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Beef IRM Team

OFF THE HOOF

KENTUCKY BEEF CATTLE NEWSLETTER. AUGUST 1, 2021

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Contents

This month's newsletter includes:

Timely Tips

Dr. Les Anderson, Beef Extension Professor, University of Kentucky

Spring-Calving Cow Herd

- Fescue pastures don't generally produce much this month. If you are lucky and had some rain with this heat, you may have some forage going into the usually dry months. Keep rotating pastures to permit calves to continue gaining weight. Keep minerals available at all times.
- Bulls should have been removed from the cow herd by now! At the very latest, pull them by September 1. They should be pastured away from the cow herd with a good fence and allowed to regain lost weight and condition. It is a good time to evaluate physical condition, especially feet and legs. Bulls can be given medical attention and still have plenty of time to recover, e.g., corns, abscesses, split hooves, etc.
- Repair and improve corrals for fall working and weaning. Consider having an area to wean calves and retain ownership for postweaning feeding rather than selling "green", lightweight calves. Plan to participate in CPH-45 feeder calf sales in your area.

Fall-Calving Cow Herd

- Dry cows should be moved to better pastures as calving time approaches. Cows should start calving next month. Yearling heifers may begin "headstart" calving later this month. Plan to move cows to stockpiled fescue for the breeding season, so it will soon be time to apply nitrogen fertilizer.

- Prepare for the fall-calving season (usually September). Get ready, be sure you have the following:
    - record book
    - ear tags for identification
    - calf puller
    - castration equipment

General

- Provide shade and water! Cattle will need shade during the hot part of the day. Check water supply frequently – as much as 20 gallons may be required by high producing cows in very hot weather.
- Select pastures for stockpiling. Remove cattle and apply nitrogen when moisture conditions are favorable. Stockpiled fescues can be especially beneficial for fall-calving cows after calving. Reproductive rates are highest in fall-calving cows grazing stockpiled fescue.
- Avoid working cattle when temperatures are extremely high – especially those grazing high-endophyte fescue. If cattle must be handled, do so in the early morning.
- Do not give up on fly control in late summer, especially if fly numbers are greater than about 50 flies per animal. You can use a different "type" of spray or pour-on to kill any resistant flies at the end of fly season.
- Keep a good mineral mix available at all times. The UK Beef IRM Basic Cow-Calf mineral is a good choice.
- Cattle may also be more prone to eat poisonous plants during periods of extreme temperature stress. They will stay in "wooded" areas and browse on plants that they would not normally consume. Consider putting a roll of hay in these areas and/or spraying plants like purple (perilla) mint which can be toxic.
- Take soil samples to determine pasture fertility needs. Fertilize as needed, this fall.

Recent and Upcoming On-line Beef Education Opportunities

Beef IRM Team, University of Kentucky

Beef Minutes	*Heifer Development Series* – Dr. Katie VanValin *Thoughts from the Beef Improvement Federation Meetings* – VanValin, Bullock, Crites *Options for Fly Control* – Dr. Katie VanValin
BeefBits Podcast	*High Cotton* – Dr Lehmkuhler and guest Dr. Lawton Stewart from UGA
Beef Book	*http://www2.ca.uky.edu/agc/pubs/ID/ID108/ID108.pdf*

To access this and other excellent beef educational content, visit our Facebook Page (facebook.com/KyBeefIRM) and/or on the Department of Animal & Food Science YouTube page (https://www.youtube.com/channel/UCu4t18Zo2E_4_DBBELPjPMg). Subscribe to the AFS YouTube page and click the notifications bell to receive a notification whenever we publish new beef education content. Beef Bits can also be accessed on the podcast website (https://www.podbean.com/media/share/pb-meqic-e6f8f1?utm_campaign=u_share_ep&utm_medium=dlink&utm_source=u_share).

Beef Bash Lexington 2021!

Beef IRM Team, University of Kentucky

The University of Kentucky and the Kentucky Cattlemen's Association are busy planning a fall educational event with something for everyone. Circle Thursday, October 14th on your calendar and join us at the UK C. Oran Little Research Station in Versailles for an afternoon with the cows, grass, and fellowship.

We have hosted Beef Bash at the UKREC in Princeton since 2008. For those of you that have not been able to attend, our goal is to have a more "user-friendly" field day – more interactive and less structured. You can come and go as you please, attend various demonstrations of your choosing, look at cattle exhibits, visit with commercial exhibitors, visit with other producers, or study various educational exhibits. Your choice. The name "Beef Bash" implies that we want you to have an enjoyable time while you learn.

Edcational Opportunities. You can see our cattle operation which provides animals for beef research. Education opportunities will abound and will be scattered throughout the entire research station. Many stations will host researchers from the across CAFE will be share their research and it relevance to the Kentucky Beef Industry. ANR Agents will share successful beef programming ideas and their impact on beef productivity. Extension Specialist will discuss state educational programming and impact. Finally, we will discuss the management program or our cow herd; our goals, plans, and procedures.

Commercial exhibits. A large tent in the staging area will house commercial exhibits and serve as the focal point of all activities. You can visit with various company representatives as you please and make plans for purchasing products for weaning calves or wintering the cow herd. Information on many new products will be available. Take your time and visit a while.

Hands-on Demonstrations. Various "how-to" demonstrations will be conducted throughout the day. You can attend those that interest you and ask questions in a less formal environment. Examples of demonstrations may include: bull selection, estrous synchronization technology, ration balancing, freeze-branding, alternative fertilizers, fencing and water, etc. We'll spend more time "doing" and less time speech making.

Social: Visit with the leadership of the Kentucky Cattlemen's Association and the University of Kentucky. The Dean and Associate Deans of the UK College of Agriculture are planning to attend and look forward to visiting with you. Bring any prospective agriculture students, especially those interested in Animal and Food Sciences with you. Extension Specialists and researchers from across the College will, of course, be available to visit and answer questions. We want to hear from you and get to know you.

KCA will be represented with leaders from across the state, especially the western part. This event has been a fantastic opportunity for KCA leadership to interact not only with UK personnel but also with other industry leaders. Come and visit with other cattlemen from across the state and be a part of making KCA the voice for all Kentucky cattle producers.

Make plans now to spend some time with folks who are interested in the same things that you are – improving our position in the beef industry. Mark October 14th on your calendar and bring a neighbor. The last couple of years have been extremely stressful for everyone, but we'll keep moving forward with meaningful research and continue to build an even stronger cattlemen's organization.

Registration begins at 8:30 a.m. EST, with programs and tours starting at 9 a.m. EST. A lunchtime meal will be made available to purchase. No preregistration is required. Participants will receive a free pair of cotton-knit gloves. Of course, this in-person event is subject to change to due the COVID surge induced by the delta variant.

For more information, please contact Dr. Les Anderson (859)-257-2856 or les.anderson@uky.edu.

Open Heifer Options – Making Lemonade out of Lemons

Kevin Laurent – Extension Specialist, University of Kentucky

There are many events or moments throughout the year that we as beef producers look forward to with great anticipation, excitement and frankly some degree of worry. It could be the daily checks during calving season or finding out your pay weight and price for a load of yearlings you delivered to the sale barn. I think most of us would agree that the annual preg checking of the cow herd is right there towards the top of the list of management activities that can have us on pins and needles. Open cows and open heifers are part of the business. What we choose to do with open females can affect our bottom line. For the sake of brevity, I would like to limit this discussion to replacement heifers and what options we have when the vet finds her empty.

Give her another chance or cull her? It may be tempting to give open heifers another chance especially if you have both a fall and spring calving season. The problem with this option is research shows that there may be upwards of 20 % reduction in conception rates on heifers that failed to conceive in the first breeding season. Ask yourself, if she was a slow breeder as a yearling, what will her chances be of breeding back as a 2 year old? If we choose to cull her, what is the best way to market a 900-1100 lb open heifer?

Option 1: Sell at the sale barn. Obviously, the easiest option, but be prepared for a pretty severe discount mainly because there are simply not that many heifers of that weight class at the sale barn on any given day. Remember, the cattle market moves in load lots of 48-50,000 pounds. It may take order buyers several weeks to assemble 45-50 open heifers of that weight class to make a load.

Option 2: Feed them. Open replacement heifers are still of an acceptable age to be finished for slaughter. Most heifers at pregnancy check time are about 18 months of age and can be easily finished with 3-4 months of additional feeding. Local beef is in big demand and if slaughter space can be scheduled this may be an acceptable option.

Option 3: Retain ownership and send them to the feedlot. This is one option that most small to medium size cow calf producers have probably not considered. Recent data from the PVAP-Feedlot program on 18 open replacement heifers showed an average profit of $132 per head while feeder calves on the same load lost $98 per head. The primary reason for this difference is due to the discounted

starting value of the open replacement heifers, however as you can see in the following table, the replacement heifers outgained and out graded the feeder calves.

Type	No Head	Start Wt.	Start Price ($/cwt)	Final Wt.	Average Daily Gain	% Prime and CAB	Profit/Head ($)
Replacement Heifers	18	1054	92.06	1517	3.99	83	131.64
Feeder Calves	45	733	125.27	1230	2.89	18	-97.89

There appears to be great potential for producers to pool open replacement heifers in late summer and send to the feedlot as opposed to selling at a discount. But there are some additional factors to consider.

Considerations for retaining ownership and finishing open replacement heifers:

- Be mindful of the age of heifers. Heifers that are skeletally mature may be downgraded to Commercial or Utility grade and severely discounted. Try not to feed heifers that are older than 20 months.
- Manage heifers much like feeder calves. Make sure to booster respiratory vaccines and deworm before shipping to the feedlot.
- If you choose to feed heifers on your farm and have never finished cattle, take advantage of upcoming Master Finishing programs that will be offered this fall.

As always, contact your local ANR Extension agent for more information on the PVAP program or marketing open replacement heifers.

Epizootic Hemorrhagic Disease and Bluetongue in Cattle

Michelle Arnold, DVM (Ruminant Extension Veterinarian, UKVDL)

Information regarding insect control in this article was provided previously by Lee Townsend PhD (Retired Extension Entomologist, UK Department of Entomology)

Epizootic hemorrhagic disease (EHD) virus is a pathogen of wild and domestic ruminants, especially white-tailed deer. EHD occasionally causes serious epidemics in wild deer populations that can spill over into domestic animals, including cattle. Bluetongue (BT) virus is very similar to EHD although sheep are the most susceptible animal to bluetongue and it can cause tremendous losses to this industry. Cattle are susceptible to both EHD and BT infection, although it is generally a mild infection with fever and weight loss as the most common symptoms. Both viruses that cause EHD and BT belong to the genus *Orbivirus*, family *Reoviridae*, and the viruses are primarily transmitted through the bite of blood feeding gnats, or midges, of the *Culicoides* genus. Bluetongue significantly affects the cattle industry due to restrictions on the sale and movement of cattle that test positive for the virus.

EHD and BT have a very predictable pattern with cases concentrated in the months of August, September and October. Deer are often severely affected by EHD and epidemics result in significant death loss. Sick deer may be found unable to stand or be seen drooling, foaming, or bleeding from the

mouth and nose. Dead deer may be found in or near water with no apparent wounds. EHDV-1 and 2 are the most common strains in the US with EHDV-2 most frequently isolated. Traditionally there is an outbreak every 5-10 years in Kentucky, but a new EHDV-6 serotype in the US has been isolated from deer every year since 2006. There is also an increase in frequency of EHD outbreaks in northern states where it was rarely seen previously and increasing reports of EHD in cattle around the world.

Both beef and dairy cattle are affected by EHD and both cows and calves may show signs of disease. Typical clinical signs in cattle include fever, oral ulcers, drooling, sloughing of the nasal mucosa, lameness associated with inflammation of the coronary band, and weight loss. In dairy cattle, udder lesions and a severe drop in milk production may occur. These same clinical signs, especially the oral ulcers and lameness, may be due to other notifiable diseases such as Foot and Mouth disease so it is extremely important to contact a regulatory veterinarian in suspected cases of EHD. Most cattle recover within 2-3 weeks but may lose substantial body condition during that period of time. Sheep rarely develop clinical signs when infected with EHD and goats are not considered susceptible.

Bluetongue virus causes severe disease in sheep, white-tailed deer, pronghorn antelope, bison, and llamas and alpacas. Cattle and goats usually have milder disease symptoms although there have been outbreaks with death loss in both species. Symptoms of bluetongue include fever, redness and swelling of the face, ears and tongue, ulcers in the mouth, salivation, ocular and nasal discharge, lameness due to inflammation of the coronary band, difficulty breathing, weight loss and death. The tongue may be swollen to the point of appearing blue due to lack of oxygen. In cattle, symptoms are less obvious but may include lethargy, fever, drooling, tearing, nasal discharge, swollen and scabby teats, and lameness. There may be abortions and/or congenital defects in the fetus if pregnant dams are infected with either virus between 70-120 days' gestation. Calves may be born small, weak, deformed or blind. BT is also of regulatory significance to the cattle industry (reportable to State Veterinarian) because cattle are considered carriers of the virus which affects movement, especially internationally. Although biting midges are the primary mode of transmission, bluetongue virus can be transmitted from animal to animal by other routes including close contact, through the placenta to the fetus, venereal transmission, by blood-sucking insects, and iatrogenically through injections with dirty needles. Colorado Serum produces a modified-live Bluetongue vaccine only for use in sheep and goats.

EHD in deer has been correlated with droughts because the deer tend to concentrate around the few wet areas available and these are where the gnats breed. The gnats that transmit EHD and BT tend to feed on the underbelly and lower legs, areas in cattle that are hard to treat effectively with insecticides. Whole animal sprays of pyrethroids should provide the best protection – especially with coverage to under belly and legs where these gnats feed. Organophosphate insecticides are less desirable due to shorter residual life. The gnats are poor fliers. If possible, keep animals in open areas away (30' or more) from edges of woods. Gnats tend to be in and around wooded areas and usually do not venture far from margins. Air movement will disrupt their flight. If practical, keeping cattle out of wooded areas, especially around wet spots can help decrease the risk of exposure. Building heavy use areas incorporating rock and geotextile fabric underlayment around watering points helps keep these areas dry and clean.

Diagnosis in cattle is accomplished through several types of blood tests. Virus isolation or real time PCR can detect the virus in whole blood (purple top tube). The UKVDL offers a BT/EHD PCR that detects virus antigen in 10 ml of whole blood (drawn in an EDTA or "purple top" tube), or from a swab or tissue samples (lung and spleen preferred) for $50 in-state + $10 Accession fee. There is a less expensive serologic test available for BT virus (BT virus ELISA $6) but a positive result only indicates exposure to the virus at some point in time and does not prove active infection.

There is no specific treatment for EHD or BT virus infections in cattle. Supportive treatment with anti-inflammatory drugs and supplemental feed may be helpful in affected animals showing severe lameness or those that go off feed. Animals recovering from the infection should be treated with an effective insecticide against biting midges because the virus remains in their blood for several weeks which aids in the continued transmission of the virus. However, the biting midges that spread the virus will cease activity after the first killing frost and transmission will stop.

Corn silage for the beef herd

Dr. Jeff Lehmkuhler, Extension Professor, University of Kentucky

It is hard to believe that it is near that time of year when corn will start to be harvested for silage. We have been fortunate in many areas of the region to receive timely precipitation providing for good corn stands. As the price of corn is still over $6/bushel on the spot market and the futures prices is in the mid 5's, folks are asking about corn silage as an alternative feed this year.

When considering corn silage, first be sure that you are prepared. In many situations the harvest equipment may not be owned, and a custom harvest crew will come to chop and haul the silage. You need to get on their schedule and understand that weather and breakdowns can impact the harvest window for your corn crop. How do you plan to store the silage? For many beef operations, a silo bag is often the best choice. Again, the bagger will likely have to be rented and bags purchased. Be sure to get the bagger rented for sufficient time to fit the harvest window. Prepare the site for bags or drive over piles to ensure they drain well and water is diverted away from them. You don't want to be driving through mud when trying to feed out silage from a pile or bag.

Corn will be ready to harvest when the whole plant moisture level is 62-65% or 35-38% dry matter. Fields will continue to dry down during the harvest and it is better to start harvest a bit wetter, so the last part of the field doesn't get too dry. Corn that is less than 60% moisture should be considered for harvest as high moisture corn or allowed to dry and combined later. Corn harvested too dry simply doesn't pack well and fermentation outcomes are less than ideal leading to poor quality feed.

Once corn is chopped and delivered to the storage area, ensure the highest quality of feed by obtaining the proper packing density. A packing density of 11-15 lb or on average 13 lb of dry matter per or 40-44 lb as-is per cubic foot would be targets. The fermentation process is mostly anaerobic. Therefore, packing reduces gaps where air is present in the silage and allows bacteria to quickly go from aerobic to anaerobic fermentation leading to greater lactic acid production leading to a lower pH for preserving the silage. Improperly packed silage will result in poor fermentation, higher pH, and greater yeast and mold growth.

When feeding out corn silage, the silage will be exposed to air and oxygen will be able to permeate into the silage at the exposed face. Oxygen exposure will begin an aerobic fermentation which can be felt as increased heat on the surface of the silage. This will lower the "shelf-life" or stability of the silage and impact intake and performance. In warm weather, it is recommended that 12" be removed daily from the exposed surface or face to minimize spoilage losses. During colder months, this may be reduced to six inches, but monitor the face for heating. In most instances, trenches, and drive over piles are made too wide for medium to small beef operations and excessive spoilage occurs. This is where a silo bag may be of value as they come in various diameters to better align with the feed out rate. Corn silage should be fed daily since secondary fermentation occurs immediately once exposed to oxygen. Additionally, listeria can grow in the presence of oxygen. Circling disease is the common term for listeriosis which may also be seen in partial facial paralysis. Cows that appear to not be able to swallow and their tongue is extended out as if chewing on the tongue are symptoms as well. It is important to manage silage feed out to minimize the risk of this disorder.

Corn silage is about 8% crude protein and will require supplementation when provided to lactating cows and growing calves. If used as the main feed source for growing calves combined with corn derived protein supplements such as distillers grains or corn gluten feed, be sure to supplement with calcium to meet their dietary calcium needs and reduce the risk of urinary calculi. Work with your Extension agent or nutritionist to develop feeding programs for your herd to ensure you offer a balanced diet that meets performance goals. For more information on feeding corn silage to beef cattle, be sure to read our fact sheet ID-264 Feeding Corn Silage to Beef Cattle at
http://www2.ca.uky.edu/agcomm/pubs/ID/ID264/ID264.pdf

Incorporating stockpiled fescue into the winter-feeding program

Dr. Katie VanValin, Assistant Extension Professor, University of Kentucky.

It might seem a little pre-mature to be talking about the winter-feeding program, when just last week we experienced the hottest temperatures of the summer thus far. However, if you are considering taking advantage of stockpiled fescue this winter, the time to start this process in now! Due to the ergot alkaloid producing endophyte it possesses, tall fescue can often get a bit of a bad reputation. However, one of the places that this forage can really shine is in its ability to be stockpiled which results in a good source of nutrients to be grazed during late fall and early winter (assuming things like soil fertility and rain fall are adequate).

Often, stockpiled tall fescue can provide greater amounts of protein and energy compared to grass-hay. This means that stockpiling tall fescue can be a means of decreasing hay requirements while also lessening costs associated with supplemental feed. To get the greatest return on the investment in stockpiling fescue, it is important to make sure that the right animals get access to this valuable feed resource. The nutrient requirements of cattle are not stagnant throughout their life or even throughout the calendar year. Thus, the goal should be to allow those animals with increased nutrient requirements during the late fall and early winter to have access to stockpiled fescue. Luckily, stockpiled fescue can fit nicely into both spring and fall calving herds.

Spring calving herds: Stockpiled fescue can be an excellent option for thin spring calving cows. It is well documented, that thin cows (BCS $\leq$ 4) have decreased reproductive performance, and the best time to try and put condition back on these cows is during the period from weaning to calving. This is when

the cow's nutrient requirements are the lowest, thus, more of the nutrients she is consuming will be available for improving BCS. For spring calving cows, this period coincides nicely with the availability of stockpiled fescue.

Fall calving herds: Stockpiled fescue can be utilized to meet the high nutrient requirements of lactating fall calving cows. It is important to make sure that cows remain in adequate BCS during the period from calving to breeding, and stockpiled fescue is an excellent option to decrease supplemental feed costs associated with maintaining lactating cows during the late fall and early winter.

Growing cattle: Stockpiled fescue can also be utilized for growing cattle, however depending on what the targeted ADG is for these animals, supplementation may still be required. However, if a greater proportion of the nutrients required to support growth can come from stockpiled fescue vs. what could be supplied by feeding grass-hay, supplemental feed costs can still be decreased.

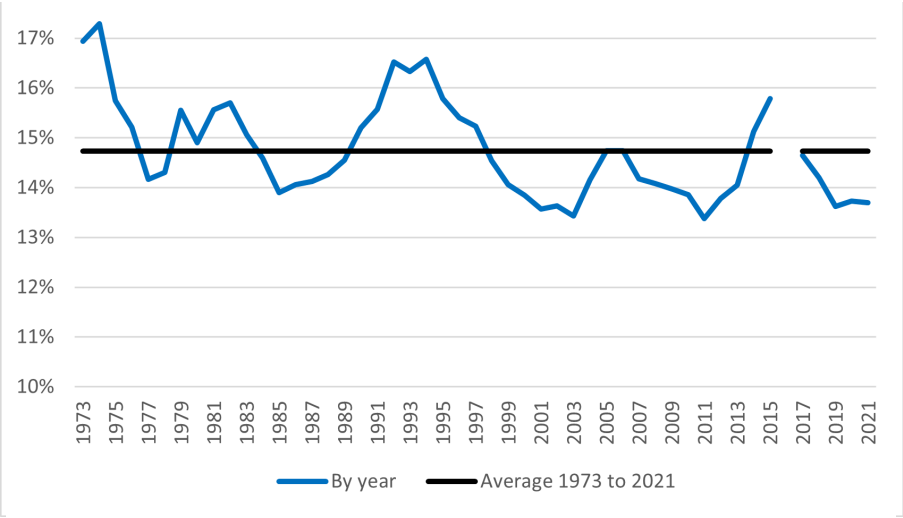
If stockpiling fescue is something that might work in your production system, please refer to the University of Kentucky extension publication AGR- 162: Stockpiling for fall and winter pastures for more information about producing stockpiled fescue.

Mid-year Inventory Report Confirms Continued Contraction of the US Beef Herd

Dr. Kenny Burdine, Livestock Marketing Specialist, University of Kentucky

On Friday July 23rd, USDA-NASS released their mid-year estimates of US cattle inventory. Most all beef related inventory categories were lower, with all cattle and calves down 1.3% from July 1, 2020. I tend to focus more on beef cow inventory, which was off a little more than 2% from last year. This was the largest mid-year decrease in beef cow numbers since 2012, but still leaves the beef cow herd just 3% off its recent high in 2018. USDA does not make state-level estimates in July, but I suspect drought conditions in the west, and in the northern plains, have impacted this. Beef cow slaughter levels in the first half of 2021 have been relatively high although most culling tends to occur in the fourth quarter as fall-born calves are weaned and we move into winter.

July Beef Heifer Retention as a Percent of Beef Cow Inventory



Source: USDA-NASS and Author Calculations

Beef heifer retention estimates paint a picture of decreasing beef cow numbers in the future. While beef heifer retention in nominal terms has been pretty flat the last three years, I like to examine that number as a percent of beef cow numbers. Put simply, if heifer retention is smaller than the culling rate, this suggests decreases in beef cow inventory. The figure below attempts to capture this as it compares heifer retention as a percentage of beef cow

inventory on an annual basis (blue line) to the average of this measure going back to 1973 (black line). There was no estimate in 2016, which is why the gap exists. Note that each of the last three years have been about 1% below that long run average. Culling patterns for the balance of 2021 will be impacted by weather patterns and calf prices, but I feel pretty confident that this trend of decreasing beef cow numbers will continue into 2022.

As we discuss these cattle inventory numbers, we do so as the beef cattle market has seen considerable improvement over the last several weeks. Feeder cattle markets really struggled to process rapid increases in grain prices this spring. While new crop corn prices remain historically high, they have pulled back from their earlier highs and this has seemed to breathe new life into a feeder cattle market that fundamentally looked pretty solid coming into 2021. Fall CME© feeder cattle futures are well into the $160's as I write this, which bodes well for our fall market. Of course, inventory reports really speak more to the longer term outlook and the picture being painted is relatively bullish. Plus, these decreases in inventory should also line up with future increases in packing capacity, and the two together are significant reason for optimism in the next few years.

Table 1. USDA July 1, 2021 Cattle Inventory Estimates

	2020 (1,000 hd)	**2021 (1,000 hd)**	**2021 as % of 2020**
Total Cattle and Calves	102,200	100,900	99
Cows and Heifers That Have Calved	41,400	40,900	99
Beef Cows	32,050	31,400	98
Milk Cows	9,350	9,500	102
Heifers 500 Pounds and Over	16,200	16,000	99
For Beef Cow Replacement	4,400	4,300	98
For Milk Cow Replacement	4,000	4,100	103
Other Heifers	7,800	7,600	97
Steers 500 Pounds and Over	14,700	14,500	99
Bulls 500 Pounds and Over	2,100	2,100	100
Calves Under 500 Pounds	27,800	27,400	99
Calf Crop	35,135.5	35,100	100
Cattle on Feed	13,600	13,400	99

Source: USDA-NASS