

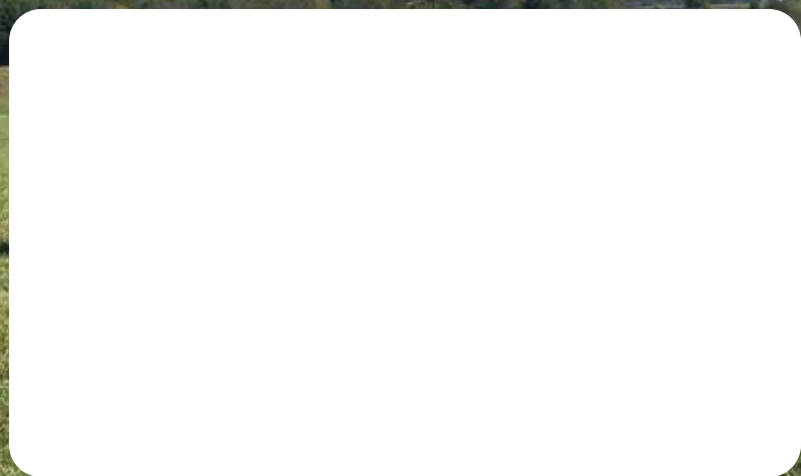
SINCE



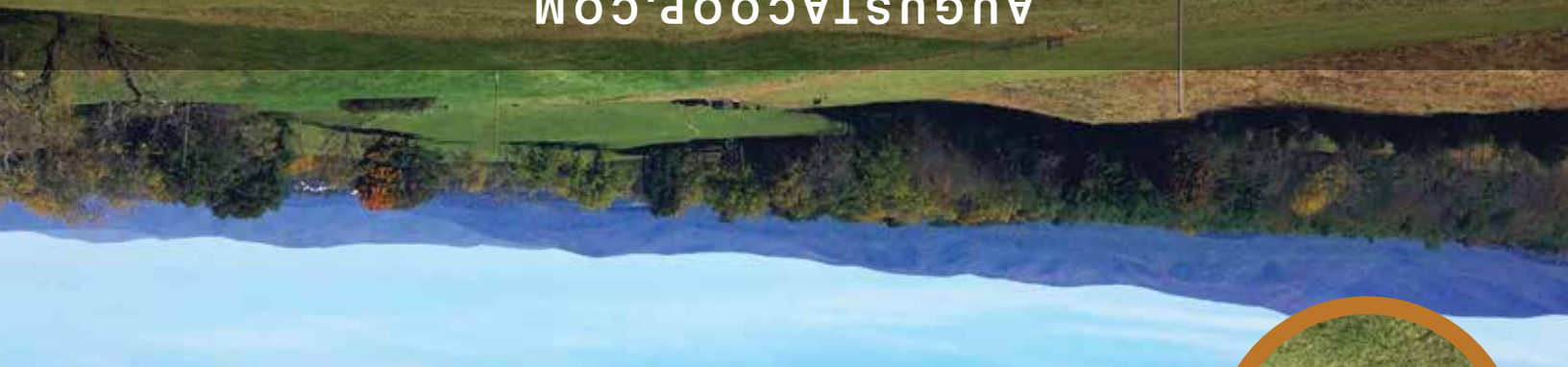
1929

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AGRONOMY & BEEF BULLETIN  
August 2023



1929



SINCE

# MATCH HERD NEEDS TO ANTICIPATED FORAGE SUPPLIES

Dry weather and short pastures have reduced forage supplies, prompting livestock producers to ponder “could have, would have, should have” scenarios, says University of Missouri Extension livestock specialist Eric Meusch.

Producers should try to match their herd needs to anticipated forage supplies, Meusch says. This requires planning before a drought. Many factors will be out of your control if you wait until drought actually hits.

During drought, producers have control over some factors but not others. It is important to manage controllable areas to meet animal needs and be profitable. Good grazing systems give producers flexibility to decide when and where livestock grazes, he says.

Fencing and proximity of available water are important factors. Properly managed systems let producers, rather than the cows, control grazing heights of pastures, rest periods and rationing of grasses.

The most critical factor in pasture management during a drought is understanding and estimating proper stocking rates, he says. Stocking rate is a measure of forage demand. Carrying capacity is a measure of forage supply. Weather and past management determine carrying capacity.

How do you know when your herd is overstocked? Stocking for a year with “average” rainfall basically means you will be overstocked half of the time, Meusch says. By stocking for 90% of average, you risk being overstocked one out of four years. Stocking at 80% of average reduces the risk of being overstocked to one of every eight years. By using a conservative stocking rate, a producer reduces the impact of a drought and has flexibility to hold yearlings or add stockers when rainfall is adequate. “Having too much grass isn’t a bad thing,” he says.

When forage and pasture supplies are low, consider how and where you will buy feed. If alternative supplies are unavailable or too expensive, another option is to sell cows.

Culling cows is an option when there are too many cows and not enough feed. Review the herd for open cows, cows in poor condition, depreciating older cows and late-conceiving cows, Meusch says. “Ideally, producers will have a drought plan in place that has already identified the cows that can be culled. Having such a plan in place makes it quicker and easier to sell cows if culling is required.”

When feed is limited, consider the energy requirements of different classes of livestock, he says. “Understanding and prioritizing for the needs of pregnant and lactating cows is crucial for surviving a drought. Calves can be weaned early and stockers can be sold, but cows must be maintained if they are to be profitable in coming years.”

Spring-calving cows with calves on their sides are probably the most flexible right now because calves can be weaned, making cows easier to maintain. Fall-calving cows, however, need to be carefully managed to ensure they maintain their body condition through the calving and breeding season. A drought this time of year is particularly challenging for fall-calving cows, Meusch says.



Scan the QR code to watch the latest Augusta Co-op “Beef Brief” video on hay testing.

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## HEAT STRESS THROUGH GESTATION

Heat stress has profound impacts on many biological processes that can lead to poor reproductive rates. Prior to estrus, heat stress reduces follicle growth, hormone production, and oocyte (the egg) competency. Combined, this reduces fertilization rates. Once fertilized, heat stress also reduces the growth of the newly formed embryo. This reduction in the growth of an embryo is likely the result of increased cell death and/or a smaller corpus luteum (CL) that produces less progesterone. This reduced growth rate and increased embryonic cell death leads to more embryos lost during the first week of gestation. Unfortunately, heat stress continues to impact embryonic growth through the first 21 days which also increases the loss of these early pregnancies.

Issues with heat stress continue throughout gestation. Exposure of early pregnancies (day 24-45) to heat stress reduces fetal growth and can result in the loss of up to 20% of these pregnancies. Heat stress reduces placental efficiency meaning the placenta has a reduced ability to deliver nutrients to the developing fetus. Toward the end of pregnancy, extreme heat stress can impact placental hormone production which can lead not only to premature calving but also to drastically reduced development of the mammary glands impacting lactation. Ultimately, heat stress impacts beef females from the beginning to the end of pregnancy.

What does this mean for beef producers right now? First and foremost, have pregnancy diagnosed in your herd. Contact your herd veterinarian to set up a palpation or ultrasound. Pregnancy can also be diagnosed by taking a blood sample and either mailing the samples to a diagnostic lab or by using the new chute-side blood test kit from IDEXX (test is called Alertys and they are available from most veterinary supply companies). The blood tests are accurate but consultation with your herd veterinarian is always recommended.



Pregnancy rate can dip to as low as 50-60% when prolonged heat stress occurs during the breeding season. What options does a producer have if a breeding disaster occurs? If you have a split calving season or calve year-round, the decision to keep or cull open females is a little easier. Simply roll cows younger than 5 years old over to the next breeding season. The decision is harder if you only have cows calving in the spring. If the cost of replacement breeding stock remains reasonable, then the optimum decision would be to cull and replace for this year.

Most years, the decision to cull open cows isn't easy. Some would argue to cull all females that cannot conceive in her environment because her genetics did not match her environment or level of management. But genetics for reproduction are lowly heritable, so genetics are a very small contributor to reproductive failure. Also, if you only have a drought and excessive heat stress once every 5-10 years, should you penalize a cow whose genetics match the environment most of the time? To make the decision even more challenging, often cows that are culled are replaced with bred two-year olds, who are inherently reproductively inefficient, will require additional feed inputs, and may take two years to reach optimum productivity. In the long run, what really costs more? Interesting problem to think about and certainly not one answer for all producers.

The markets, and where we are in the cattle marketing cycle, should impact the decision. I got some incredible advice from an experienced beef producer a few years ago. Pap had run over 1,000 cows for decades and his strategy was when prices are high, own as many cows as you can and sell as many calves as you can. Extend the calving season if you need to because every calf sold was profitable. Pap didn't care to keep open females at all. However, when prices were low, Pap controlled the calving season tightly and culled cows that didn't conceive. Pap's philosophy was when times were lean be efficient and when times were good, be productive. Good advice.

## BENEFITS OF EARLY CULLING OPEN BREEDING HEIFERS WHEN IT COMES TO BREEDING HEIFERS, YOU HAVE TO BE ON YOUR TOES IN YOUR MANAGEMENT PRACTICES.

Early culling of open breeding heifers has several benefits to your cow-calf operations bottom-line. Pregnancy can be diagnosed by palpation at 60 days and by ultrasound as early as 30 days, so now is the time to take action and cull the open heifers.

In addition to reducing grazing pressure on drought stressed pastures there are several other long-term benefits. Typically we should expect well developed yearling heifers, at 65% of their mature weight, going into their first breeding season to conceive in a fairly short (45-60 days) breeding season.

The easiest time in a beef breeding females life to get bred, should be as a well-developed yearling heifer. Because of this, culling open heifers as soon as possible leads to:

- Improving the long-term reproductive performance of your cow-herd. Reproductive traits are low in heritability; nevertheless, culling open heifers will improve the genetic potential for reproductive performance in your cow-herd by eliminating the sub-fertile heifers. From a business standpoint, reproductive success (percent calf crop weaned) is of critical economic importance in the cow-calf sector.
- Culling open yearling heifers right now still gives them the potential to be marketed as yearlings. At this age they still have the potential to finish out while in the A maturity group and harvest as fed cattle reaching the most valuable Quality Grades (Choice and Prime).

### Augusta Co-op Solutions Crystalyx, BLUEPRINT Battalion, LMB, 250 lbs.

CRYSTALYX Blueprint Battalion is a nutrient dense, self-fed supplement fortified with electrolytes, high levels of vitamins, BIOPLEX Hi-Four and BIOMOS 2. Blueprint Battalion also contains chromium, which has been shown to be important in maintaining health of stressed calves. Blueprint Battalion helps overcome nutritional stress associated with weaning, shipping, grouping and the breeding period.



SKU - 46624ST



For item details,  
scan the QR code.

Feed additives to consider including in custom beef rations to off-set heat stress include:  
Chromium & Dissipate

### Augusta Co-op Solutions Co-op, Supreme Cattle Mineral, Plain, 50 lbs.

For weaned cattle on pasture and lactating dairy cows. A high quality mineral that includes a source of chelated, organic trace minerals. The addition of organic, chelated minerals help to boost the immune levels and immune system response. The addition of organic minerals has also been proven to enhance conception rates in breeding animals in multiple university trials. Ideal for times of the year where higher levels of nutrients may be needed such as breeding season, weaning and at calving.



SKU - 678



For item details,  
scan the QR code.

It is a best management practice to breed heifers to calve a little ahead of our mature cow herd. It permits us to concentrate our management efforts during the heifer's calving season and, as importantly, to give them a little extra time to breed back and calve on schedule the following year. With this in mind, hold your replacement heifers accountable and cull opens as soon as practical to save on feed bills, capture their maximum value and improve the fertility of your cow herd.

## BEEF COW NUTRITION BEFORE AND AFTER CALVING

Beef cattle are the scavengers of the livestock business. They can turn high fiber forages and food by-product residuals into protein food at a very effective rate. For the cow herd there is seldom a period during the year when the cow cannot meet her nutritional needs with reasonable quality grass, hay, or stored forages. The exception for these nutritional needs is for the 60 days prior to calving and immediately after calving.

Why is there a challenge to the cow just prior to and after calving? There are three major reasons: the initiation of lactation, the return to a fertile reproductive state, and for the production of colostrum. Cow age will certainly have an impact on these factors, and younger cows have more critical nutritional needs.

### LACTATION

There is considerable variation from genetics and breed type, but the average beef cow produces about 1 1/2 gallons of milk per day during lactation. Approximately 60-75% of the total milk produced will be in the first 60 days after calving. Studies have shown there is a point of diminishing returns and additional milk production in beef cows is probably wasted because calves will not be able to efficiently utilize large quantities of milk. When we compare this result to the typical dairy cow that may produce 6-10 gallons of milk daily, the divergent nutritional needs are apparent. The dairy cow has a large outflow of protein, minerals, and water that must be replaced. The beef cow has very little loss of these nutrients from milk production. Data in Table 1. show an 1100-lb. cow eating 22 lbs. of grass hay with 11% crude protein will need to be a pretty exceptional milk producer to require additional protein in the diet. Except for small additions of protein for heavy-milking cows and young cows still growing, the key nutrient is energy. Most beef cows will be able to meet lactation needs with reasonable intake of grass, hay, and stored forages of good quality that will usually supply 1-1.2 Mcal/lb of metabolizable energy.

Cow Weight	10 Lbs Milk Met Energy (Mcal/Lb)	10 Lbs Milk Crude Protein (%)	10 Lbs Milk Crude Protein (%)	20 Lbs Milk Met Energy (Mcal/Lb)	20 Lbs Milk Crude Protein (%)
900	.94	9.9	1.9	1.15	12.9
1100	.92	9.4	2.0	1.07	11.9
1400	.90	9.0	2.3	1.01	11.0

NRC, 1984

### REPRODUCTION

There are reams of data to show that cows in poorer body condition at calving will have a longer postpartum interval, lower rebreeding rate, and a shorter life in the herd than cows in adequate condition. First-calf cows are the usual suspects for poor condition since they are adding growth to the stress of lactation and reproduction. Condition scores range from 1 through 9 with 1 being extremely thin to 9 being very obese. The optimum score at calving for most mature cows is 4-5 and for young cows is 5-6 (Morrison et al., 1999.) Studies show condition score at calving will have very little effect on calf birth weight, so it follows Nature is pushing the intake of nutrients to fetal growth at the expense of cow condition. When the nutritional plane is inadequate, problems occur. Results from an older-but still relevant-study in Table 2. show the results of reduced feed intake prior to calving and the subsequent loss of production from cows and calves.

Table 1

First-Calf Cows	100% of Requirements	67% of Requirements
Born alive (%)	97	90
Weaning wt. (lbs.)	350	324
40-day estrus return (%)	41	28
Heifer calf puberty (days)	318	337

Corah et al., 1975.



# Augusta Co-op Pro





	BGF-30	Blueprint Breed-Up	Clarify Mineral-Lyx	Blueprint Battalion	Fescue-Lyx
SKU	3841ST	61493	51006ST	46624ST	7191ST
Size, lbs.	250	250	250	250	250
Container	Steel	Steel	Steel	Steel	Steel
Protein, %	30.0	17.0	4.0	14.0	20.0
Protein, NPN %	12	0	0		8
Fat, %	4.0	4.0	3.0	4.0	5.0
Fiber, %	3.0	3.0	3.0	3.0	3.0
Salt				X	
Organic Minerals		Bioplex	Bioplex	Bioplex + Chromium	
	Energy and Protein	Stress, Breeding	Fly Control	Stress, Breeding	HiMag, Vit/Min
	Selenium Yeast	HiMag	All Stages Cattle Horse	HiMag, Bio-Mos, Yea Sac	For Fescue Pasture
Consumption	1/2-1.1 lb/h/d	1/4-3/4 lb/h/d	1/2-3/4 lb/h/d	1/4-3/4 lb/h/d	1/4-3/4 lb/h/d
<b>Low Moisture/Controlled Intake</b>					

\*Additional protein tub selections are available for purchase.

<b>Augusta Co-op B</b>								
	COMMODITIY BLENDS					MULTI PURPOSE		
	2-Way blend	4-Way blend	3-Way blend	Balanced Blend	Silage Topper	All Stock		Steer Fatten
SKU	2WAY	4WAY	MSG	MPG12 or 14	15MEAL	ALLSTOCK	MULTITEXT	601001
					15, 20 OR 24			
	Pellet	Pellet	Pellet	Pellet	Meal	Pellet	Texture	Texture
Bulk	X	X	X	X	X	X	X	X
Bagged-stock			X			X	X	X
Bagged-special	X	X		X	X			
Protein, %	16.0	12.0	14.5	12 or 14	15-24	12.5	12.5	12.5
Fat, %	2.5	2.0	2.7	2.8 or 3	2.5-3.5	2.5	2.5	3.0
Fiber, %	7.0	30.0	17.6	15 or 23	7.0	12.0	12.0	5.0
TDN, %	76.0	55.0	74.0	65.0	75.0	73.0	73.0	74.0
Medicated Option	X			X	X			
Vit/Min				X	X	X	X	X
	High Energy	High Fiber	High Energy	VTM	Customizable	NO added copper		
<b>GOOD</b>								

AUGUSTA PRIME POWERED BY EPNIX STOCKER®  
specifically formulated to:  
Support good bacteria in the gut, encourage rumen efficiency, support defenses during high-stress situations and maximize growth to ensure cattle reach their full genetic potential

# Protein Tub & Feed Lineup

					 <small>DRIVEN TO SERVE</small> <b>Sensible-Lyx</b>		
Brigade	Rangeland	Wind and Rain	Accuration	16%	24%	25%	
2961ST	1800045	62709	3002460-634	900594	900595	900593	
			3003995-634 HiFat				
250	225	225	200	200	200	200	
Steel	Plastic	Plastic	Plastic	Plastic	Plastic	Plastic	
14.0	25.0	5.0	25.0	16.0	24.0	25.0	
0	0	17	17	0	16	16	
4.0	5.0	3.0	5 or 10	5.0	4.0	4.0	
3.0	2.5	2.0	3.0	7.0	6.0	7.0	
X		X	X	X	X	X	
Bioplex		Availa-4					
Stress, Nutrient Dense	Low Moisture	Stress, Breeding	Intake Modifying	Cattle and Horses	Cattle, HiMag	Cattle	
Yeast, B-Vitamins	Cooked Molasses	Cooked Molasses	Molasses Based	Thermo-Cured			
1/4-3/4 lb/h/d	1/2-1 lb/h/d	1/4-1/2 lb/h/d	1.0-3.0 lb/h/d	3/4-2 lb/h/d			
<b>Versatile/Quality</b>				<b>Quality Meets Economy</b>			

\*Contact your sales representative or local store for additional details.

## Beef Feed Lineup

HIGH GRAIN SWEET			PELLET	AUGUSTA PRIME WITH EPNIX					
Er	Calf Grower	StartEm Right	Stocker & Heifer	StartEm Right	Prime Pellet	Bull Developer	Beef Breeder	Prime Steer	Prime Heifer
	601101	CALF181	621310	603701	16PRIME	BULLDEVP	BEEFBREEDER	SHOWPRO	SHOWPROH
					12, 14 OR 16				
	Texture	Texture	Pellet	Pellet	Pellet	Texture	Pellet	Texture	Texture
	X	X	X	X	X	X		X	X
	X	X	X				X	X	X
				X	X	X	X		
	15.0	18.0	14 - 16	14.0	12, 14, 16	12.5	14.0	13.0	14.0
	2.5	3.0	3.0	2.5	3.0	2.5	4.5	4.4	3.4
	5.0	6.5	10.0	17.0	10.0	16.0	12.0	9.0	14.0
	74.0	74.0	73.0	70.0	74.0	65.0	68.0	70.0	65.0
		X	X	X	X	X			
	X	X	X	<b>AUGUSTA EPNIX PRIME VTM PREMIX*</b>					
	Rolled Grains		Replacements	Pre-Con	All Cattle	Bulls	Beef Cows	Steers	Heifer/Calf
<b>BETTER</b>				<b>PRIME</b>					

### \*AUGUSTA PRIME EPNIX VTM PREMIX:

100% chelated trace minerals (Zinc, Manganese, Copper, Cobalt), selenium yeast complete gut health pack (mos, bacteria, yeast), vitamins A, D, E and Iodine.



## EVENTS / CALENDAR

TO VIEW ALL CALENDAR EVENTS,  
SCAN THE QR CODE.



### SMALL ENGINE OPEN HOUSE

Friday, August 25 | 8AM - 5PM &  
Saturday, August 26 | 8AM - 1 PM

1205B Richmond Ave. | Staunton, VA 24401

Come in to speak with knowledgeable staff members/vendors and secure savings on select Husqvarna, STIHL, and Oregon equipment!

### FALL BOOKING

Monday, August 14 - Saturday, August 26

All Store Locations

Take advantage of the best prices of the season on all of your animal health, equipment, and farm supply products! Contact your local store or sales representative for a full sale list and to place orders.

### AUGUSTA CO-OP EQUINE, WINE & DINE

Wednesday, September 13 | 5 PM - 8 PM

Lexington Horse Center

487 Maury River Rd. | Lexington, VA 24450

Augusta Co-op has secured the best prices of the year on fencing, equine supplies, supplements, animal health items, feed, equine related farm equipment and more! Vendors will be on site. This organized event, works similar to a 'pre-order', or 'booking' and is not available in-store. Plus, hear from industry leaders on innovation & technology during your complimentary dinner and wine sampling. Door prizes, free goodie bags and more!

RSVP required to Allison Bagley

ABagley@AugustaCoop.com

### BACK TO SCHOOL SALE

Monday, September 11 - Saturday, September 16

Staunton Location only.

1205B Richmond Ave. | Staunton, VA 24401

25% off all clothing, boots, and accessories!

In-stock items only. Exclusions Apply. See store for details.

### FLOCKTOBER CELEBRATION

Monday, October 2 - Tuesday, October 31

Augusta Co-op – ALL LOCATIONS

Celebrate all things poultry during Flocktober! Visit any Augusta Co-op store during the month of October for deals on a variety of poultry products & feed.

### ROAD TO THE RING

Wednesday, November 1 | 5:30 PM - 8:00 PM

Blue Ridge Community College – Plecker Center

1 College Ln. | Weyers Cave, VA 24486

A hands on experience designed for all 4-H/FFA Livestock Showmen. Presenters will inspire you to obtain the skills and techniques needed for success in the show ring! Become a better livestock showman, marketer, herdsman and learn the latest in nutrition and overall animal health.

RSVP required to Allison Bagley

ABagley@AugustaCoop.com. Dinner will be provided.

**Please note: Road to the Ring will be hosted at a NEW location this year.**

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Cave & Scottsville or shop online at

[AugustaCoop.com](http://AugustaCoop.com)



Table 2

Second-Calf Cows	100% of Requirements	67% of Requirements
Born alive (%)	100	90
Alive at weaning (%)	100	71
40-day estrus return (%)	48	38
Weaning wt. (lbs.)	320	294
Calf Scours rate (%)	33	50
Mortality (%)	0	19

Corah et al., 1975.

If one calculates the economics of the above data with calf value at \$1.00 per pound, it shows the restricted intake cost about \$40.00 per cow (36% of calf weaning weight) in returns even with these very light weaning weights, and it does not include lost production from cows that did not rebreed.

Restricted feed intake right after calving will result in similar losses. Increased nutrient intake after calving stimulated secretion of anabolic hormones, promoted fat deposition, shortened the postpartum interval to estrus, and increased pregnancy rate at the first estrus in the study from Ciccioli et al. (2003) for cows fed to gain either 1 lb/day or 2 lbs./day for 71 days after calving.

Restricted pre-calving feed intake may also influence calf nursing behavior. Lardy and Stolenow (2001) have reported on Australian data which showed calves born to dams on a low plane of nutrition took significantly longer to nurse than calves born to dams on a maintenance or high plane of nutrition.

## COLOSTRUM

One of the factors often overlooked in the nutrition of beef cows is colostrum production. A Virginia Tech study (Hough et al., 1990) indicated immunoglobulin (IgG) concentration would not be changed in cows fed 100% or 57% of NRC pre-calving nutritional levels, but colostrum volume and calf absorption of IgG would be lower from the restricted cows. A study in sheep from Swanson et al (2008) indicated improper nutrition from mid to late pregnancy in ewe lambs altered colostrum quality and quantity and reduced offspring birth weight. By association, results from Table 2 indicate calves born from dams with restricted pre-calving nutrition are more susceptible to disease from scours and have a higher mortality rate. Other studies have shown steers with restricted colostrum intake at birth had lower feedlot growth rates and lower carcass grades.

The restriction of feed intake and quality pre-calving will have significant impacts on many economically-important issues of beef production, and there will be life-long effects on calf performance.

*Penn State Extension*



# FALL FARM *Supply* BOOKING

## AUGUST 14-26, 2023

*Take advantage of the best prices of the season on all of your animal health, equipment, and farm supply products!*

*Contact your local store or sales representative for a full sale list and to place orders.*

**AugustaCoop.com or (540) 885-1265**

