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AGRICULTURAL NEWSLETTER

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2008 Early Spring Roundup

If you're interested in attending this years Early Spring Roundup, see the attached flyer that is included with this newsletter. Pre-registration deadline is January 24.

Body Condition Score Change in 90 Days After Calving

Research data sets have shown conclusively that cows that calve in thin body condition but regain weight and condition going into the breeding season do not rebreed at the same rate as those that calve in good condition and maintain that condition into the breeding season. The following table from Missouri researchers illustrates the number of days between calving to the return to heat cycles depending on body condition at calving and body condition change after calving.

Predicted number of days (d) from calving to first heat as affected by body condition score at calving and body condition score change after calving in young beef cows. (Body condition score scale: 1 = emaciated; 9 = obese) Source: Lalman, et al. 1997

Condition Score at Calving	Body Condition Score Change in 90 Days After Calving						
	-1	-.5	0	+.5	+1.0	+1.5	+2.0
BCS = 3	189 d	173 d	160 d	150 d	143 d	139 d	139 d
BCS = 4	161 d	145 d	131 d	121 d	115 d	111 d	111 d
BCS = 5	133 d	116 d	103 d	93 d	86 d	83 d	82 d
BCS = 5.5	118 d	102 d	89 d	79 d	72 d	69 d	66 d

Notice that none of the averages for cows that calved in thin body condition were recycling in time to maintain a 12 month calving interval. Cows must be rebred by 85 days after calving to calve again at the same time next year. This data clearly points out that young cows that calve in thin body condition (BCS=3 or 4) cannot gain enough body condition after calving to achieve the same rebreeding performance as two-year old cows that calve in moderate body condition (BCS = 5.5) and maintain or lose only a slight amount of condition. The moral of the story is: "Young cows must be in good (BCS = 5.5 or better) body condition at calving time to achieve acceptable rebreeding performance." Make certain that the supplement program is adequate for your young cows to be in good body condition this spring.

To Castrate or Not to Castrate??

A question commonly discussed around small town coffee shops would sound like this: "Is it worth the trouble to castrate male calves at 'calf working time' or should I just leave them to sell as 'cutter bulls'?"

A survey conducted by Oklahoma State University of eastern Oklahoma livestock markets in 1997 and 1999 showed that on average, bull calves were \$2.00-3.00/cwt less expensive than steers of similar weight. Other studies in other states have suggested that bull calves are currently being discounted even more. In fact, last week at the Oklahoma City National Stockyards, 270 head of 468 pound feeder steers sold for \$132.57/cwt while 60 head of 478 pound feeder bull calves sold for \$124.66/cwt. Both groups were graded medium and large frame, number one muscling score. Therefore the bulls that weighed 10 pounds more, returned \$24.55 less per animal.

However, that discount may still not be enough. Until the last few years, there has been very little information available to Oklahoma producers on the additional production costs associated with purchasing lightweight bulls vs. steers for use in a stocker operation. Therefore, the objective of several OSU studies was to evaluate differences in performance and health status of steers vs. knife-castrated or band-castrated bulls.

Stocker calves castrated well prior to purchase (steers) had significantly improved daily gain (2.35 lb/day vs. 1.77 lb/day) and dry matter intake (8.85 lb/day vs. 7.59 lb/day) compared with calves castrated after purchase and at processing (bulls). No difference was observed in the feed:gain ratio. The number of times removed from the pen for disease treatment was significantly less for steers versus bulls, suggesting a healthier appearance. In addition, the number of treatments and time of recovery tended to be lower in steers versus bulls. One third (33.3%) of the steers were treated at least once; whereas 59.3% of the "cutter bulls" were treated at least once. None of the steers were treated more than one time; whereas 23.5% of the newly castrated bulls were treated more than once. (Berry, et al. 2001 OSU Animal Science Research Report).

Although more experiments comparing the effects of purchasing steers vs. bulls on performance, health, and economics are needed, data suggests that the lower costs per pound associated with purchasing bulls are out-weighed by the additional cost of decreased performance and increased sickness. Medical costs were much higher for bulls compared to animals purchased as steers. Medical costs escalate when cattle require more than one medical treatment. As the cattle markets put more and more emphasis on value-based marketing of feeder calves, cow calf producers can expect to be discounted increasingly for leaving male calves uncastrated

Fed Cattle Value Has Many Sources

The November Cattle on Feed report confirms the continued evolution of cattle markets in response to a very different and dynamic feed environment. October placements were up 12 percent year over year as feedlots took advantage of available supplies of heavy yearling cattle coming off of summer grazing programs. Placements of cattle over 800 pounds were up 23 percent from last year and placements of cattle 600-800 pounds were up 15 percent from last year. Some of the 600-700 pound feeders and certainly most anything lighter than that would have stayed on winter pasture if forage conditions were better.



This year's record corn crop is nearly harvested and it is clear that feed prices will not be dropping much in the short run nor longer term. Corn futures for December 2008 have risen over 30 cents per bushel in the past month.

Beef demand will continue to have downward pressure the rest of this year with the ample supply of pork and poultry production. With South Korea out of the market, there is little chance that export demand will come to the rescue. Current boxed beef values do not support fed cattle prices above the mid \$80s yet packers paid over \$92 per cwt (hundredweight) last week. Feedlots continue to sell fed cattle that were bought as very pricey feeders last summer, many of which have breakevens in the mid \$90 per cwt range. Feeder cattle prices have weakened somewhat the past month but do not appear likely to move much lower.

Bright Spot in Cattle Value

One of the most underappreciated contributors to fed cattle value, especially over the past year, is the value of the drop credit. Drop credit, or what is also referred to as by-products, refers to the items removed from a carcass during harvest that have utility and value. The top five value items and the percent of the drop credit value they are compiled of include: steer hide, 55 percent; inedible bleached tallow, 14 percent; oxtail, 5 percent; meat & bone meal, 5 percent; and tongue, 4.5 percent. Other major by-product items include edible tallow, liver, heart, blood meal, tripe and cheek meat.

The current value of these non-carcass items is \$10.14 per cwt on a live steer weight basis or \$129.28 per head. That compares to \$8.58 per cwt or \$109.39 per head a year ago.

Drop value per hundredweight made a new all time record of \$10.45 on May 30 of this year. However, drop value per-head set a new record September 28 at \$130.91 due to the combination of high per unit value and near-record live cattle weights. For virtually all of 2007, drop values have been trading more than two standard deviations above the historical average. So what has so radically changed to inflate drop credit values?

The first major change has been the increased value of edible and bleachable tallow due to the emergence of several sizable projects that make bio-diesel from animal fat. Currently edible tallow is \$35.25 per cwt up over 20 percent from the same week a year ago. Inedible bleachable tallow, which is produced in about a 4 to 1 ratio to the quantity of edible tallow, was at \$32.25 cwt or double the price of \$16.15 the same week a year ago. In addition, meat and bone meal is over \$250.00 per ton compared to just \$116.50 a year ago. This price increase has been driven by two factors. First, as feed grain and oilseed prices have escalated, poultry and pork producers have reformulated rations to include more meat and bone meal, which is roughly 50% protein. In the European Union, meat and bone meal is not only used for animal feed and pet food but is increasingly being used as a fuel source to generate electricity since it has an energy value that is roughly 60 percent that of fossil fuels. Blood meal, which is used as a protein source in poultry, swine, and pet diets and is a nitrogen-rich fertilizer, has significantly increased in price as well.

Bottom Line

The run up in drop values is tied largely to the renewable energy boom. Making bio-fuels from animal fats and substituting animal products for fossil fuel sources has led the way. Indirectly, values have been driven higher by ration reformulations using more animal protein sources to replace the higher priced grain and oil-

seed products now being utilized as bio-fuel resources. This entire scenario applies to pork drop credit values as well. In-the-end: It's all about the value of energy.

Growing Bred Replacement Heifers

Bred replacement heifers that will calve in January and February need to continue to grow and maintain body condition. Ideally, two year old heifers should be in a body condition score 6 (see heifer pictured below) at the time that their first calf is born. This allows them the best opportunity to provide adequate colostrum to the baby, repair the reproductive tract, return to heat cycles, rebreed on time for next year, and continue normal body growth. From now until calving time, the heifers will need to be gaining about 1 pound per head per day, assuming that they are in good body condition coming out of fall and going into winter.

Heifers will need supplemental protein, if the major source of forage in the diet is bermudagrass or native pasture or grass hay. If the forage source is adequate in quantity and average in quality (6 - 9% crude protein), heifers will need



about 2 pounds of a high protein (38 - 44% CP) supplement each day. This will probably need to be increased with higher quality hay (such as alfalfa) or additional energy feed (4 to 6 pounds of 20% range cubes) as winter weather adds additional nutrient requirements. Soybean hulls or wheat midds may also be used to insure adequate energy intake of pregnant heifers.

Wheat pasture (if adequate rainfall produces growth) can be used as a supplement for pregnant replacement heifers. If wheat pasture is used for bred heifers, use it as a protein supplement, not as the entire diet. Some producers report that 1 day on wheat pasture and two days on native or bermuda (with access to grass hay when needed) will provide the protein supplement needed. This encourages the heifers to go rustle in the warm sea-

son pasture for the second day, rather than just stand by the gate waiting to be turned back in to the wheat. What ever method is used to grow the pregnant replacement heifers, plan to have them in good body condition by calving so that they will grow into fully-developed productive cows.

Proper Cow Culling is Important to Your Business

Cull cows represent approximately 20% of the gross income of any commercial cow operation. Cull beef cows represent 10% of the beef that is consumed in the United States. Therefore Oklahoma ranchers need to make certain that cow culling is done properly and profitably. Selling cull cows when they will return the most income to the rancher requires knowledge about cull cow health and body condition. Proper cow culling will reduce the chance that a cow carcass is condemned at the packing plant and becomes a money drain for the entire beef industry.

Is she good for another year? At cow culling time, producers often face some tough decisions. Optimum culling of the herd seems to require a sharp crystal ball that could see into the future. Will she keep enough body condition through the winter to rebreed next year? How old is the cow? Is her mouth sound so that she can harvest forage and be nutritionally strong enough to reproduce and raise a big calf? At what age do cows usually start to become less productive?

There is great variability in the longevity of beef cows. Records kept by the Desert Ranches of Florida in the 1980's show how productivity changes over the life of the beef cows. These large data sets, (19500 cows, and 14000 cows in two separate years) compared the average percentage of cows determined to be pregnant based on their age in years.

This data would indicate that cows are consistent in the rebreeding performance through about 8 years of age. A small decline was noted as cows aged from 8 to 10 years of age. However the most consistent decline in reproductive performance was noted after cows were 10 years of age. A

steeper decline in reproductive performance was found as they became 12 years of age. In other words, start to watch for reasons to cull a cow at about age 8. By the time she is 10, look at her very closely and consider culling; as she reaches her 12th year, plan to cull her before she gets health problems or in very poor body condition.

Cull open cows. Why feed a cow all winter that will not have a calf next spring? Call your veterinarian and find which cows have not bred back. Cull them while they are in good body condition after summer pasture and before you spend over \$100 on the winter feed bill.

Other reasons to cull cows:

Examine the Eye Health of the cows. The number one cause of condemned beef carcasses is still "cancer-eye" cows. Although the producers are doing a much better job in recent years of culling cows before "cancer-eye" takes its toll, every cow manager should watch the cows closely for potentially dangerous eye tumors. Watch for small pinkish growths on the upper, lower, or corner eye lids. Also notice growths on the eyeball in the region where the dark of the eye meets with the "white" of the eyeball. Small growths in any of these areas are very likely to become cancerous lesions if left unchecked. Likewise be aware of cows with heavy wart infestations around the eye socket. Many of these become cancerous over time. *Culling these cows while the growth is still small, will allow the cow carcass to be utilized normally.* If however, cancer engulfs the eyeball and gets into the lymph nodes around the head, the entire carcass will likely be condemned as not fit for human consumption.

Check the feet and legs. Beef cows must travel over pastures and fields to consume forages and reach water tanks and ponds. Cows with bad stifle joints, severe foot rot infections, or arthritic joints may be subject to substantial carcass trimming when they reach to the packing plant. They will be poor producers if allowed to stay on the ranch while severely lame. They may lose weight and body condition, weigh less, and be discounted at the livestock market by the packer buyers. Culling them soon after their injury will help reduce the loss of sale price that much later may be suf-

ferred. If any cows have been treated with antibiotics for foot rot, be certain to read and follow withdrawal times before marketing the treated cows. Antibiotic residues in cow carcasses will not be tolerated in the food supply chain.

Bad udders should be culled. One criteria that should be examined to cull cows is udder quality. Beef cattle producers are not as likely to think about udder health and shape as are dairy producers, but this attribute affects cow productivity and should be considered. OSU studied the effect that bad udders had on cow productivity. They found that cows with one or two dry quarters had calves with severely reduced weaning weights (50 - 60 pounds) compared to cows with no dry quarters. Plus, cows with bad udders tend to pass that trait along to daughters that may be kept as replacement heifers. *Two key types of "bad" udders to cull include: the large funnel-shaped teats and weak udder suspension.* The large funnel-shaped teats may be indicative of a previous case of mastitis and cause the quarter to be not capable of producing milk. In addition, large teats may be difficult for the newborn calf to get it's mouth around and receive nourishment and colostrum very early in life. As some cows age, the ligament that separates the two sides of the udder becomes weakened and allows the entire udder to hang very near to the ground. Again it becomes difficult for the newborn calf to find a the teat when the udder hangs close to ground. Select against these faults and over time your cow herd will improve its udder health.

Cull cows when in moderate body condition. Send older cows to market before they become too thin. Generally, severely emaciated cattle have lightly muscled carcasses with extremely small ribeyes and poor red-meat yield. This greatly lessens the salvage value of such animals. Just as importantly, emaciated cattle are most often those which "go down" in transit, as they lack sufficient energy to remain standing for long periods of time. Severe bruising, excessive carcass trim, increased condemnations, and even death are the net results of emaciation. Very thin cows have a low dressing percentage (weight of the carcass divided by the live weight). Because of these factors, cow buyers will pay less per pound for very thin, "shelly", cull cows. In addi-

tion, thin cows will weigh less. As you combine these two factors (weight and price per pound), thin cull cows return many fewer dollars at sale time than if the cow was sold when in moderate body condition.

Cull any really wild cattle. They are hard on you, and your equipment, and they raise wild calves. Wild calves are poor performers in the feedlot and are more prone to producing dark cutting carcasses as they reach the packing plant. "Dark cutters" are discounted about \$35 per cwt on the rail.

Peppered Steaks with Caramelized Onions

- 2 beef shoulder center steaks (ranch steak), cut 1 inch thick (about 8 oz. each)
- 2 tsp seasoned pepper blend, caramelized onions and Sautéed spinach (*recipe follows*)

Roasted Potatoes

- 1 lb unpeeled small red & brown-skinned potatoes, quartered
 - 1 tsp olive oil
 - ½ tsp dried thyme
 - ⅛ tsp salt
1. Preheat oven to 425°. Place potatoes on rimmed baking sheet. Sprinkle with oil, thyme and salt; toss to coat. Roast in oven 30 to 40 minutes or until tender, turning occasionally.
 2. Meanwhile press pepper blend onto beef steaks. Heat large nonstick skillet over medium heat until hot. Place steaks in skillet, cook 13-16 minutes for medium rare to medium doneness, turning twice.
 3. Carve steaks; season with salt, as desired. Top with onions; serve with potatoes and spinach.

Caramelized Onions and Sautéed Spinach: Heat 1 Tbs butter in large nonstick skillet over medium heat until melted. Add 1 lrg yellow onion, cut ¼ inch thick, cook 18-21 minutes or until caramelized, stirring frequently. Remove onions from pan; keep warm. Heat 2 Tbs olive oil and 1 lrg clove of minced garlic over medium heat in same pan about 30 seconds or until fragrant. Add 8 cups spinach and ⅛ tsp salt. Toss to coat and cook 1 minute or until just wilted, stirring frequently. Serve immediately.

Anaplasmosis Prevention, an All Season Program

Many Oklahoma beef producers associate anaplasmosis with horse flies, and keep up a prevention program only during the fly season. Unfortunately, many of these same producers are still experiencing anaplasmosis problems well into the winter, because biting flies are only a minor vector compared to other ways the disease can be transferred. In many areas, especially wooded or brushy pastures, ticks are more important vectors than biting flies. Ticks are an all-year problem in many areas of Oklahoma, so the control program also needs to be maintained all year. Stockmen also spread the disease from carriers to susceptible animals by not removing all traces of blood from equipment when processing adult cattle. The organism can be carried by needles, dehorners, castration knives, ear taggers, or any other implement that draws blood. It is sometimes possible to determine the source of the outbreak by the way cases develop. When insect vectors are responsible there will usually be one sick animal, followed several weeks later by multiple cases. If human transfer is the cause, several sick animals will show up at the same time 2 to 4 weeks after the cattle were worked.

The most popular means of anaplasmosis prevention is the use of mineral mixes that contain chlortetracycline (CTC). When fed at a rate of 0.5 mg/lb. of body weight CTC will prevent anaplasmosis infections. It is important to note, however, that CTC is added to minerals for several different reasons, including use as a growth promotant for yearlings, and these other uses require different levels of drug in the mineral. Make sure that the product you choose states on the label that it is formulated at a rate for the prevention of anaplasmosis, and gives the specific amount of daily consumption needed to supply that level. The next step is to monitor your herd to make sure that the product is being consumed at the appropriate rate. If not, you may need to look at other products or change your management practices in order to correct consumption deficits. Recovered animals will be carriers of the disease and a source of infection for susceptible individuals. Clear them of the organism with high levels of antibiotics administered parentally, isolate them from susceptible animals, or cull them from the herd.

The signs of the disease include orange coloration of the mucous membranes due to breakdown pigments released from red blood cells that are destroyed. As more red blood cells are destroyed the animals become slow and short of breath. They may exhibit aggressive behavior due to a shortage of oxygen supply to the brain. By the time signs are noticed, the disease is usu-

ally far along and you may easily cause the death of the infected animal while trying to bring them in for treatment. If you suspect an anaplasmosis problem contact your veterinarian who can make a definitive diagnosis and recommend a course of treatment before other animals are exposed. Sick animals are about 10 times as infective as recovered carriers are, so it is important to either move them away from their herd mates, or if this is not possible, move the herd mates away from them.

If you live in an area where ticks are active in the winter, or you sometimes work your cows in cool weather, using CTC medicated mineral all year can save both the hard work involved with treating active anaplasmosis cases and the losses associated with the disease.

Observe Bulls Closely as Breeding Season Begins

Breeding seasons for fall-calving herds will begin in late November and early December. A good manager keeps an eye on his bulls during the breeding season to make sure that they are getting the cows inseminated. Occasionally a bull that has passed a Breeding Soundness Exam may have difficulty serving cows in heat, especially after heavy service. Breeding Soundness Exams cannot evaluate bull libido. Such problems can best be detected by observing bulls while they work. "Libido" or sex drive refers to the desire to mate and is thought to be a highly heritable trait in cattle. Remember that semen quality and scrotal circumference are not related to libido. Therefore, a bull that passes a Breeding Soundness Evaluation may have poor libido, or a bull with good libido may fail a Breeding Soundness Evaluation.

Therefore producers should (if at all possible) watch bulls breed cows during the first part of each breeding season. If problems are apparent, the bull can be replaced while salvaging the remainder of the breeding season and next year's calf crop. Likewise a small proportion of bulls can wear out from heavy service during the breeding season and lose interest. These, too, will need to be replaced. The greater the number of cows allotted to each bull in the breeding pasture the more critical it is that every bull be ready to work every day of the breeding season.

Injuries to bulls during the breeding season are relatively common. When a bull becomes lame or incapable of breeding, because of an injury to his reproductive tract, he needs to be removed from the breeding pasture and replaced with another bull.