

OFF THE HOOF

Kentucky Beef Newsletter – January 2012

Published Monthly by Dr. Les Anderson, Beef Extension Specialist, Department of Animal & Food Science, University of Kentucky

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Timely Tips

Dr. Roy Burris, University of Kentucky Beef Specialist

Spring-Calving Cow Herd

- Keep replacement heifer calves gaining enough to reach their "target" breeding weight (65% mature weight) by spring.
- Get ready for calving season! See that all equipment and materials are ready, including obstetrical equipment, record forms or booklets, ear tags, scales for obtaining birthweights, etc. Prepare a calving area where assistance can be provided easily if needed. Purchase ear tags for calves and number them ahead of time if possible. Plan for enough labor to watch/assist during the calving period.
- Study the performance of last year's calf crop and plan for improvement. Plan your breeding program and consider a better herd sire(s). Select herd sires which will allow you to meet your goals and be willing to pay for superior animals.
- Start cows on the high magnesium mineral supplement soon. Consider protein supplementation if hay is less than 10% crude protein. If cows are thin, begin energy (grain) supplementation now.
- Consider vaccinating the cows to help prevent calf scours.
- Move early-calving heifers and cows to pastures that are relatively small and easily accessible to facilities in case calving assistance is needed. Keep them in good condition but don't overfeed them at this time. Increase their nutrient intake after they calve.

Fall Calving Cow Herd

- Provide clean windbreaks and shelter for young calves.
- Breeding season continues. Keep them on accumulated pasture as long as possible, then start feeding hay/grain. Don't let these cows get too thin.
- Remove bulls by the end of the month. That means that your 2012 fall calving season will end in early

November.

- Catch up on castrating, dehorning and implanting.

General

- Increase feed as the temperature drops, especially when the weather is extremely cold and damp. When temperature drops to 15°F, cattle need access to windbreaks.
- Provide water at all times. Cattle need 5 to 11 gallons per head daily even in the coldest weather. Be aware of frozen pond hazards. Keep ice "broken" so that cattle won't walk out on the pond trying to get water.
- Feed hay in areas where mud is less of a problem. Consider preparing a feeding area with gravel over geotextile fabric.
- Consider renovating and improving pastures with legumes, especially if they have poor stands of grass or if they contain high levels of the fescue endophyte. Purchase seed and get equipment ready this month.

“Still Waters Run Deep”

Dr. Roy Burris, Beef Extension Specialist, University of Kentucky

If you are looking for a New Year's resolution try this one – resolve to be a better listener. Everyone wants to be a better speaker but what about listening? You've heard the old saying that “still waters run deep”. That's because someone that listens and observes is likely to learn more than someone that likes to hear themselves talk.

Listening allows you to - add to your knowledge base, gain a different perspective on various subjects, show that you respect others' opinions, resolve problems with customers and co-workers, show support, work better in a team-based situation and better serve your clientele. Think about it. If someone comes to your farm to buy a bull would you start telling them what they need or would you listen for more details?

It takes patience to be a good listener and that's usually in short supply – that's been my problem, too. When my wife met my mother for the first time, Mom said “I hope you can teach him to have some patience”. I was the kind of person who would finish your sentence for you.

I remember early in my career when I worked in south Mississippi – I was a young man in a hurry and I met a man that was nicknamed “Slow” because he spoke slower than everyone else. One of my workers told me that “Slow” wanted to breed his female cow dog to my Australian Shepherd – Smokey, so I was kind of expecting him when he came by the farm office. He came in to see me and the conversation went something like this:

Slow: I've ...got...this...dog...she's

Me: She's in heat and you want to breed her to Smokey? Where is she?

Slow: She's...in...the...car.

I couldn't believe what I saw then. “Slow's” car had the headliner all pulled down and his seats were ripped up with stuffing all over the place.

Me: You've been keeping her in your car?

Slow: Ye...ah.

Me: Okay. Okay. Let's get her out of there and put her in the fertilizer shed. I'll put Smokey in tonight.

I didn't bother to ask anything about the dog and went on about my business. The next morning, I went to the shed to let Smokey out and "Slow's" dog was lying with her feet in the air. I mumbled something to myself about no good deed going unpunished and nudged the dog with my foot just to make sure it was dead. It wasn't. The dog ran out the door and across a 25-acre field. I was chasing her and yelling at her to stop but I hadn't bothered to ask her name.....which didn't really matter anyway because I finally figured out that she was deaf.

I chased that dog in the 90° heat until she finally gave up, then I called "Slow" to bring his "mobile dog pen" and pick up his dog..

Slow: I'll...give...you...the...

Me: The pick of the litter? No, I really don't need another dog. Thanks, though.

I'm doing better now when it comes to having patience and listening. No, my wife didn't finally teach me. It was my grandchildren. Or as my son says "who is this guy that is doting on the grandkids and what has he done with my father?" Well, patience is a heavenly virtue but it doesn't come easy. When you couple patience with the ability to listen, it will make you a better manager, co-worker and even a parent or grandparent. I just wish I would have learned earlier.

Cow College 2012 Open for Registration

Land Dale, Extension Associate, University of Kentucky

The University of Kentucky Beef IRM group is pleased to announce that UK's 2012 Cow College is now open for registration. Cow College is an intensive, hands-on course for beef producers designed to expose them to the most cutting edge information related to beef cattle production and business. The program is divided into four two day sessions, and one single day session. Nearly half of the time in Cow College is hands-on sessions. In addition to the hours of instruction and interaction with specialists, participants receive printed materials to take back to the farm.

The total cost of the program is \$125 for all five sessions, or \$50 for each session individually. Locations scheduled for 2012 include Lexington, Princeton and Morehead. Fees do not include lodging.

Proposed dates for Lexington:

Economics/Management	July 10-11
Forages/Nutrition	July 26-27
Herd Health	August 9-10
Reproduction/Genetics	September 11-12
End Product	October 9

Proposed dates for Morehead:

Economics/Management	July 17-18
Forages/Nutrition	July 31-August 1
Herd Health	August 14-15

Reproduction/Genetics September 18-19
End Product October 16

Proposed dates for Princeton:

Economics/Management July 24-25
Forages/Nutrition August 7-8
Herd Health August 21-22
Reproduction/Genetics September 25-26
End Product October 23

Enrollment is on a first come, first served basis. ***Participants must be graduates of UK's Master Cattleman Program.*** It is limited to the first 30 people per location who reserve a spot with a deposit of \$50 made payable to COW COLLEGE. Credit card payment is not accepted. The deadline for registration is June 1, 2012. **For online registration go to:** <http://ces3.ca.uky.edu/beefIRM/cowcollegereg.htm>

Deposit to Cow College should be mailed to:

Land Dale
Cow College
Kentucky Cattlemen's Association
176 Pasadena Drive
Lexington, KY 40503

If you have any questions or need further information, contact Land Dale at land.dale@uky.edu or call: (859) 278-0899. For other UK Beef IRM programs, please visit:

<http://www.uky.edu/Projects/BeefIRM/welcome.htm>

Determining Which Estrous Synchronization Protocol to Use – Cows

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

Perhaps one of the more perplexing issues for ranchers considering estrous synchronization and AI (ESAI) is determining which protocol to use to control estrus. Many new systems for controlling the expression of a fertile estrus have been developed in recent years. Ranchers have numerous ESAI protocols at their disposal. Most of these protocols can result in acceptable pregnancy rates but vary in cost, effectiveness, and implementation. To determine the appropriate system, producers need to consider several factors: 1) proportion of cows that are likely anestrus (not yet begun to display estrus), 2) available labor, skill, expertise, and facilities for accurate detection of estrus and stress-free handling of cattle, 3) cost of synchronization treatment, 4) value of semen, 5) availability of AI technician, and 6) acceptable level of success. Each of these factors will affect the choice of estrus synchronization protocol. A major consideration affecting the system of choice is labor availability for estrus detection and AI. Systems are available that require complete, limited, or no estrous detection (fixed-time inseminations or TAI).

ESAI Systems That Require Estrous Detection

Select Synch

Select Synch is an outstanding protocol for synchronization of estrus in postpartum beef cows. Select Synch begins with an injection of gonadotropin-releasing hormone (GnRH; 100 µg) followed by treatment with prostaglandin F_{2α} (PG) 7 days later (Fig. 1). Estrous detection must begin 4 days prior to the injection

of PG and continue for 5 days after treatment. Cows exhibit estrus before PG treatment because GnRH does not synchronize follicle growth in cows on Day 14-16 of the cycle and the CL induced by GnRH treatment may regress early in some anestrus cows. Approximately 10-15% (range 0-25%) of cows can express estrus before the PG treatment.

Synchronization of estrus using the Select Synch Protocol results in excellent reproductive performance in postpartum beef cows. Approximately 85% of cows treated will be observed in estrus (submission rate), conception rate is normal, and AI pregnancy rates typically range from 40-60%. In large field trials (n = 4,766), Select Synch was used in well managed, mature cows at least 45 days from calving and resulted in AI pregnancy rates of 77%. Obviously, Select Synch can be an effective system to synchronize a fertile estrus in postpartum beef cows. However, effectiveness of Select Synch decreases if your herd has a large proportion of cows that have not yet initiated estrous cycles (i.e. many late-calving, thin or 2 year old cows). Although Select Synch improves the reproductive performance of anestrus cows compared to a 2-treatment PG protocol, the AI pregnancy rates are low (20-30%).

Select Synch should be used for ESAI if:

1. A large proportion of the cows are cyclic before treatment. If cows are well managed (BCS > 5), the herd consists of few, if any, young cows, and the cows are at least 45 days postpartum, use of Select Synch will result in high pregnancy rates to AI.
2. Facilities and labor are available for daily estrous detection and cattle handling for at least 10 days.
3. Technician is available twice daily for 10 days.
4. Value of the semen is high. When the value of the semen is high, conception rate must be maximized. Using Select Synch, only cows that are observed in estrus are inseminated which maximizes conception rate.
5. Minimize costs of estrus synchronization treatment.

Problem with Anestrus Cows

The major limitation for use of Select Synch is the proportion of cows that are anestrus at the beginning of treatment. Typically, anestrus cows make up at least 50% of the herd at the beginning of the breeding season. Reproductive performance of anestrus cows can be improved if a progestin (progesterone-like compound) is incorporated into the Select Synch protocol. Two progestins are available for use; melengestrol acetate (MGA) and progesterone via the EAZI-BREED™ CIDR® cattle inserts (termed CIDR; Pfizer, Inc.). Progesterone delivered using a CIDR induces estrus in more anestrus cows than feeding MGA. Insertion of a CIDR from the day GnRH is administered to injection of PG (Fig. 1) improves reproductive performance of postpartum anestrus cows. Another benefit of insertion of a CIDR is that expression of estrus before the PG injection is inhibited.

Select Synch + CIDR should be used for ESAI if:

1. A large proportion of the cows are anestrus before treatment. If cows are a little thinner (BCS 4-5), the herd consists of several young cows, and many of the cows are less than 45 days postpartum use Select Synch + CIDR.
2. Facilities and labor are available for daily estrous detection and cattle handling for at least 5 days.
3. Technician is available twice daily for at least 5 days.
4. Value of the semen is moderate to high. When the value of the semen is high, conception rate must be maximized. Incorporating a CIDR with Select Synch will improve the overall submission rate. Since conception rate is unaffected, more cows conceive to AI.

5. Higher AI pregnancy rates are more important to the producer than the higher costs of the estrus synchronization protocol.

ESAI Systems With Limited or No Estrous Detection

Co Synch + CIDR and Select Synch + CIDR & TAI

Many beef producers have neither the time nor the available labor for adequate estrous detection and the cattle handling necessary for Select Synch. Also, the availability of a quality AI technician is often limited. Thus, many producers desire protocols in which estrous detection is limited (2-3 days) or cows are artificially inseminated at a fixed time (TAI). Co Synch + CIDR and Select Synch + CIDR & TAI were protocols developed to reduce the number of days of estrous detection. Both Co Synch + CIDR and Select Synch + CIDR & TAI begin with an injection of GnRH (100 µg) and insertion of a CIDR followed 7 days later by treatment with PG and removal of the CIDR insert (Fig. 2 & 3).

Producers that want to maximize AI pregnancy rates with limited estrous detection need to use Select Synch + CIDR & TAI. In this system, cows are observed for estrus for 72-84 hours after PG is administered and the CIDR is removed. Cows observed in estrus are inseminated about 12 hours after first observed estrus. At 72-84 hours, all cows NOT observed in estrus are subjected to TAI and are given a second injection of GnRH. Treatment of postpartum cows with Select Synch + CIDR & TAI has several advantages: 1) only 3 days of estrous detection, 2) inclusion of the CIDR prevents early estrus (before PG) and induces estrus in more anestrous cows, 3) results in high AI pregnancy rates. The high AI pregnancy rates are the result of combining the higher conception rates to AI following accurate estrous detection and conception that occurs in some cows that would have been missed using estrous detection alone.

Select Synch + CIDR & TAI should be used for ESAI if:

1. A large proportion of the cows are anestrous before treatment. If cows are a little thinner (BCS 4-5), the herd consists of several young cows, and many of the cows are less than 45 days postpartum, a system that includes a CIDR is necessary.
2. Facilities and labor are available for daily estrous detection and cattle handling for at least 3 days.
3. Technician is available twice daily for at least 3 days.
4. Value of the semen is moderate to high. When the value of the semen is high, conception rate must be maximized. Select Synch + CIDR & TAI maximizes pregnancy rates to AI but the cost is higher because all cows are inseminated. Conception rate is lower even though the AI pregnancy rate is higher.
5. Higher AI pregnancy rates are more important to the producer than the higher costs of the estrus synchronization protocol.

Producers that desire systems that require NO estrous detection should use Co Synch + CIDR (Fig. 3). In this system, all cows are subjected to a second injection of GnRH & TAI anywhere from 48-72 hours after PG is administered. When CO Synch + CIDR was first developed, cows were subjected to GnRH & TAI at 48 hours. Pregnancy rates are slightly higher if GnRH & TAI are performed around 66 hours after PG is administered. Acceptable AI pregnancy rates have also been reported when GnRH & TAI occurred 72 hours after PG. Therefore, acceptable AI pregnancy rates can be achieved when GnRH & TAI occurs at any time from 48-72 hours after PG. The highest AI pregnancy rates appear to occur when TAI occurs near 66 hours after PG administration.

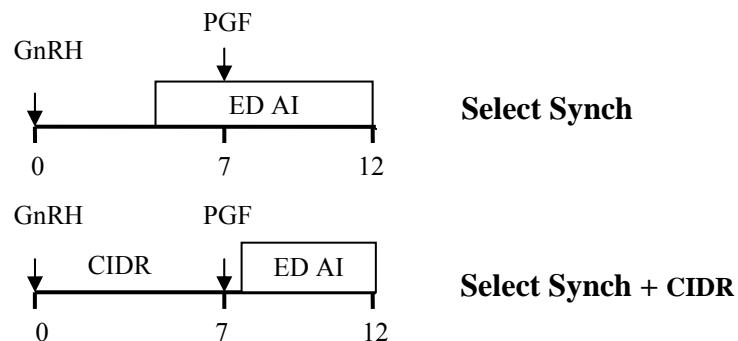
Systems that incorporate total TAI are more variable in AI pregnancy rate than systems that use either total or partial estrous detection. The decision to use systems with complete TAI needs to involve an assessment of your comfortable level of risk. Systems that use total TAI involve higher risk. Several management factors can reduce the risk involved with systems that use complete TAI. First, cows must be in a BCS ≥ 5 (BCS scale 1-9; 1 = emaciated, 9 = extremely obese) both at calving and at the beginning of treatment. Also, mineral status (i.e. copper and selenium) of the cows can affect pregnancy rate to AI (L. H. Anderson, unpublished data) and many cows in the Southeast are deficient in these two minerals. Second, cows must be at least 30 days (preferably 45 days) postpartum at the beginning of treatment. Third, minimize the number of primiparous cows that are subjected to the TAI protocol. Fourth, cows must have been previously vaccinated and dewormed. Success is possible using TAI systems if the risk factors are minimized.

Co Synch + CIDR & TAI should be used for ESAI if:

1. Facilities and labor are NOT available for daily estrous detection and cattle handling.
2. Technician availability is very limited.
3. Value of the semen is low to moderate. When the value of the semen is high, conception rate must be maximized. Co Synch + CIDR & TAI reduces conception rates to AI and the cost per pregnancy is higher because all cows are inseminated. Semen of high value should NOT be used.
4. Pregnancy rates of anestrous cows to this system have been acceptable but low. Reducing the proportion of anestrous cows will reduce the risk associated with TAI protocols.

Several protocols to synchronize estrus are currently available for use by beef cow-calf producers. Determining which system to use depends upon the proportion of anestrous cows at the beginning of treatment, available labor and facilities for estrous detection, availability of a qualified technician, value of the semen, and the goals of the producer. Certainly, incorporation of ESAI and proven genetically superior sires into beef cow calf operations will improve the productivity and profitability of any operation. Increased use of ESAI could help the United States keep its competitive global advantage in the production of quality beef.

Figure 1. Estrous synchronization protocols that incorporate complete estrous detection (ED)



What do you know about peanut products? The primary peanut coproducts being used this year are peanut skins and hulls. Dr. Gary Hill in 2002 reviewed peanut byproducts and their utilization for beef cattle diets. Peanut skins contain a high amount of fat, near 20-25%, which can limit their inclusion rate in forage-based rations. They also contain moderate amounts of crude protein at approximately 17% and lower levels of acid detergent fiber (<25%). These unique factors make them attractive as a feedstuff.

Peanut skins, however, also contains a significant amount of tannins. As the level of peanut skins increased to 20% of the diet on a dry matter basis, diet dry matter and protein digestibility were found to be reduced. This is a result of the high tannin content binding up degradable protein leading to a rumen protein deficiency for finishing-type diets. Peanut skins were fed as a replacement to soybean hulls in diets that contained 10.5% or 15.5% crude protein. On the low protein diet, replacing soyhulls with peanut skins resulted in a linear reduction in daily gains. However, on the high protein diet, daily gains increased linearly as peanut skins replaced soyhulls up to 15%. Peanut skins can be used as component in supplements offered to cattle grazing forages high in crude protein (>16%). Since fescue crude protein content declines rapidly as the plant matures and easily falls below this level as the grass begins flowering and developing seed, this is not an ideal feed for this situation. Because of concerns of limited degradable protein for much of the tall fescue hay fed to cows during the winter, peanut skins would not be an ideal supplement without additional crude protein offered along with it.

Peanut hulls differ dramatically in nutrient content to that of skins. They are low in protein and fat while being high in fiber. These properties make this feedstuff a roughage source. With in-vitro dry matter digestibility in the 24% range contrasted to that of 55% for tall fescue, it is not a great source of digestible fiber and will not yield much energy. For those needing a roughage product for self-fed supplements that doesn't bridge up in a self-feeder, it works well at low-moderate rates. However, as the inclusion rate in the diet increases, the energy density is reduced and performance will decline. Peanut hulls should not be finely ground and fed to beef cattle as forage replacement as the effective fiber content is reduced by this processing which may result in greater risk to ruminal acidosis.

As you begin looking for less expensive feeds, be sure to think about how these feeds can be produced for less money. Read the feed tag ingredients and if there is not adequate information listed ask the feed salesman specifically what is in the feed. Learning more about various coproducts will allow you to have better performance when feeding these feedstuffs. For additional assistance contact your county extension agent or nutritionist.

Salt Toxicity: A Consequence of Too Much Salt and Not Enough Water

Dr. Michelle Arnold, Large Ruminant Extension Veterinarian, University of Kentucky

The cold temperatures and muddy conditions of winter often make routine chores difficult to nearly impossible. Feeding salt or trace mineral mix and ensuring an adequate supply of water are two chores that, if neglected, can result in a health disaster. Salt poisoning or "water deprivation sodium ion toxicosis" occurs when excessive quantities of salt are ingested and/or intake of water is limited. This condition has been reported in all species throughout the world but is most common in swine, cattle and poultry. Overconsumption of salt and mineral frequently occurs if the herd has been without these supplements for a week or more. Rapid disappearance is common as the cows "go wild" over new salt or mineral offered free-choice. Water intake may be greatly reduced by frozen water sources, overcrowded conditions, unpalatable (dirty/contaminated) water, getting trapped in an area such as a barn without water,

or some mechanical failure of an automatic waterer such as a faulty well pump switch. Heaters in watering troughs may also cause stray voltage that discourages water consumption by cattle.

In a case description from a 1995 issue of the Journal of Veterinary Diagnostic Investigation, a herd of 200 beef cow-calf pairs was without water for 24-36 hours due to a well pump problem. They were on pasture with no supplemental feed and had also been without salt or mineral for one week. When the water was fixed, salt (150 lbs.) and mineral (450 lbs.) was also placed in two self-feeders nearby. Within 3 hours, all of the salt and mineral was gone and 10 cows were lying down with tremors and seizures. By the following morning, all 10 of the affected cows were dead, despite supportive treatment. Clinical signs of salt poisoning may include salivation (drooling), increased thirst, abdominal pain, increased urination and defecation (some diarrhea), circling, blindness, seizures, staggering, and belligerent or aggressive behavior. Other conditions such as lead poisoning or polioencephalomalacia (“brainers”) may look similar and consultation with a veterinarian is a must in this type of emergency situation. Diagnosis can be confirmed through laboratory testing of serum, cerebrospinal fluid, aqueous humor (from the eye), and brain tissue. Salt toxicity does not consistently produce brain lesions evident at necropsy. Treatment is limited to supportive care. Fresh water may be offered in small amounts by stomach tube because too much water too quickly causes swelling of the brain.

The importance of this case description is to recognize how quickly and tragically these events can unfold. It is critical to keep salt and/or trace mineral available to cattle because overconsumption of 1-3 kg (2.2-6.6 lbs) of salt in deprived animals can result in salt toxicosis, even when water is available. Cattle are also likely to ingest other potential toxins if they are looking for something to satisfy their salt cravings. Many cases of poisoning diagnosed at the UKVDL involve cattle investigating old barns or burn piles when salt or mineral was unavailable. In known instances of water deprivation, try to limit salt intake (offer small amounts in multiple feeders or offer in block form) and slowly re-introduce it back to free-choice. Work with your veterinarian to determine the best course of action for your herd if salt- or water-deprived to prevent a health disaster.

Kentucky Beef Cattle Market Update

Kenny Burdine, Livestock Marketing Specialist, University of Kentucky

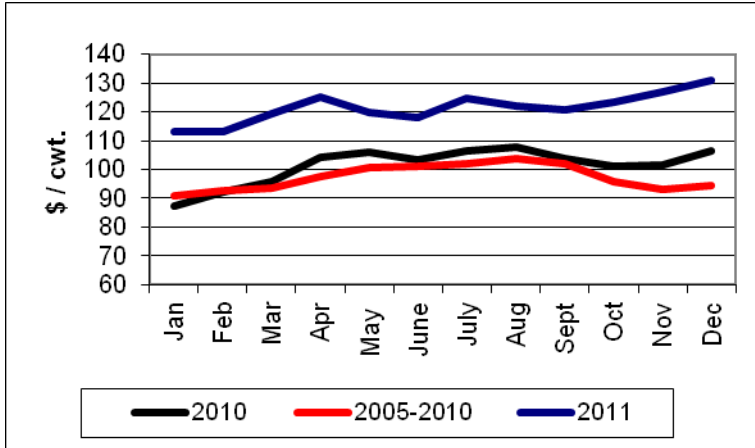
Kentucky feeder cattle markets improved for the 3rd straight month in December. Both charts that follow show a counter seasonal upward movement since September. Some of the price improvement in calves during the 4th quarter came from improved grazing conditions in the plains, but a great deal can also be attributed to improving fundamentals. Spring feeder cattle futures have continued to rise, increasing the breakeven bid price for calves placed into backgrounding programs.

The increasing price of calves has impacted the buy sell margins for winter backgrounding. At times in the fall, gross margins between current calf prices and futures based feeder cattle price forecasts were around \$400. More recently, the margin has seemed to be in the \$300 to \$350 range. Still, depending on feed cost and availability, this is likely to look attractive to some. Plus, many may be placing calves now, with the intent to move them to pasture in the spring.

January is also a crucial month in the cattle markets as it brings the annual cattle inventory report. This year will be especially important as we will have a better picture of how the massive drought of 2011 impacted cattle numbers. The question is not if cow numbers will be down, it's how much. According to NASS estimates, databased by the Livestock Marketing Information Center (LMIC), cow slaughter was up by about 4.5% through November. However, heifer slaughter is actually down by 2.4%. I would expect

that beef cow numbers have decreased by at least 2% during 2011. If the actual number does come in above 2%, this would suggest a very small calf crop for 2012 and further fuel calf markets.

**Medium / Large Frame #1 Steers
700 to 800 lbs**



**Medium / Large Frame #1 Steers
500 to 600 lbs**

