	\$1.55	8.1	\$1.22

So just like the corduroy pants hiked up and supported by suspenders on the aging gentlemen, production costs are not going to be coming down anytime soon. So let’s gather some forage samples for analysis, visit with your OSU Extension Educator, and do the needed calculations to figure out to which options provide the cheapest cost per day.

Costs that Move with Cattle Prices

Scott Clawson, Area Ag Economics Specialist

The strong run in cattle prices has been a welcome change for cattle producers. It has provided a much-needed distraction from drought conditions and rising input costs. Moving into this segment of the cattle cycle where supply is tight and prices are elevated, there may be interest expanding outside the normal course of operation. There are two parts of the budgeting process may be easily overlooked in the planning process.

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The first is interest expense. The utilization of a revolving credit line in 2023 will be more expensive this year than any time in recent memory. The two factors that will create this are the interest rate and the price level of the inputs we use

Interest Trend			
	September 2021	September 2022	September 2023
Weight	450	450	450
¹ Purchase \$/#	\$ 1.77	\$ 2.10	\$ 3.00
Calf Purchase	\$ 797	\$ 945	\$ 1,350
² Interest Rate	5.70%	6.53%	8.56%
Interest/hd	\$ 45	\$ 62	\$ 116
Months drawn	6	6	6
Adjustment	0.5	0.5	0.5
Cost/hd	\$ 22.70	\$ 30.85	\$ 57.78

¹ Purchase price estimates based on USDA-AMS Report 1931 for the respective year.
² Simple average from Oklahoma interest rates on the Federal Reserve Bank – Kansas City Ag Credit Survey

the line of credit for. Predicting the interest rate market, like with the commodity markets, is problematic. Yet, it seems to be difficult to find a motive for rates decreasing in the near term. The increased prices of the items we put on the line credit intensify the impact of higher interest rates. A very practical example would be buying stocker cattle. Buying a 450-pound steer in September of 2021 versus 2023, financed for 6 months, borrowing his full value, we find that the interest cost of this steer is more than double what it was previously. Specifically, \$57.78 per head will need to be included as the operating interest expense. Even if the operating line is only used for feed, hay, etc., be prepared to cover the higher interest rate.

Death Loss Trend			
	April 2022	April 2023	April 2024
Weight	800	800	800
Sales \$/#	\$ 1.57	\$ 1.96	\$ 2.60
Total	\$ 1,256.00	\$ 1,568.00	\$ 2,080.00
Death Loss	2%	2%	2%
Cost/hd	\$ 25.12	\$ 31.36	\$ 41.60

Another cost category that moves in step with cattle prices is the cost of death loss. An unfortunate reality in the livestock business is that we can't save all of them. In 2023, the cost of death loss will add insult to injury. Death loss calculations have been increasing the past several years in stride with cattle prices. In the past two years, a two percent death loss calculation has increased from \$25.12 to \$41.60 per head. This is simply due to the sheer value increase of the cattle year over year.

At the end of the day, these two expenses can really sneak up on us. Prices have moved to historic levels. However, margins are still very important as we move past the base cow-calf system. Be mindful of the interest, death loss, and other input costs as we look to capitalize on the extraordinary markets.

LRP Nuts and Bolts

Scott Clawson, Area Ag Economics Specialist

What is it?

LRP stands for Livestock Risk Protection. It is an insurance policy that can be purchased from insurance agents around the state. It is like crop insurance as it is a subsidized insurance product from the USDA Risk Management Agency.

What does it do?

It protects against falling cattle prices, specifically on the CME Feeder Cattle Index (more on this below) for feeder cattle. It is a way to establish a price floor. If prices go higher, the producer will benefit from selling in a stronger market. The producer would just be responsible for the cost of the insurance.

Why use it now?

As cattle prices move to historic highs, the more important it becomes to secure a price level in case of a market downturn.

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How does it work?

Producers will make a series of selections (following table). Based on these selections, the producer will have a Coverage Price. At the conclusion of the policy, if the CME Feeder Cattle Index (or adjusted index as discussed below) is less than your coverage price then a payment is initiated. A significant strength of the product over other similar products is that it is a per-head product.

Number of head:	1-12,000 head per policy
Sex:	Heifers / Steers
Projected Weight:	Specific avg weight within these ranges (100-599 pounds or 600-1,000 pounds)
Coverage Level:	70-100% of the expected value (expected value determined by RMA)
Timeframe:	13-52 weeks in roughly 4-week increments

Where can I sell cattle?

Cattle can be sold wherever is preferred by the cattle owner. The determination on whether an indemnity is paid is based on the CME Feeder Cattle Index, not the actual price of the cattle sold.

How is it determined if a payment will be received or not?

At the end of the policy period the CME Feeder Cattle Index will be referenced and adjusted based on the specific categories. Steers Weight 1 (under 600 pounds) is adjusted to 110% of the index. Heifers Weight 2 (under 600 pounds) is adjusted to 90% of the index. Steers Weight 2 and Heifers Weight 1 are not adjusted. If this index price is less than your coverage price, an indemnity is due. If it is higher, no indemnity is paid.

Note: Adjustments are made to accommodate the generally correct assumptions that steers bring more than heifers and light cattle bring a higher price per pound than heavier cattle. See the CME Feeder Cattle Index calculation below.

What is the CME Feeder Cattle Index?

“The Index is a seven-day weighted average and is defined as the total dollars sold during the seven-day period divided by the total pounds of feeder steers sold during the same seven-day period.”

<https://www.cmegroup.com/trading/agricultural/files/understanding-cme-feeder-cattle-index.pdf>

- Steers only
- No dairy, brahman, exotic characteristics
- 12 states
- Medium& Large frame score
- #1 and #1-2 muscle score
- 700-900 pounds

A benefit of the CME Feeder Cattle Index in this setting is that it is based on cash transactions happening in Oklahoma. Also, the high number of cattle that are marketed in Oklahoma provides a strong tie to Oklahoma prices.

When can I sell cattle?

Cattle can be sold within 60 days of the end of the policy. However, your policy will still settle at the end date. Cattle ownership can also be retained as the cattle do not have to be sold.

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What if I miss my weight?

Adjustments are made to the number of marketable livestock. The following example is from the LRP Handbook that can be found at <https://www.rma.usda.gov/-/media/RMA/Handbooks/Privately-Developed-Products---20000/Livestock-Risk-Protection/2024-20010-1-Livestock-Risk-Protection.ashx?la=en> .

1. 100 head of steers were insured with a projected ending weight of 700 pounds (70,000 total pounds).
2. 100 head were sold with an average weight of 525 pounds or 52,500 pounds total.
3. No extraordinary circumstances were able to be established such as drought, etc.
4. 100 head is multiplied by 600 as that is the minimum weight for the Weight 2 designation, which is 60,000 pounds.
5. 52,500 pounds (our actual weight) is subtracted from 60,000 pounds (the minimum weight) leaving 7,500 pounds below our targeted weight.
6. 7,500 pounds divided by 700 pounds equals 11 head, rounded.
7. The marketable livestock is 89 head instead of 100.

If an extraordinary circumstance can be established (like drought), then these adjustments are not done.

Also, the Weight 1 option (100-599 pounds), both steer and heifer, have a minimum weight of 100. Logically, it would be very difficult to miss weight substantially in this category without substantial mortality.

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Value of Gain Calculation					
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OK Weighted Average Report 9/29/23					
Weight	\$/lb	Value/hd	Added lb.	Added \$	\$/lb Added
321	\$ 3.0771	\$ 987.75			
379	\$ 3.1439	\$ 1,191.54	58	\$ 203.79	\$ 3.51
425	\$ 3.0402	\$ 1,292.09	46	\$ 100.55	\$ 2.19
480	\$ 2.8629	\$ 1,374.19	55	\$ 82.11	\$ 1.49
534	\$ 2.8490	\$ 1,521.37	54	\$ 147.17	\$ 2.73
576	\$ 2.7895	\$ 1,606.75	42	\$ 85.39	\$ 2.03
622	\$ 2.6353	\$ 1,639.16	46	\$ 32.40	\$ 0.70
671	\$ 2.5809	\$ 1,731.78	49	\$ 92.63	\$ 1.89
721	\$ 2.5730	\$ 1,855.13	50	\$ 123.35	\$ 2.47
779	\$ 2.5509	\$ 1,987.15	58	\$ 132.02	\$ 2.28
834	\$ 2.4663	\$ 2,056.89	55	\$ 69.74	\$ 1.27
864	\$ 2.4377	\$ 2,106.17	30	\$ 49.28	\$ 1.64
915	\$ 2.3723	\$ 2,170.65	51	\$ 64.48	\$ 1.26
Long Stocker Run		Short Stocker Run		Heavy Stocker Run	
<i>Starting</i>		<i>Starting</i>		<i>Starting</i>	
321	\$ 987.75	321	\$ 987.75	622	\$ 1,639.16
<i>Ending</i>		<i>Ending</i>		<i>Ending</i>	
915	\$ 2,170.65	534	\$ 1,521.37	915	\$ 2,170.65
<i>Total Gain</i>	<i>Δ Value</i>	<i>Total Gain</i>	<i>Δ Value</i>	<i>Total Gain</i>	<i>Δ Value</i>
594	\$ 1,182.91	213	\$ 533.62	293	\$ 531.50
VOG		VOG		VOG	
\$ 1.99		\$ 2.51		\$ 1.81	

* very light test on lighter calves



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