Master Cattleman Quarterly

Oklahoma State University

Good Record Keeping is an Important Component of the BQA Program

Bob LeValley, Oklahoma Beef Quality Assurance Coordinator

Record keeping, either computer or by hand, is a critical management tool. Inventory and usage records can point out inefficiencies. With narrow profit margins, correct inventory management is essential.

To ensure consumer confidence and maintain market share, producers must be able to document the safety of beef products. For example, the industry must be able to prove it has tight control of risk factors with a residue potential through effective documentation.

Animal health products are costly items. Accurate records can highlight inefficiencies on an animal-by-animal basis and prevent ineffective administration of treatments. Furthermore, this information tells the veterinarian which treatments are administered from recommendations so that treatment regimens can be adjusted as animals and environmental conditions change. Records are very important to business success. Effective documentation showing appropriate compliance with training, inventory control, use orders, animal identification, withdrawal and disposal will help avoid liability from a residue. Should a feedyard or individual be cited for a residue violation and that feedyard believes a mistake in identity has been made, good records may be the only proof of compliance. Records will also indicate the complete listing of pharmaceutical products used. Accusations that certain drugs have been used can be avoided when the feedyard or individuals producers can prove it does not use that specific compound.

Computer record systems make extensive evaluation easy and efficient; however, hand-kept record systems are still very effective. Each system has its own merits, so select the best system for your beef production unit.

Treatment Protocol Plan

Ask your veterinarian to develop a Treatment Protocol Plan specific to your operation. Keep the Treatment Protocol Plan on file at the treatment facility.

This concept of a treatment protocol plan may be more familiar to feedyards and larger stocker operations. However, it is a valuable management practice for cow-calf producers as well. It is simply writing down a plan for what treatment(s) are to be used when cattle get sick for various reasons. Also, write down your plan for follow up and/or alternative treatments if the initial treatment does not produce the desired result.

The plan should be reviewed regularly and updated at least every 90 days or as often as is appropriate. As you update the protocol plan, previous versions should also be kept on file for a year or more to refer back to for treatments that have worked in previous situations. When the plan is updated, it must have your veterinarian's signature and date recorded.

Accurate records also allow you to know exactly what is going into each animal or group of animals. This information prevents the re-administration of treatments that have previously failed to work. Furthermore, the information tells the consultant/veterinarian what treatments you are applying to see what treatment recommendations are being followed and judge whether treatment regimens need to be adjusted.

Refer to the Oklahoma Beef Quality Assurance manual (E-105) for examples of hand-written treatment records you can use. Individual treatment records are useful for specific treatment of disease or injury to one specific animal. Group treatment records are used when

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Good Record Keeping is an Important Component of the BQA Program (cont.)

vaccinations or mass medication treatments are administered to the herd. Both record types are similar, but it is important to maintain them separately for quick reference. This will make it easier for cattle to be checked and cleared to assure all withdrawal times have been met. A copy of all treatment records should also be transferred with the cattle at the point of sale, and buyers must be informed if cattle have not met withdrawal times.

Producers can have a positive impact on the quality and consistency of beef products by implementing BQA guidelines. The goal of the BQA program is to assure the consumer that all cattle shipped from a beef operation are healthy, wholesome and safe, and their management has met all government and industry standards.

BQA Certification

Cattle producers and industry personnel can become BQA certified in Oklahoma by in-person training or on-line at BQA.org. Some producers use BQA as a training program for new employees. It is a method to introduce new hires to industry accepted best management practices as well as expectations for cattle management and handling principles. Additional information regarding BQA certification can be found at beef.okstate.edu or the Oklahoma Beef Council website at oklabeef.org. For in-person training opportunities, contact your local OSU Extension Office.

Bovine Leukemia Virus

Barry Whitworth, DVM, Area Food/Animal Quality and Health Specialist for Eastern Oklahoma

Recently, the results of a case-control study were released that demonstrated an association between bovine leukemia virus (BLV) and breast cancer in women.[1] A case-control study does not prove that BLV causes breast cancer. Other scientist would need to corroborate this evidence and a study that proved the BLV infection occurred before the cancer was found would need to be conducted to support BLV as the cause of breast cancer in women. With this type of information in the media, a review of BLV may be beneficial to producers.

Bovine Leukemia Virus (BLV) is a retrovirus capable of causing cancer in cattle. The disease that is caused by the virus may be referred to as Enzootic Bovine Leukosis (EBL), malignant lymphoma, or lymphosarcoma. In the United States it is estimated that 44% of dairy cows and 10% of beef cows are infected with the virus.[2, 3] Most cattle that are infected with the virus are asymptomatic or show no clinical signs of the disease. BLV is responsible for production losses due to increase veterinary cost, reproduction inefficiency, decrease milk production, and deaths. The number one reason for USDA condemnation of a carcass at slaughter is lymphosarcoma. Another source of lost income is non-export of live cattle, semen, and embryos to foreign counties with control programs in place.

Cattle are infected with the virus when blood is transferred between animals. Lymphocytes, a particular white blood cell, are the specific cells that are infected with the virus. Transfer of blood may occur through contaminated needles, instruments used for castration or dehorning, tattoo instruments, palpation sleeves, or fly taggers. Calves may be infected in the uterus or during the birthing process. Calves can also be infected from colostrum, but this appears to be rare. Biting insects may play a part in transferring the virus but the evidence is lacking. Many animals have been experimentally infected with the virus but only cattle, water buffaloes, and capybaras are infected naturally.

Cattle that are infected with BLV have three possible outcomes. The most common outcome is an animal appears normal. Another 30% of the cattle will have an elevated lymphocyte count that is referred to as persistent lymphocytosis (PL). Less than 5% of the cattle with BLV will ever develop lymphosarcoma. Even though most cattle never develop cancer, some evidence exist that cattle infected with the virus have decreased milk production, higher cull rates, and may be more susceptible to infections. Research has demonstrated that a susceptibility to persistence lymphocytosis and lymphosarcoma is genetically determined. Research also indicates that certain cows have a genetic resistance to virus and tend to remain in the herd longer than their BLV infected herd mates. This may play a role in controlling the disease in the future.

When producers present cattle that have lymphosarcoma, the most common complaints are loss of appetite, weight loss, fever, eye problems, digestive problems, problems walking, hind limb paralysis, or enlarged lymph

Bovine Leukemia Virus (cont.)

nodes. Most cattle are three years old or older before tumors develop. The clinical signs of the disease are associated with the location of the tumor. For example, if a tumor is located in the spinal cord, a cow will have paralysis or problems walking. Some of the common sites for the tumors are the heart, abomasum, spleen, intestines, liver, kidney, omasum, lung, epidural space, and uterus.

There are two important aspects to diagnosing BLV. One is diagnosing the infection and the other is identifying the tumor. BLV infections can be determined by testing the animal's blood for the presence of the antibodies to the virus. Since no vaccine is available for BLV, the presence of antibodies to BLV indicates exposure to the virus. A sample of the tumor must be submitted for histopathology to determine if the animal has lymphosarcoma.

Currently no treatments exist for cattle that are infected with BLV. This makes prevention a priority. Prevention of BLV requires reducing the transfer of blood. This may be accomplished by changing needles between cattle, by using a new palpation sleeve for each cow, and by keeping instruments clean and free of blood. Calving pens should also be kept clean and disinfected. If feeding colostrum, feed frozen or pasteurized colostrum to calves since this inactivates the virus. Controlling insects may be beneficial. Eradicating the disease requires testing and culling infected cattle until no positive cases are found for 2 years. This may not be economically feasible in a highly infected herd.

Bovine Leukemia Virus will continue to be a problem in the United States until a vaccine is developed or an economic incentive to eradicate the disease develops. Until that time, producer should follow proper biosecurity to do all they can to prevent the spread of the virus. If producers would like more information on BLV, please contact their local veterinarian or county extension educator.

References

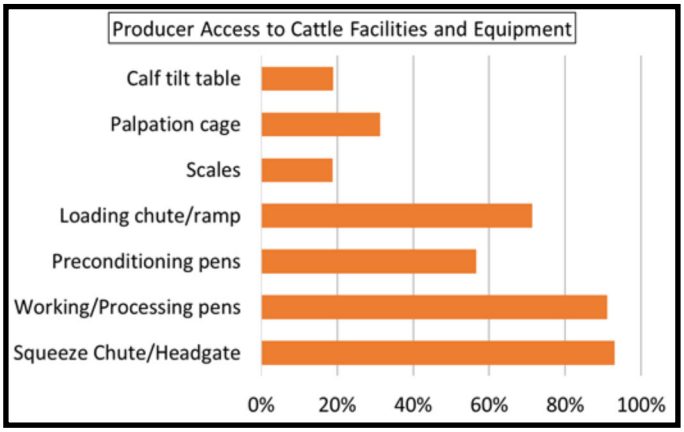
[1]Buehring GC, Shen HM, Jensen HM, Jin DL, Hudes M, Block G: Exposure to Bovine Leukemia Virus is Associated with Breast Cancer: A Case-Control Study, PLoS One. 2015; 10(9):e01344304.

[2]APHIS, Veterinary Services, Center for Epidemiology and Animal Health, USDA. Bovine Leukosis Virus (BLV) on U.S. Dairy Operations. Information Sheet, October 2008.

[3]APHIS, Veterinary Services, Center for Epidemiology and Animal Health, USDA. Bovine Leukosis Virus (BLV) on U.S. Beef Operations. Information Sheet, February 1999.

A Quick Look at Producer Cattle Handling Facility Access

Kellie Curry Raper, Livestock Economist and Derrell Peel, Extension Livestock Marketing Specialist



Cattle Facilities and Equipment Access Type (%)	Own	Co-Own/ Share	Rent/ Lease	Borrow
Calf tilt table	16.8	0.7	0.2	0.4
Palpation cage	28.2	0.6	0.3	0.2
Scales	15.9	0.9	0.2	1.0
Loading chute/ramp	64.0	1.1	1.5	1.5
Preconditioning pens	52.4	0.7	0.6	0.6
Working/Processing pens	84.8	1.2	1.3	1.3
Squeeze Chute/Headgate	87.1	1.8	1.8	1.8

Source: 2017-2018 OSU Beef Management and Marketing Survey

Many Beef Markets Determine Cattle Value

Derrell S. Peel, Charles Breedlove Professor of Agribusiness/Extension Livestock Marketing Specialist;
Lauren Clark, Graduate Research Assistant in the Department of Agricultural Economics, Oklahoma State University

What determines the value of your calves? Calf value, i.e. price, is determined as part of a very complex set of cattle and beef markets. Of course, value in any market comes from final consumer demand. In the cattle industry it is a long way from consumer demand for beef through multiple cattle production sectors and a vast array of beef product markets to calf prices.

The entire cattle supply is the result of calf production in the cow-calf sector. However, demand for calves, and thus the economic signals for cow-calf producers to produce calves, comes from the flow of cattle across multiple production stages. Focusing on cattle (rather than beef), for a moment, the value of fed cattle at the point of slaughter comes from packer demand for finished cattle produced in feedlots. Feedlot production of fed cattle drives demand for feeder cattle needed for feedlot finishing. Some calves enter feedlots immediately at weaning, meaning that feedlot demand for feeder cattle directly determines calf value. In many cases, however, feeder cattle move through a stocker or backgrounding phase where demand for stocker cattle represents the direct demand for calves. Out of this complex set of derived demands, cow-calf producers see calf prices that attempt to incorporate a large set of information about what, how much, where and when calves are needed to start the supply process that results in beef production for various consumer markets.

Once a fed animal is slaughtered, beef markets become even more complex. Unlike most product markets in which a final good is assembled from various inputs, the beef industry is a disassembly process where the fed animal becomes many different products, each of which operates in a different market. Making things even more complex is the fact that many beef products interact with each other in demand. For example, the demand for a Ribeye steak is likely impacted by the price of Strip steaks, Tenderloin, and other beef cuts in addition to other commonly recognized demand factors such as competing meats (pork and poultry), consumer incomes, etc. The price of fed cattle is the net effect of the interaction of this complex set of beef product markets that determine total carcass value, which can be translated into fed cattle value.

Understanding total carcass value is no easy task and is made more challenging due to the dynamics and evolution of beef markets. Consider, for example, the impact of isolating a new value-added beef cut, as has been done with the Flat Iron steak. The Flat Iron is created by separating the infraspinatus muscle from the Top Blade of the shoulder clod in the Chuck primal and fileting the muscle in half to get Flat Iron Steaks. While the Flat Iron is priced five or more dollars a pound more than a Shoulder Clod roast product at the retail level, there are additional costs to fabricating. Not only does this add time to the fabrication line as more labor is required, but there are also residual products left after fabrication that must be marketed separately, often as products for further processing or used as trim for ground beef, both of which will most likely be sold for a lower price. And the addition of Flat Iron steaks adds another steak that may impact the demand for traditional steak cuts…and so it goes.

Or consider the impact of new export demand for specific beef products. This may have significant ripple effects in other beef markets, especially markets where product use is very price sensitive, such as Round or Chuck products that move between product and grinding markets. The Chuck Roll and Chuck Clod in particular, along with short ribs and navals are being exported in growing quantities to Asian markets while Inside Round and Eye of Round are often exported to Mexico and Canada. While exports are beneficial to the U.S. beef industry, this new demand has domestic impacts as well. The Chuck Clod, Chuck Roll, and many round products are sold domestically both as whole muscle products and as a lean substitute for ground beef. As over 40% of beef consumption in the United States is in the form of ground beef, it has become increasingly difficult to find enough lean trim to mix with fed carcass trim. This results in more whole muscles being ground, most often from the end meats. It is increasingly challenging to balance both domestic and international demand for whole muscle, trim, and ground beef; and understanding total carcass value and how it changes is a very difficult task.

The calf price you see reflects a huge set of information about the demand for a vast array of products and the characteristics that influence beef consumption and production at many levels beyond the cow-calf sector. It is not always easy to interpret what that single price signal is telling you and sometimes we wish economic signals were stronger and more clear to the various levels of the industry. However, it is remarkable that prices are able to coordinate, as well as they do, such a complex set of markets that make up the beef industry. Meanwhile, to you it is merely a question of whether calf prices are high or low…

Why Have a Calving Season?

Glenn Selk, Professor Emeritus, Beef Cattle Reproduction, Animal Science, Kellie Curry Raper, Livestock Economist, Department of Agricultural Economics

Commonly asked questions in the cattle industry in the Southern United States include: "If I 'pull' the bulls out for part of the year, won't I lose an opportunity to get a few calves? Should I leave the bull out with cows year-round?" Let's evaluate the economic value of a shorter breeding season.

Impact on Cost per Cow

Analysis of data from 394 ranches from the Texas, Oklahoma, and New Mexico SPA (standardized performance analysis) finds a positive relationship between number of days in the breeding season and production cost per hundredweight of calf weaned (Ramsey et al 2005). They also find a negative relationship between number of days in the breeding season and pounds of calf weaned per cow per year. The range of breeding seasons in the data set was from extremely short (less than one month) to 365 days, that is, continuous presence of the bull.

In the ranches represented, each additional day in the breeding season decreased the average pounds of calf weaned per cow per year by 0.158 pounds and increased the annual cost of producing 100 pounds of weaned calf increased by 4.7 cents. The producer that leaves the bull out year-round (365 days) would sell 45.82 fewer pounds of calf per cow per year on the average than producers with a 75-day breeding season. That same producer would have had $13.63 greater costs per hundred weight of weaned calf than the producer who implemented a 75-day breeding season. Recall that this study was done in 2004 so these cost estimates are likely even higher now.

Calf Value

Producers often overlook the value that a defined calving season can add to calves, though the benefits are well documented. Surprisingly, Figure 1 reports that only 34% of Oklahoma producers surveyed in the 2010 Oklahoma Beef Management and Marketing survey indicated that their cow herd management included managing for a calving season where at least 80% of calves were born within a window of 90 days or less.

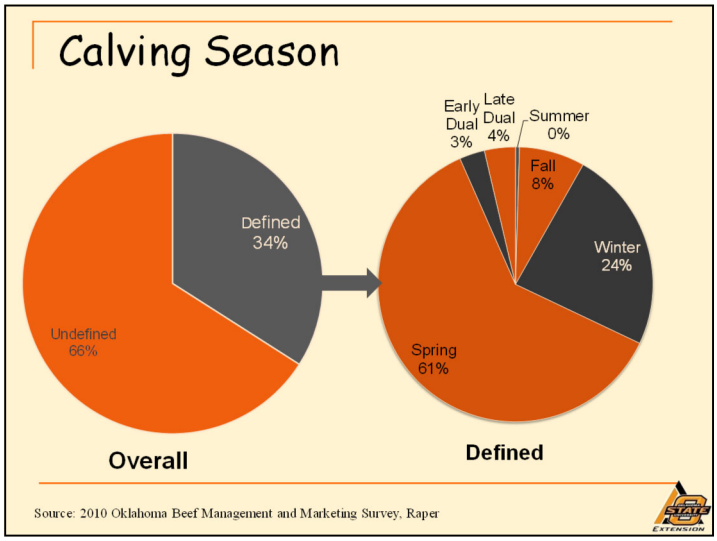
How does a defined calving season add value? When the calving period is defined as a relatively narrow window of time, it facilitates vaccination implementation, weaning, and other health management practices when calves are within a narrower age range. Additionally, larger lots of uniform calves can be marketed and this has value, even in small increments. Increasing lot size from a one-head lot to a five-head lot increased calf value on average by approximately $17/head in Oklahoma auctions with an increase of approximately $25/head for a ten-head lot over a one-head lot (Mallory, et al. 2016). This suggests that even small producers can benefit from a strategic calving season.

The Takeaway

Research results indicate that longer breeding seasons lead to lower pounds of weaned calf per cow and higher costs per pound of weaned calf. Shorter breeding seasons facilitate implementation of health management protocols and result in larger lots of uniform calves for sale.

Mallory, S., E.A. DeVuyst, K.C. Raper, D. Peel, and G. Mourer. "Effect of Location Variables on Feeder Calf Basis at Oklahoma Auctions." *Journal of Agricultural and Resource Economics* 41(2016):393-405.

Ramsey, R., D. Doye, C. Ward, J. McGrann, L. Falconer, and S. Bevers. "Factors Affecting Beef Cow-Herd Costs, Production, and Profits." *Journal of Agricultural and Applied Economics* 37(2005):91-99.



Cow-Calf Operations: A Time to Plan

Roger Sahs, Assistant Extension Specialist

For many cow-calf producers, 2018 was another challenging year. One indicator of the financial struggles in the beef industry is to look at the economic returns in the cow-calf sector (Figure 1).

For many years, the Livestock Marketing Information Center (LMIC) has estimated cow-calf returns for market analysis purposes. This examination is not survey-based and does not reflect any individual operation. It is important to note that the returns incorporate cash production costs plus pasture rent and assumes a commercial size herd that weans and sells calves in the fall. While these estimates do provide a time-tested glimpse into national-level production decisions by cow-calf operations, the returns are best interpreted in a broad context, focusing on the direction of change.

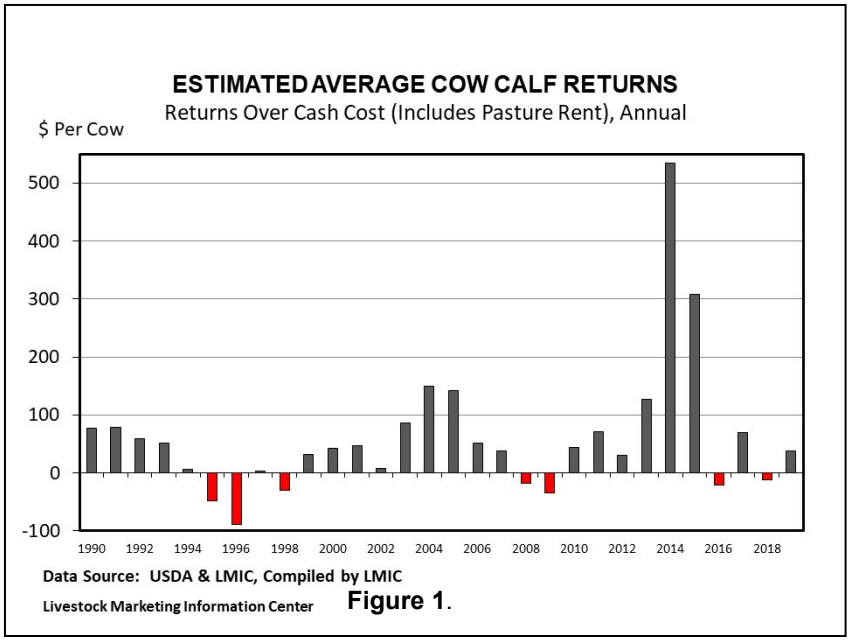


Figure 1.

On a per cow basis, cash returns for 2018 are expected to be very tight and slightly negative. While the estimated loss per cow in 2018 is smaller than 2016, the tight margins are nothing like the record earnings received several years ago. Strong beef demand was the key in 2018 and will be critical as higher beef production carries over into 2019. The preliminary 2019 forecast is for positive returns over cash costs and the situation may further improve by 2020.

While the estimates provide an economic barometer of the cow-calf sector, there is a large variability in individual producer profitability. Even in the "good years" some producers are losing money and on the flip side, some producers are making money in the "bad years". This is important because it indicates there are management changes that producers can make to improve their finances. Profitability often boils down to how well the producer controls costs. In the current market price environment, it is critical to know your costs and make sure your operation is as cost-effective as possible. That means keeping accurate production and business record and utilizing enterprise budgets as a planning tool.

OSU enterprise budgets can help explore different ways of making a profit. As a business planning tool, they can identify the production and financial risks of alternative plans before resources are shifted or committed. Budget planning does require time and effort, but it can help manage the volatility and uncertainty inherent of the cattle industry.

Simple cost and return summaries that allow users to quickly customize their operations can be found at the OSU enterprise budget website at http://www.agecon.okstate.edu/budgets/. In addition, a free iOS cow-calf budget app is also available to quickly generate and save cow-calf budgets. The Cow-Calf Budget app is available for use on the iPhone or iPad and can be downloaded from the Apple App Store at: https://www.apple.com/ios/app-store/.

Beef Cattle Facts from *Oklahoma Agricultural Statistics 2018*

Oklahoma's beef cow inventory stood at 2.13 million beef cows on January 1, 2018, while the 2017 calf crop was 1.95 million head, an increase of 4% over 2016's crop. Statewide, there were 410,000 beef cow replacement heifers and 330,000 cattle being fed for slaughter. The average value per head of all cattle and calves on January 1, 2018 was $1,100. Total inventory value of all cattle and calves was $5.61 billion.
https://www.nass.usda.gov/Statistics_by_State/Oklahoma/Publications/Annual_Statistical_Bulletin/ok-bulletin-2018.pdf

Bucking the Trend in Winter Supplementation

David Lalman, Extension Beef Cattle Specialist, Oklahoma State University

Typically, range supplements that are provided in the cube or cake form (usually ¾ inch pellets) range from 20 to 42% protein, on an as-fed basis. In fact, mid-protein range cubes (around 20% protein) and high protein cubes (around 37 to 38% protein) are the most common sources of protein supplements for beef cows grazing low quality forage or consuming hay. For this discussion, we'll refer to the high protein cubes as 38% cubes. Generally speaking, companies indicate that year-in and year-out they sell around 3 times more of the 20% protein feeds. At least some of this popularity for the lower protein product is because it can be, and is, used in a broader range of feeding situations. The one-size-fits-all concept. Nevertheless, many cow/calf producers may be using 20% cubes when 40% cubes would accomplish the same results at a lower cost.

Forage grown on the farm or ranch is almost always the cheapest source of energy for beef cows. Consider a situation where ample warm season native grass forage and (or) hay is available for a set of spring calving cows. Fortunately, this may be a common situation in Oklahoma this year. Warm season native grass forage protein concentration is often between 3 and 6 percent by November and that it usually declines through the winter to around 2 to 4 percent. Because a gestating cow's protein requirement is around 8% of diet dry matter, protein supplementation results in dramatic improvement in forage utilization in this situation. This is primarily the result of the supplemental protein increasing forage intake and forage digestion. Another way to look at it is that protein supplementation effectively allows cows to harvest more energy from the forage that has already been produced. There is no need to buy a lot of something that has already been produced from the land resource. In short, when ample low protein forage is available for cows, a small amount of supplement that is high in protein is usually the most cost effective supplementation program for beef cows. Certainly, different forage types may contain greater than 8% protein and in these situations, no supplemental protein would be necessary during mid-gestation and only small amounts may be required during late-gestation and after calving.

The feeding rate of any supplement should be determined by the nutrient gap (that which is lacking in the forage) that needs to be filled. Remember that the goal in the case of a spring-calving cow is to get her through the winter and calve in a body condition score of 5, which is moderate: not fat and not thin. First-calf heifers should calve in body condition score 6.

If it is determined that the cows need around 0.8 lb of protein supplement per day, then 2 lb of a 40% product or 4 lb of a 20% product is called for. On the other hand, if past years' experience indicates that the cows grazing a particular winter forage base thrive on 2 lb of 20% cubes, then perhaps 1 lb of 40% would do!

Granted, there are times when feeding a larger quantity of a lower protein product is a wise thing to do. These circumstances might include: cows are thin going into the winter; extremely limited forage supplies, or extended periods of extreme cold, wet weather just prior to and during the calving season. However, in years with ample supply of low protein forage and none of the previous conditions, feeding the smaller, more concentrated protein package (or "bucking the trend") should save money. Assuming a 150-day supplementation period, the difference in feed cost to a spring-calving cow could be $15 to $20.

Over the years, a lot of producers may have fallen into the trap of gradually increasing feeding rates (feeding 20's and more than four pounds?) to insure minimal reproductive failure. After all, research has proven time and again that "managing" cows to thin condition at calving time is a sure way to increase the rate of reproductive failure. However, perhaps SOME reproductive failure could be a good thing to determine which cows should stay and which ones you might be better off without. Bucking the trend or feeding adequate protein with minimal energy supplementation should be coupled with intentional selection of cattle that are a good match for your forage resources. Briefly, this means purchasing genetics that are moderate in mature body weight, moderate in milk production potential and moderate in growth.

Private Pesticide Applicator licenses will expire December 31, 2018!.

Private Applicators are "any person who uses or supervises the use of any restricted use pesticide for the purposes of producing any agriculture commodity on property owned or rented by the person or his employer or on the property of another person's (if applied without compensation other than trading of agricultural commodities or person services between producers)."

Several counties are offering Pesticide Private Applicator safety, renewal and new applicant training sessions. Some of those are on this partial list, but there are likely other workshops not listed here. If you don't see one listed near you, contact your local OSU County Extension Office for more information.

- Dewey Co. (TBA) – Dec 10th
- Alfalfa Co. (Cherokee) – Dec 13th @ Noon
- Dewey Co. (Vici) – Dec 13th evening
- Roger Mills Co. (Hammon) – Dec 17th @ 1pm
- Roger Mills Co. (Cheyenne) – Dec 17th @ 5pm
- Woodward Co. (Woodward) – TBA
- Ellis Co. (Shattuck) – TBA
- Canadian Co. – TBA (January held in evening)

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