COW/CALF CORNER

The Newsletter
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Oklahoma Producers Face Poor Winter Cattle Production Conditions

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For Oklahoma producers, the 2012 drought has been a very different situation compared to the extremes of 2011. Having had moisture in the winter and spring, the drought has not caused nearly as much distress this summer as a year ago. Many Oklahoma producers are still in a reduced stocking situation, which means that there was less need for destocking so far this year. Oklahoma auction market totals show the contrast between the two years, with reported feeder cattle volume since July 4 this year down 30 percent from the same period last year and cow and bull sales down a whopping 69 percent from the severe destocking rates of 2011. This likely means that cattle producers have made much less adjustment to drought conditions this year compared to last year.

However, the current situation in Oklahoma is very severe and producers may face more painful decisions in the near future. The latest Drought Monitor indicates that 91 percent of Oklahoma is in the worst two drought categories with 40 percent in the D4 exceptional drought category. The latest range and pasture condition ratings from USDA put 43 percent of Oklahoma pasture and ranges in Very Poor condition along with 37 percent in Poor condition. These ratings reflect the lack of rainfall this summer. In the last 120 days, the state has received only 52 percent of average rainfall, with a deficit of 6.81 inches of rain for the period. Some regions of the state are well below this average including the North Central region with 39 percent of average rainfall, the West Central region of the state with 45 percent of average rainfall and the Panhandle with 48 percent of average rainfall for this period.

The adequacy of hay supplies is critical as producers make plans for winter management. Though conditions are not as extreme as last year at this time, it could be a very long winter.

Oklahoma hay production in 2012 is significantly higher than 2011 but still well below average. Projected alfalfa hay production is up 54 percent from last year but is still 61 percent below the 2006-2010 average. Similarly, other hay production is projected to be up 56 percent over 2011 but still 27 percent below the five year average. These hay production projections, combined with May 1 hay stocks that were down 41 percent from the 2006-2010 average, mean that hay supplies for the winter will well below average. Anecdotally, there seems to be considerable variation around the state with some producers reporting ample hay supplies while others appear to be short of needed supplies. Regional hay supplies will be very tight with Arkansas having the worst hay situation of any state and Kansas and Missouri in roughly the same hay situation as Oklahoma. Nationally, hay supplies will be down 14 from the 2006-2010 average and hay prices are projected at records levels. While hay flowed into Oklahoma for many months last year, there are calls from surrounding regions this year looking to buy hay or relocate cows here from other drought areas. Hay may not be available or affordable if supplies are not adequate for the winter.

Producers need to assess now whether they have adequate forage for the winter. Early weaning and cow culling can help stretch limited forage in the next six to eight weeks. Last winter, the mild weather and late season rains that provided wheat pasture came to the rescue of many producers. It might happen again this year…but then again it might remain dry and be a severe winter. Now is the time to prepare for conditions in January and February.

Vitamin A Can Be Deficient in a Drought

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Vitamin A is rarely a concern in range cattle nutritional programs because it is readily synthesized from carotene that is common in green growing plants. However, in drought situations where plants become dead or dormant, the carotene content becomes practically devoid and may lead to a deficiency of the precursor to vitamin A. Carotene is very low in mature, weathered forages, grains and many crop residues. Carotene will be lost in stored hay crops over extended periods of time. Therefore if hay that was stored throughout all of last fall and winter is to be fed in the upcoming winter, the vitamin A content will be considerably less than when that forage was originally harvested. In addition some scientists have suggested that high nitrate forages common in drought years can exaggerate vitamin A deficiencies. Deficiencies of Vitamin A usually show up first as weak, blind or stillborn calves. Other signs are scours, respiratory problems, poor gains and poor reproduction.

Fortunately, the liver of cattle is capable of storing vitamin A for long periods and frequent supplementation is not necessary. A singular injection of one million International Units (IU) of vitamin A provides sufficient vitamin for 2 to 4 months in growing and breeding cattle. *A word of caution: Vitamin A and A,D, and E injections have been found to on very rare occasions cause a severe reaction to the vaccine. Please consult your veterinarian about the use of these products.*

Because the daily requirements of beef cows range from 30,000 to 50,000 IU, depending on size, stage of production, and level of milk production, supplements can be fortified with vitamin A to

supply the minimum daily requirement. Depending on the quantity of range supplement being provided, vitamin A can be added to supplements at the rate of 5000 to 10,000 IU per pound of feed. Read more about vitamin and mineral needs for grazing cattle in the Oklahoma Cooperative Extension circular E-861: "Vitamin and Mineral Nutrition of Grazing Cattle".

The Facts about Hormones and Beef

Dr. Josh Payne, Oklahoma State University Extension Area Animal Waste Management Specialist

Questions exist in the public sector regarding the safety of consuming hormone implanted beef. In short, the use of supplemental hormones in beef production has been scientifically proven as safe for consumers and is approved by the US Food and Drug Administration (FDA). For those still in question, let's further examine the science supporting these facts.

Hormones are products of living cells naturally found in both plants and animals that often stimulate cellular activity. There are six hormones approved for use in beef production. Three are natural hormones (testosterone, estradiol, and progesterone) and three are chemically similar synthetic hormones (melengestrol acetate, trenbolone acetate and zeranol).

Growth hormones in beef are primarily administered using a small pelleted implant that is placed under the skin on the back of the ear. The implants are designed to release the hormone slowly over time into the bloodstream. This ensures that hormone concentrations remain constant and low. Since the ear is discarded at harvest, the implant does not enter the food chain. Implants work by increasing the amount of growth regulating hormones, which are naturally produced by the animal. This, in turn, increases feed efficiency, protein deposition and growth rate. Implanted calves usually result in a 10-20% increase in average daily gain (growth rate) compared to non-implanted calves. Moreover, because of the increased feed efficiency, less feed is required which decreases production costs by 5-10%.

Since implant doses are low, the use of implants in cattle has very little impact on hormone levels in beef. Table 1 illustrates that 500 grams (~ 1 lb) of beef from an implanted steer contains approximately 7 nanograms of estrogen compared to 5 nanograms of estrogen from non-implanted beef. Furthermore, there are many common foods that are naturally much higher in estrogen than implanted beef. For example, 500 grams of tofu contains 16,214,285 times the amount of estrogen compared to the same amount of implanted beef. To gain additional perspective on the minuteness of these measurements, nanograms are equivalent to1 billionth of a gram. One gram is roughly equal in weight to 1 small paper clip. If we were to divide the same paper clip into 1 billion tiny pieces, one of those tiny pieces would equal 1 nanogram.

Table 1. Estrogenic activity of common foods.

Food	**Estrogenic Activity**[a]
Soy flour defatted	755,000,000
Tofu	113,500,000
Pinto beans	900,000

White bread	300,000
Peanuts	100,000
Eggs	555
Butter	310
Milk	32
Beef from implanted steer	7
Beef from non-implanted steer	5

[a] Nanograms of estrogen per 500 grams of food.

Some consumers question whether consuming beef implanted with hormones can cause cancer or early puberty in children. Hormone implanted beef has never been implicated with adverse health effects in humans. However, height, weight, diet, exercise and family history have been found to influence age of puberty. Furthermore, the amount consumed in implanted beef is negligible compared to the amount the human body produces each day (Table 2).

Table 2. Estrogen production in humans and potential estrogen intake from implanted beef.

Item	**Estrogen amount**
Pregnant woman	19,600,000 nanograms/day
Non-pregnant woman	513,000 nanograms/day
Adult man	136,000 nanograms/day
Pre-pubertal children	41,000 nanograms/day
500 g of beef from implanted steer	7 ng

Regarding potential environmental concerns associated with growth hormones, the FDA has determined that the use of natural hormones in beef does not pose a risk to the environment as the amounts administered to calves are much lower than amounts naturally produced by adult cattle. Regarding synthetic hormones, extensive environmental risk studies have been conducted and the FDA has determined that the use of these hormones will not significantly impact the environment.

Most of the beef produced in the US spend most of their lives in a pasture and are then finished in a feedlot where they are given a grain fed diet. Beef that are finished in a feedlot with the aid of growth hormones require less total land mass, less feed crops and create fewer greenhouse gasses per pound of beef produced compared to non growth hormone pasture based finishing systems.

Consumers that prefer to purchase naturally produced or organic beef raised without growth hormones, should be prepared to pay a premium. Implanted beef reduce the cost and resources required in beef production and that results in lower costs that are passed on to the consumer.

References:

Loy, D., 2011. Understanding hormone use in beef cattle Q&A. Iowa State University Extension. Available at: http://www.iowabeefcenter.org/information/IBC48.pdf