EXTENSION

CATTLEMAN'S CORNER

*Division of Agriculture Sciences and Natural Resources * Oklahoma State University* **JAN/FEB 2017**

Signs of impending calving in cows or heifers

Glenn Selk, Oklahoma State University Cattle Emeritus Extension Animal Scientist

As the spring calving season begins, the cows will show typical signs that will indicate parturition is imminent. Changes that are gradually seen are udder development, or making bag and the relaxation and swelling of the vulva. These indicate the cow is due to calve in the near future. There is much difference between individuals in the development of these signs and certainly age is a factor. The first calf heifer, particularly if she has the genetic makeup for heavy milking, develops udder for a very long time, sometimes for two or three weeks before parturition. The swelling and relaxation of the vulva can be highly variable too. Most people notice that Brahman influence cattle seem to change in this area much more than cattle from other breeds.

Typically, in the immediate 2 weeks preceding calving, the udder is filling, and one of the things that might be seen is the loss of the cervical plug. This is a very thick tenacious, mucous material hanging from the vulva. It may be seen pooling behind the cow when she is lying down. Some people mistakenly think this happens immediately before calving, but in fact this can be seen weeks before parturition and therefore is only another sign that the calving season is here. The immediate signs that usually occur within 24 hours of calving would be relaxation of the pelvic ligaments and strutting of the teats. A protein hormone called "relaxin" is produced by structures on the ovary and is highest in concentration the last 24 hours prior to calving. This hormone causes the softening of the collagen in the pelvic ligaments and the cervix.

Due to this surge of relaxin, and the relaxation of the pelvic ligaments, a subtle, but noticeable sunken depression can be seen in front of the pin bones. These can be fairly dependable for the owner that watches his cows several times a day during the calving season. The casual observer who is knowledgeable of the signs but sees the herd infrequently may have difficulty accurately predicting calving time from these signs. The relaxation of the pelvic ligaments really cannot be observed in fat cows, (body condition score 7 or greater). However, relaxation of the ligaments can be seen very clearly in thin or moderate body condition cows and can be a clue of parturition within the next 12 - 24 hours.

These changes are signs the producer or herdsman can use to more closely pinpoint calving time. Strutting of the teats is not really very dependable. Some heavy milking cows will have strutting of the teats as much as two or three days before calving and on the other hand, a thin poor milking cow may calve without strutting of the teats. Another thing that might be seen in the immediate 12 hours before calving would be variable behavior such as a cow that does not come up to eat, or a cow that isolates herself into a particular corner of the pasture. However, most of them have few behavioral changes until the parturition process starts. Sources: Effect of Relaxin on Parturition in Ruminants. L.L Anderson, Iowa State University Leaflet A.S. R1465. and Calving Time Management of Beef Cows and Heifers, Oklahoma State University Extension Circular E-1006.

Feedlot placements jump in December

Derrell S. Peel, Extension Livestock Marketing Specialist

Strong feedlot demand for feeder cattle helps explain the strong feeder price rally at the end of 2016. December feedlot placements were 117.6 percent of last year, significantly larger than expected. This follows a 15 percent year over year increase in placements in November. December feedlot marketings were 106.8 percent of one

year ago; close to expectations. The January 1 on-feed inventory was fractionally above one year ago at 100.3 percent of last year.

For all of 2016, feedlot placements were up 5.8 percent with fourth quarter placements up a strong 7.3 percent year over year. However, marketings increased even more sharply with twelve month total marketings up 6.2 percent year over year. Fourth quarter marketings were up an impressive 9.2 percent from 2015 levels.

December placements were up the most in the southern plains with Texas up 23 percent and Oklahoma up 54 percent year over year. Strong monthly placements were noted in most major feeding states including Nebraska (up 15 percent); Kansas (up 18 percent); Colorado (up 13 percent; and Iowa (up 16 percent), all compared to one year ago. Lower placements were noted in Washington, Idaho and South Dakota where winter weather likely was a factor in restricting December placements.

December placements were concentrated at lighter weights. Placements weighing 700-800 pounds were up 26.1 percent year over year and placements weighing 600-700 pounds were up 26.8 percent compared to last year. Under 600 pound placements were up 16.0 percent while over 800 pound placements were up only 4.5 percent compared to one year ago. Most of the increased placements will be marketed in the last half of the second quarter and in the third quarter of 2017. There is ample opportunity yet for winter weather to impact production and further delay the timing of these cattle.

Lighter weight December placements may be due in part to the likelihood that heifers accounted for more relatively more placements compared to steers. The quarterly breakdown of steers and heifers on feed in the latest report showed that the January 1 inventory of steers on feed were 2.0 percent less than last year while the inventory of heifers on feed was 5.0 percent larger year over year. This reflects both aggressive steer marketing in 2016 as well as a slowdown in heifer retention last year. Steer slaughter was up 7.6 percent year over year in 2016 and was up 8.7 percent in the fourth quarter of the year. Heifers on feed January 1 were up despite an increase in heifer slaughter in 2016, up 4.7 percent for the year, and up a whopping 11.4 percent in the fourth quarter.

Strong fed cattle prices out of the chute in 2017 are in part due to aggressive fed marketing at the end of 2016, compounded by winter weather. Current fed cattle prices are a bit stronger than expected and may be the seasonal high prices coming a bit earlier than expected. The larger placements imply that supply pressure will build into the middle and later part of the year. The challenge will be for feedlots to continue marketing aggressively to minimize the supply pressure while we see how beef demand adjusts to continued retail price decreases in the coming months.

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Wheat pasture and hay stocks

Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist

The storm this past weekend brought significant ice and damage to western and northwestern Oklahoma but the ice was generally less severe than expected in central Oklahoma. Most of the state, however, received very beneficial rain totaling one to three inches in many areas. The rain totals included record daily rainfall for several locations on Sunday, January 15, 2017. This moisture will help alleviate rapidly expanding drought conditions across the state. The latest Drought Monitor showed that 88 percent of the state had drought conditions ranging from D1-D4. This compares to just three months ago when 62 percent of the state had no dry conditions. Dry and cold conditions through December and early January slowed or stopped wheat growth and left wheat pastures in increasingly poor condition. Many stocked wheat pastures are very short which has forced producers to increase hay feeding or move cattle to other pastures or to market.

Amidst a slew of USDA reports last week was December 1 hay stocks, included in the January Crop Production report. Total U.S. hay stocks on December 1 were up 0.9 percent from one year ago; however, state totals differed widely. The report confirms the impact of drought in the southeast with Alabama hay stocks down 34.4 percent year over year, Georgia down 13.6 percent and Mississippi down 5.3 percent from one year ago. December hay stocks were lower as well in Tennessee and Kentucky compared to last year. Texas, which has typically had the largest state hay stocks in the past fifteen years, was up a whopping 25 percent to the largest state level since 2007. Nearby, Oklahoma, with the third largest December hay stocks, was up 4.6 percent year over year along with Arkansas, up 11.4 percent and Kansas (fifth largest state stocks), up 3.9 percent from last year. Farther north, December hay stocks were 9.1 percent lower year over year in South

Dakota, with the second largest hay stocks, as were North Dakota, down 7.8 percent; Nebraska, down 9.8 percent; Missouri (fourth largest hay stocks), down 4.5 percent; and Iowa, down 19.2 percent. Hay stocks were larger year over year in Montana, Wyoming and Idaho along with Wisconsin and Minnesota.

Cash feeder cattle prices have started 2017 generally stronger, especially for calves. The combined Oklahoma weekly auction volume for the first full week of January was over 44,000 head, sharply higher than the 28,000 for the same week last year, which may reflect cattle sales due to poor wheat pasture conditions as well as cattle carried over from the end of 2016 for tax reasons. Some producers may be selling one set of stockers now, hoping to buy a second set for wheat graze-out, assuming wheat pasture conditions improve in the next few weeks. Cash fed cattle prices have carried end of year strength from 2016 into 2017. Immediate feedlot supplies may be relatively tight due to aggressive marketing in late 2016 and weather impacts that have slowed cattle performance in feedlots. Live and Feeder cattle futures have been extremely volatile so far in January with volatility likely to continue which will continue to hamper the usefulness of futures as risk management tools. Boxed beef prices dropped sharply in the first ten days of January as packers apparently flushed out the beef pipeline following the holidays. However, Choice boxed beef prices appeared to stabilize at the end of last week. The next couple of weeks will likely provide a better picture of underlying trends in boxed beef, as well as cattle markets, going forward.

Prepare a "calving kit" before spring calving season begins

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

Before the hustle and bustle of the spring calving season, now is a good time to put together the supplies and equipment that will be needed to assist heifers and cows that need help at calving time.

Before calving season starts, do a "walk-through" of pens, chutes, and calving stalls. Make sure that all are clean dry, strong, safe, and functioning correctly. This is a lot easier to do on a sunny afternoon than a dark night when you need them.

Protocol: Before calving season starts develop a plan of what to do, when to do it, who to call for help (along with phone numbers), and how to know when you need help. Make sure all family members or helpers are familiar with the plan. It may help to write it out and post copies in convenient places. Talk to your local veterinarian about your protocol and incorporate his/her suggestions. Below is an example of a "Calving Protocol" that could be laminated and hung in the barn or calving shed. Note: this is just an example. You may wish to include other important steps in the protocol. Encourage everyone that will be watching and helping cows and heifers this calving season to read Oklahoma State University Extension Circular E-1006, "Calving Time Management for Beef Cows and Heifers".

Lubrication: Many lubricants have been used and one of the best lubricants is probably the simplest: non detergent soap and warm water.

Supplies: The stockmen should always have in their medicine chest the following: disposable obstetrical sleeves, non- irritant antiseptic, lubricant, obstetrical chains (60 inch and/or two 30 inch chains), two obstetrical handles, mechanical calf pullers and injectable antibiotics. Also have a tincture of iodine solution that can be used to treat navels of newborns shortly after birth. Don't forget the simple things like a good flashlight and extra batteries and some old towels or a roll of paper towels.

It may be helpful for you to have all these things and other items you may want to include packed into a 5 gallon bucket to make up a "calving kit" so you can grab everything at once. Place that bucket in a location that can be found and reached by everyone in the operation.

"Calving Protocol"

Who to call: Countryside Large Animal Clinic 405-123-1234
Dr. Jones cell phone 405-321-4321
Dad's cell phone 405-999-0000
Billy Ray's cell phone 405-777-1111

Watch heifers 1 hour after water bag or baby calf feet appear
Watch cows 30 min after water bag or baby calf feet appear

Find calving kit on North wall of calving barn

Use plenty of lube or soap and water

Determine that cervix is dilated and calf is coming head and both front feet first. Call for help if something is unusual.

Don't pull until cervix is completely dilated

Apply ¼ turn as hips go through pelvic bone

Backwards calf must be delivered within 4 minutes after calf's tail appears

Briskly tickle nostril of calf with stiff straw to start breathing

Clean chains and handles and replace calving kit

Beef market price dynamics

Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist

Retail beef prices will continue adjusting down in 2017 due to retail market dynamics and continued growth in domestic beef consumption this year. The most recent All Fresh retail beef prices in November were

$554.20/cwt., down 7.5 percent from one year earlier. All Fresh retail beef prices peaked in July, 2015 and have decreased 9.8 percent from the peak through November, 2016.

The average monthly price decrease since the peak has been 0.6 percent per month but the rate of decrease accelerated in the fourth quarter (Q4) of 2016. November All Fresh beef prices were down 1.7 percent from October following a 1.9 percent monthly decrease in October from September. A faster decrease is not surprising given the jump in beef consumption in Q4 of 2016. Fourth quarter beef production was up a projected 8.3 percent year over year and, when adjusted for fewer beef imports and increased beef exports, resulted in a projected 6.5 percent increase in per capita retail beef consumption compared to Q4 of the previous year. Sharply higher Q4 beef production in 2016 contributed to a projected annual increase in per capita beef consumption of 3.1 percent for the year.

Beef production is forecast to increase year over year by 3.5-4.0 percent in 2017 leading to an expected increase in consumption of 1.3 percent year over year. The consumption increase on a quarter by quarter basis will be relatively modest compared to the sharp jump in domestic consumption in late 2016. The current projection for 2017 domestic beef consumption hinges on the projection for total beef production as well as continued improvements in the net beef trade balance. Increased beef consumption may be interpreted by some as better beef demand while lower retail prices might suggest lower beef demand. In reality, it is the magnitude of retail price adjustments relative to increased consumption that defines the level of beef demand. In general, lower retail prices in the face of increased beef supplies are the expected response for a given level of demand. However, other factors such as pork and poultry prices and macroeconomic conditions may shift beef demand.

The fact that retail beef prices will be lower in 2017 does not inevitably imply additional pressure on cattle prices. The dynamics of retail price adjustments are slower than for cattle and wholesale beef markets. This is true for both price increases as well as decreases. For example, from early 2013, calf prices increased nearly 80 percent to a monthly peak in November 2014. All Fresh retail beef prices did not peak until eight months later in July 2015 having increased just over 25 percent from early 2013 levels. Likewise cattle prices have adjusted down more and faster whereas retail beef prices have adjusted less and more slowly. This is because, not only is it typical for retail prices to adjust more slowly, but also because retail prices began adjusting down eight months after peak cattle prices. Even if beef supplies were unchanged in 2017 we would expect retail beef prices to continue adjusting for several more months. Of course, total beef supplies are expected to increase in 2017 and overall market price pressure will depend critically on both domestic and international demand for U.S. beef in 2017.

The 3 stages of parturition

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

As the spring calving season approaches, an increased understanding of the parturition process is helpful. The more we understand about the physiology of the process, the more likely we are to make sound decisions about providing assistance. Parturition or “calving” is generally considered to occur in three stages.

Stage 1: The first stage of parturition is dilation of the cervix. The normal cervix is tightly closed right up until the cervical plug is completely dissolved. In stage 1, cervical dilation begins some 2 to 24 hours before the completion of parturition (2 to 6 hours would be most common). During this time the “progesterone block” is no longer present and the uterine muscles are becoming more sensitive to all factors that increase the rate and strength of contractions. At the beginning, the contractile forces primarily influence the relaxation of the cervix but uterine muscular activity is still rather quiet. Stage 1 is likely to go completely unnoticed, but there may be

some behavioral differences such as isolation or discomfort. At the end of stage one, there may be come behavioral changes such as elevation of the tail, switching of the tail and increased mucous discharge. Also relaxation (softening) of the pelvic ligaments near the pinbones may become visually evident, giving a "sunken" appearance on each side of the tailhead. **Checking for complete cervical dilation is important before forced extraction ("pulling") of the calf is attempted.**

Stage 2: The second stage of parturition is defined as the delivery of the newborn. It begins with the entrance of the membranes and fetus into the pelvic canal and ends with the completed birth of the calf. So the second stage is the one in which we really are interested. This is where we find all of the action. Clinically, and from a practical aspect we would define the beginning of stage 2 as the appearance of membranes or water bag at the vulva. The traditional texts, fact sheets, magazines, and other publications that we read state that stage 2 in cattle lasts from 2 to 5 hours. As was illustrated in last week's newsletter, data from Oklahoma State University and the USDA experiment station at Miles City, Montana, would indicate that stage two is MUCH shorter. In these studies, assistance was given if stage two progressed more than two hours after the appearance of water bag at the vulva. The interesting thing about the data was that the heifers calving unassisted, did so in about one hour after the initiation of stage two, and mature cows calved within an average of 22 minutes of the initiation of stage two. Those that took longer needed assistance. These and other data would indicate that normal stage two of parturition would be redefined as approximately 60 minutes for heifers and 30 minutes for adult cows. In heifers, not only is the pelvic opening smaller, but also the soft tissue has never been expanded. Older cows have had deliveries before and birth should go quite rapidly unless there is some abnormality such as a very large calf, backwards calf, leg back or twins. If the cow or heifer is making good progress with each strain, allow her to continue on her own. Know your limitations. Seek professional veterinary help soon if you encounter a problem that cannot be solved easily in minutes.

Stage 3: The third stage of parturition is the shedding of the placenta or fetal membranes. In cattle this normally occurs in less than 8 to12 hours. The membranes are considered retained if after 12 hours they have not been shed. Years ago it was considered necessary to remove the membranes by manually "unbuttoning" the attachments. Research has shown that manual removal can be detrimental to uterine health and future conception rates. Administration of antibiotics usually will guard against infection and the placenta will slough out in 4 to 7 days. **Contact your veterinarian for the proper management of retained placenta.**

An important ingredient for your calving season preparation is the Oklahoma State University Extension Circular E-1006: Calving Time Management for Beef Cows and Heifers. Cow calf producers will want to download this free circular and read it before the first calf is born this spring.

Re-warming methods for severely cold-stressed newborn calves

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

Oklahoma has already experienced one "Artic cold front." Another is expected to arrive in a few days. Unfortunately, that probably won't be the last one to show up this winter. Spring calving season is still a few weeks ago for most spring-calving herds. However, the first two year olds to calve may begin the process here in January. Despite our best efforts, there may be a calf born unexpected in the middle of one of those bone-chilling nights. By the time we find it the next morning, it is suffering from hypothermia or *severe cold stress*.

Several years ago, an Oklahoma rancher called to tell of the success he had noticed in using a warm water bath to revive new born calves that had been *severely cold stressed*. A quick check of the scientific data on that subject bears out his observation.

Canadian animal scientists compared methods of reviving hypothermic or cold stressed baby calves. Heat production and rectal temperature were measured in 19 newborn calves during hypothermia (cold stress) and recovery when four different means of assistance were provided. Hypothermia of 86 degrees F. rectal temperature was induced by immersion in cold water. Calves were re-warmed in a 68 to 77 degrees F. air environment where thermal assistance was provided by added thermal insulation or by supplemental heat from infrared lamps. Other calves were re-warmed by immersion in warm water (100 degrees F.), with or without a 40cc drench of 20% ethanol in water. Normal rectal temperatures before cold stress were 103 degrees F.

The time required to regain normal body temperature from a rectal temperature of 86 degrees F. was longer for calves with added insulation and those exposed to heat lamps than for the calves in the warm water and warm water plus ethanol treatments (90 minutes and 92 minutes vs 59 minutes and 63 minutes, respectively). During recovery, the calves re-warmed with the added insulation and heat lamps produced more heat metabolically than the calves re-warmed in warm water. This represents energy that is lost from the calf's body that cannot be utilized for other important biological processes. Total heat production (energy lost) during recovery was nearly twice as great for the calves with added insulation, or exposed to the heat lamps than for calves in warm water and in warm water plus an oral drench of ethanol, respectively. By immersion of hypothermic calves in warm (100 degrees F) water, normal body temperature was regained most rapidly and with minimal metabolic effort. No advantage was evident from oral administration of ethanol. (Source: Robinson and Young. Univ. of Alberta. J. Anim. Sci., 1988.)

When immersing these baby calves, do not forget to support the head above the water to avoid drowning the calf that you are trying to save. Also it is important to dry the hair coat before the calf is returned to cold winter air. If the calf does not nurse the cow within the first few hours of life (6 or less), then tube feeding of a colostrum replacer will be necessary to allow the calf to achieve passive immunity by consuming the immunoglobulins in the colostrum replacer.

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This Newsletter is one way of communicating cattle information to those interested.

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Obviously not every calf born in cold weather needs the warm water bath. However, this is apparently a method that can save a few *severely stressed* calves that would not survive if more conventional re-warming methods are used. With tight profit margins, saving every calf is important to the bottom line.

Save the Date!!!

April 6, 2017	Eastern Oklahoma Beef Summit McAlester Expo
April 27, 2017	Spring Cattle Producers Meeting McAlester Stockyards