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Is Spraying for Weeds Worth the Money?

JJ Jones, Area Ag Econ Specialist

Over the last twelve months, agricultural input prices have climbed to high levels. Weed chemical prices for 2, 4-D and Glyphosate have increase by 33% and 91% ,respectively. These price increases have producers asking the question. “Is spraying weeds in my pasture or hay meadow worth the cost?”

The answer to that question, like many others, is that it depends. It depends on how much weed pressure you have. It depends on the product that plan to use and how much you will use. It also depends on your assumption on how effective your spray application will be and what value you use for the forage that is produced.

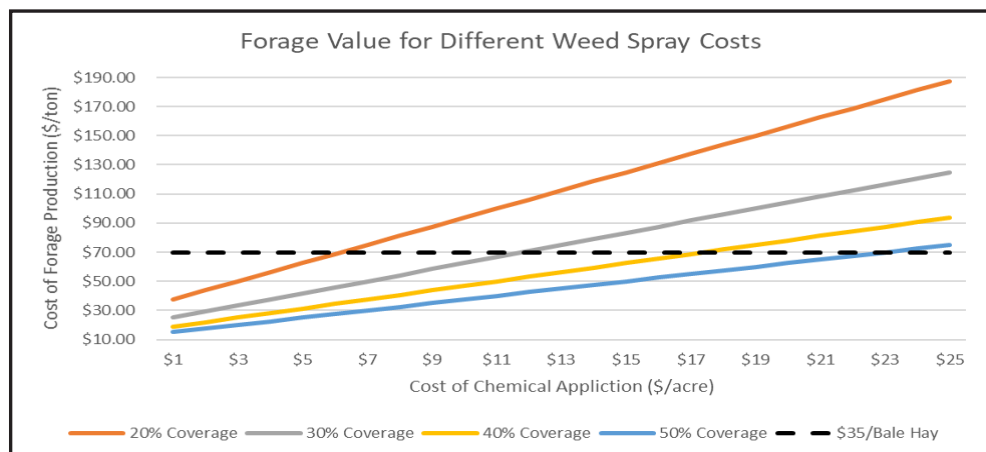
The chart below compares the value of the forage produced when weed spray is used. It assumes that for every 1 lbs. of weeds eliminated, 1 lbs. of forage will grow in its place. It also assumes that the chemical application is 80% effective and there is a \$5/acre spraying cost. The dashed black line represents the value of forage when purchased as hay at \$35/bale for 1,000 lbs/bale. Therefore, when the

line representing the value of the forage produced by spraying for weeds is below the black line, it is more cost efficient to use chemicals than to buy the forage.

Of course, the chart shows that the higher the weed coverage, the better the value of the forage produced by spraying. When looking at the 30% weed coverage level, it is more cost effective to spray until the cost of the chemical goes above \$12/acre. Now that cost threshold drops to \$6/acre with just 20% weed coverage and goes up to \$23/acre with 50% weed coverage.

The bottom line is that weed spray applications are still affordable and cost efficient given certain situations. Producers need to evaluate their weed coverage level and cost of the type of chemical needed for their own situation to make the proper decision.

For more information about weed spray chemicals and applications, please visit your local OSU county extension office.



Six Estate Planning Documents EVERY Rancher Needs

Dr. Shannon L. Ferrell – Extension Specialist, Agricultural Law

I have been overwhelmed with requests for help with farm transition planning and estate issues since the beginning of the pandemic, and sadly many people reach out to me too late for anything to be done. The time to have your critical estate planning documents in place is well before you need them, not from your hospital bed.

A clear transition plan is critical to preserving the farm and ranch for the next generation, and a crucial piece of any plan is making sure certain core documents are in place and ready to go. Nearly twenty years of experience in dealing with dozens of families with both excellent transition plans and some with a disastrous lack of planning have taught me there are six documents *every* rancher (and for that matter, *anyone*) needs to have in place:

Guardian nomination for minor children: If you have children under the age of eighteen, the guardian nomination document specifies your preference for who will be granted guardianship of the children if both of their parents pass away. Both parents need to agree on the guardian nomination, even if the parents are divorced. Be certain to talk to your nominee and confirm they are willing to serve, and designate alternates if your first choice is unavailable for any reason.

Beneficiary designations on investment / saving accounts: Most investment accounts like 401(K)s, IRAs, and savings accounts give you the option of designating a beneficiary to receive the account after you die. Take advantage of this free and highly effective estate-planning tool, and make sure to designate alternative beneficiaries if you can (for example, you may want to designate your spouse as primary and a child as an alternative).

Durable powers of attorney for business and healthcare: A durable power of attorney for business gives the holder the ability to handle your business affairs such as paying bills and executing contracts, even if you are unconscious or cannot communicate. A durable healthcare power of attorney gives the holder the power to provide informed consent for healthcare procedures on your behalf. You can give both powers to one person or separate them. Talk to the person (or people) designated to confirm their willingness to serve

and designate alternates if the first choice is unavailable.

Advance directive for healthcare: The advanced directive for healthcare (sometimes called a living will) specifies what life-sustaining measures you want used if you face a terminal condition, are persistently unconscious, or have an end-stage condition. These decisions can be difficult, but they are also absolutely critical. The Oklahoma advance directive form also allows for selection of a health care proxy (see the discussion of durable power for healthcare above) and for organ donation preferences. It is crucial to discuss your advance directive decisions with your family.

Long-term care insurance: Thankfully, many of us are living longer, but that also means more and more people need long-term care, whether in a nursing home, assisted living center, or other facility. Ranchers are naturally concerned about how the costs of such care may affect the finances of their operation. Long-term care insurance, when purchased relatively early in life, can be a very cost-effective tool to manage this risk. If such insurance is not an affordable option, talk to an elder care attorney and financial planner about planning for long-term care expense management.

Will: Finally, we come to the will. Everyone, and I mean *everyone*, needs a will. At a bare minimum, do a deep-dive inventory of your assets and debts, determine which liquid assets should be used to pay off any remaining debts (and perhaps which illiquid assets as well), and engage an attorney specializing in estate planning issues to prepare your will and ensure it is properly executed. Talk about your will with your heirs to avoid surprises and manage expectations while you are alive. Make sure that your original will document is kept in a safe place that can be accessed by your executor after your death. Be sure to select an executor who is able and willing to serve in the role, and name at least one alternate as well.

Should you have life insurance? Perhaps a trust? Numerous other tools may be important to you, so stay tuned for a future article on that front. In the meantime, make an appointment with your attorney, accountant, and financial professional *today* and get the process started.

Upgrade Your Cattle with Preconditioning

Paul Beck, OSU Department of Animal and Food Sciences

Our customers (stocker operators and feedlots) want matched sets of calves that are weaned, castrated, dehorned, familiar with water and feed sources and immunocompetent. What is “immunocompetent”? That is simply a fancy way of saying that the calves can respond appropriately to stressors and disease challenges, and if they get sick, their immune system will be able to work with the antibiotics we provide to answer the challenge. Calves need to have a sound, balanced nutritional program and be free from internal parasites in order to have an immune system fit enough to withstand the marketing and transportation channels of our beef production system. Buyers are willing to pay extra for these calves, last year the average premium for OQBN certified preconditioned calves was \$15/cwt. Why are buyers willing to pay extra for these calves?

Research at Oklahoma State University in the late 90’s showed that finished steers treated for bovine respiratory disease gained less and had lighter carcasses, costing the feedlot operator \$20/head for steers treated only once to \$75/head for steers that were treated multiple times. The reduction in returns is mostly due to reduced performance and carcass quality (79%) and only 21% of the reduction in profit was related to medicine costs.

An evaluation of the health and performance of steers over the feedlot receiving period from OSU shows the health benefits of management post-weaning. This research used high risk steers from auction markets with unknown health background and steers from a single source ranch. The steers from the single source ranch were either weaned and shipped directly to the receiving facility; weaned on the ranch for 45 days without vaccinations before shipping; or were weaned at the ranch, vaccinated, and held for 45 days before shipping. Steers from the auction market had higher incidence of BRD (42%) and the lowest feed intake and performance. Calves shipped directly from the ranch after weaning still had 35% BRD pulls. Steers that went through the whole weaning and vaccination protocol gained more weight than steers in other treatments. Morbidity due to bovine respiratory disease (BRD) was much less for calves weaned on the ranch of origin for 45 days. Total BRD morbidity was not different for calves weaned 45 days without vaccination and calves

weaned 45 days with vaccination. Weaning on the ranch reduces compounded stress of weaning and transportation allowing calves to cope with stressors better.

It’s not just improved health and performance in ‘normal’ situations. Preconditioning has been shown to reduce bodyweight shrink and stress in cattle. Research comparing health and performance responses of auction market calves to preconditioned calves, with and without the presence of a persistently infected BVD (PIBVD) calf in the pen. Calves that are persistently infected with BVD, were exposed to the BVD virus before birth and are a primary source of BVD infection and can continuously expose their pen mates by shedding millions of BVD virus. In this research, calves were weaned, dewormed, vaccinated and kept at the ranch of origin for at least 42 days prior to shipping to the receiving facility. Calves from auction markets were received simultaneously as the preconditioned calves. A calf positive for PIBVD was placed in half of the pens from each source. Preconditioned calves gained more and were heavier than auction market calves at the end of the receiving period. Presence of a PIBVD calf did not affect performance except for the period from receiving day 28 to 42, during this time calves with a PIBVD pen mate gained 0.4 pounds per day less. There were 70% BRD first treatment sick pulls for the auction market calves compared to only 6.7% for preconditioned calves. The presence of a PIBVD calf did not affect first pull rates, but it did increase the number of calves with a third BRD pull in both treatments and the percentage of calves considered to be chronically ill in auction market calves only. Antibiotic treatment costs were 8-times higher in auction market calves than for preconditioned calves. This research confirms that previous management and vaccination can give a level of tolerance to the presence of a PIBVD pen mate and likely results in more resilience to other stressors.

While it is true that we probably should precondition cattle because it is the right thing to do for the calf, the economics of preconditioning indicate it can be profitable for the cow-calf producer. If producers can efficiently feed calves to gain 1.75 to 2 pounds per day, the additional weight sold, reduction in shrink, and the \$15/cwt increased value of the calf will more than cover the cost.

Cattle Market Optimism Clouded by Uncertainty and Increased Input Costs

Derrell S. Peel, OSU Extension Livestock Marketing Specialist

This article is being written at about the three-week mark of the war in Ukraine. That is important because the situation in Europe is very fluid and will continue to evolve. Unlike a weather event or more typical economic or market shock, this is entirely a political/military event which makes it impossible to have a sense of the timeline or magnitude of future situations. Markets do not like uncertainty and most markets, even those not directly impacted by the conflict, have been affected. However, at this point, some of the initial market reaction has subsided a bit as some of the first shock has settled into more on-going monitoring of the situation.

Crop prices, led by wheat and corn, increased dramatically at the outset in late February, and have pulled back somewhat but remain at elevated levels. Higher feed prices will push feedlot cost of gain even higher in coming months and will keep supplement costs higher for cow-calf and stocker producers. Fertilizer prices are sharply higher and likely to remain so because the Ukraine and Russia are major exporters of fertilizer. This will significantly impact introduced forage and hay production.

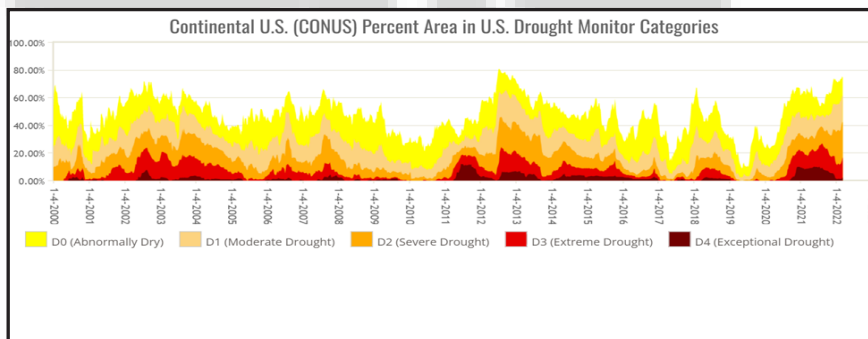
The most broad-based impacts are seen in energy markets. Crude oil markets spiked higher after the invasion of the Ukraine but have since pulled back closer to prior levels. The jump in diesel and gasoline prices impacts farm production costs, supply chains and shipping, and directly impacts consumers.

Live and Feeder futures markets dropped sharply with the war in response to the immediate reality and longer-term uncertainty of higher feed prices, general uncertainty and the potential impacts on beef demand. Cash feeder cattle prices dropped initially with lower futures and higher feed prices. Cash fed cattle prices

have decreased some as well and may have logged an early than usual seasonal spring peak. Global beef markets are not highly impacted directly by the situation. Russia is a relatively minor beef importer, and the war does not have much direct impact on global beef exports or imports at this time. The U.S. has not exported beef to Russia since 2012 nor any pork or broilers since 2014.

Concern about potential impacts on beef demand are even higher now. The additional jump in gasoline prices, on top of already higher beef prices and inflationary pressures may curb beef demand in the coming weeks and months. Consumers are unlikely to stop eating beef but may trade down to less expensive beef products and limit restaurant demand in the face of high beef prices. However, with beef production projected to decline in 2022, tighter beef supplies will offset some demand weakness and support cattle and beef prices. Cattle and beef prices will not likely continue to climb as they have recently but will remain high.

All of these broader macroeconomic and global geopolitical issues may take a back seat to drought impacts if conditions do not improve significantly. Drought expanded across the central and southern plains this winter adding the region to the majority of the west that was already experiencing widespread drought. Drought conditions are currently at the highest level since 2012 (see figure). Drought in 2021 accelerated cow herd liquidation and the potential for even more herd liquidation in 2022 is very real. Continued forecasts for higher cattle prices provide optimism for cattle producers but higher input costs and uncertainty will challenge profitability and producers will face many management and marketing issues in the coming months.



When is the right time to castrate bulls?

Jeff Robe, Oklahoma Quality Beef Network Coordinator

The practice of castrating animals goes back to ancient times. Egyptian farmers found castrating bovine bulls made the animal much easier to handle. It's doubtful the Egyptians were concerned about the value-added components of their animals. But today, adding value to market cattle is the name of the game and castration is a key component to any preconditioning program that can greatly influence market price premiums or discounts, especially in older bull calves.

Castrating bull calves has become common practice in U.S. beef herds. In 2017, the USDA-APHIS NAHMS Beef Cow Calf study indicated that 62% of commercial cow-calf herds used castration methods in their management practices. Castration has provided economic benefits to both the cow-calf producer and feedlot operators through increased market prices and meat quality. Castration also decreases unwanted pregnancy and increases the safety of workers and other animals.

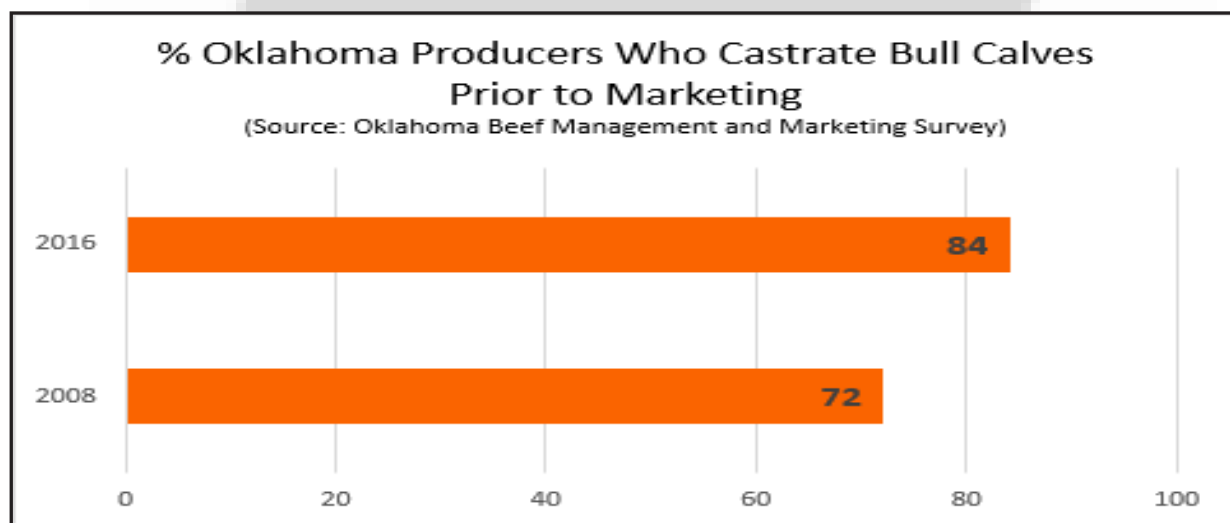
There is a perceived notion that intact bulls have an advantage in body weight gains during the preweaning period and post greater weaning weights than calves castrated at or near birth. However, numerous studies have shown the weaning weights are similar for bulls and steers (approx. 600 lbs.). Advantages in calf weight gain due to testosterone production are presumably realized at a time following average weaning dates closer to puberty.

The timing of castration can influence weight gain and stress management. Studies examining how timing

of castration effects average daily gains (ADG) in cattle castrated either in early life (birth to 2 mo.) or those castrated at weaning or postweaning (6-10 mo.) demonstrated higher ADG during the post-weaning period in the early castrated calves (approx. 0.30 lbs/day greater) than those castrated at or after. The period calves experience weight loss post-castration increases with age as does risk of disease susceptibility. The stress experienced is also related to the time of castration as the level of discomfort and trauma increases with the size of testicles. Calves castrated at 5 ½ months of age or later experienced a greater duration of stress than those castrated at birth or at branding.

Bull calves entering the stocker or feedlot segments of the industry have numerous health and performance factors associated with late life castration such as increased risk or morbidity and mortality, sick treatments and decreased ADG. Therefore, price discounts for bull calves being sold at market can be substantial when compared to steers marketed in the same weight class. Lighter weight bulls (300-400 lbs.) are viewed as less risky, and discounts are generally minimal if any. As the weight of a bull increases, so does the risk. Discounts can average \$6-12/cwt or \$30-60 per head.

A herd management practice that dates to ancient times and still used today has clearly proven beneficial. Utilizing the practice and with a timing that makes sense may be the difference between dollars made or dollars lost.



Wildfire Threat Continues: Things You Can Do to Reduce Damages

Amy Hagerman, OSU Department of Agricultural Economics

We are thankful for the recent rainfall that has offered some much-needed relief for grass and wheat pasture. However, La Nina conditions are expected to continue through the spring and perhaps even into the summer. That means warm, dry conditions. That means the wildfire danger is still high. There are several things you can do now that could help reduce the damages from a fire on your property.

Your home

Start with your insurance protection. Your insurance provider will be happy to answer any questions you might have about the amount and type of coverage on your home and property. One question to ask your insurance agent is whether your home policy will cover any outbuildings like a tool shed. Take a home and building inventory. This can be as simple as walking through your house and outbuildings taking a video on your phone. Take pictures of high-value items and keep digital copies of receipts. Keep important papers in a safety deposit box or fireproof safe. A home inventory is important for many types of events, including a tornado, fire, or robbery.

Next, think about what you need to take with you if you have a chance to grab a bag as you head out of the house. This 'go kit' should include essentials and will be customized to your family. It would include things like a flashlight, spare charger, bottle of water, and a change of clothes. Also, make sure you have the insurance company contacts in your wallet, email account, or 'go kit' so you can call as soon as possible if something does happen.

Finally, when was the last time you discussed a fire plan with family members and workers? It only takes a few hours in an evening or weekend to talk to the people you care about and make a plan. If you have to exit the home from multiple points, make sure everyone who lives there knows which exit to take. If it is a window, make sure they have the right tool to cut out a screen or a fire ladder if it is a second story. Discuss where you will meet at a safe distance, and that it is important to head straight to that point so you can make sure everyone has made it out. If something happens during the day when family members are scattered, is there a common contact in town that can serve as a communication relay? This person could also

serve as the common communication point as out-of-town friends and family **members** try to get in touch.

Your property

Start by visually inspecting the area around your buildings. Remove all flammable materials like brush and firewood from within 5 feet of your buildings. Keep your yard around your home mowed short and trim your trees that are within 5 to 30 feet of your home so that there is 6 to 10 feet of clearance. Your property will look nice and will offer less fuel for fires as well.

Visually inspect the area where you keep equipment. Store equipment on gravel, bare ground, or areas that are mowed or grazed short. Keep wind-blown debris, like tumbleweeds, from accumulating around buildings and equipment. Clean flammable material and fluids off of equipment frequently. Equipment is a high-value investment, and should also be protected as much as possible.

If a fire threatens, close all windows and doors (exterior and interior) of barns, shops, and other buildings. This restricts the airflow and may reduce the damage to the interior spaces of the buildings. The same is true of horse barns, close stall doors and interior doors after the horses have been moved out.

Your livestock

Just as you prepare your home and property, you can protect your livestock and feed. Start, once again, with documentation. Back up your purchase and ownership records digitally. This can be as simple as taking pictures of them with your phone and keeping ownership documents in a fireproof safe. Most livestock disaster programs require proof of ownership to be eligible for benefits. If you have horses held in small areas, like horses in stalls or paddocks, release them into nearby pens or pastures as safety and time allows.

As with equipment, look at your hay with an eye toward fire damage prevention. Store hay on gravel, bare ground, or areas that were mowed/grazed short. Store hay away from your home or buildings, and ideally don't store your hay all in one place. Check your insurance policies for hay coverage and limitations on the amount of hay covered.

Inspect pastures with an eye toward protecting

Wildfire Threat Continues: Things You Can Do to Reduce Damages (cont.)

livestock. If you place mineral feeders in pasture corners, it will create trampled, bare ground areas for livestock to gather. Similarly, feed along fence lines and corners to create livestock refuge areas. When safety and time allows, move cattle and horses to green fields (e.g. wheat pasture) and short grazed areas to improve their chances of being able to move away from a fire. Have a plan in place if fence cutting becomes necessary, including conversations with landlords and the people who own those neighboring pastures.

What if?

Preparedness for wildfire, and any other kind of weather disaster, is often as simple as intentionally play-

ing ‘what if’ as you walk around your property. ‘What if a wildfire were coming toward my property?’ ‘What if I had a fire start in my chemical shed?’ Then, after you have a plan in your head, take actions that will reduce the damages to your home, property, and livestock. As a final thought, always put the safety of yourself, your family and employees, and the emergency responders first. Never get in front of an oncoming wildfire. Respect the firefighters performing their duties; do not interfere with, obstruct, or assault their duties. There are few actions you can take if a fire is already at your door; the time to plan and mitigate damages is well before the fire happens.

Beef Quality Assurance: Cattle Handling Principles

Bob LeValley, Oklahoma Beef Quality Assurance Coordinator

Cattle producers have long recognized and fulfilled the need to properly care for livestock. Sound care and handling practices, based on years of experience and research are known to impact the well-being of cattle, individual animal health and herd productivity. Cattle are raised in very diverse environments and geographic locations. One specific set of production practices will not work for all cattle producers, but, personal experience, Beef Quality Assurance program principles, and professional judgement serve as valuable resources for proper animal handling and care. Animal behavior knowledge will facilitate proper animal handling to the benefit of both the handler and the livestock.

Knowledge of vision characteristics of cattle will help direct movement. Due to the location of their eyes, cattle have a wide-angle field of vision in excess of 300 degrees. This means they have a narrow blind spot which is directly behind them. They can see some colors and can distinguish between individuals/objects based on shape. Cattle have a tendency to move from dark areas to lighter areas, provided the light is not glaring. Shadows can often appear extreme to cattle.

Handling issues related to vision-related behaviors include:

- Keep them in visual contact with other cattle.

- Try to ensure loading ramps and handling chutes are designed to minimize the animals seeing distractions outside of the working area. If cattle can see moving objects and people through the sides, it may impede their movement forward.
- Check for chains, backstops, dogs, or people distractions if cattle are not moving readily through the alley or chute.
- It may help to make sure the area you are moving the cattle into is adequately lighted.
- Paint the handling facilities a single uniform color because cattle may balk at a sudden change in color.

Cattle have a wider range of hearing than most humans. However, they can locate the source of sound as well as human hearing allows. They are sensitive to high frequency sounds. With this in mind, we can expect that loud noises in working facilities should be avoided, but small amount of noise can assist in moving livestock. Noisy gates and other equipment can cause cattle to balk and resist moving forward.

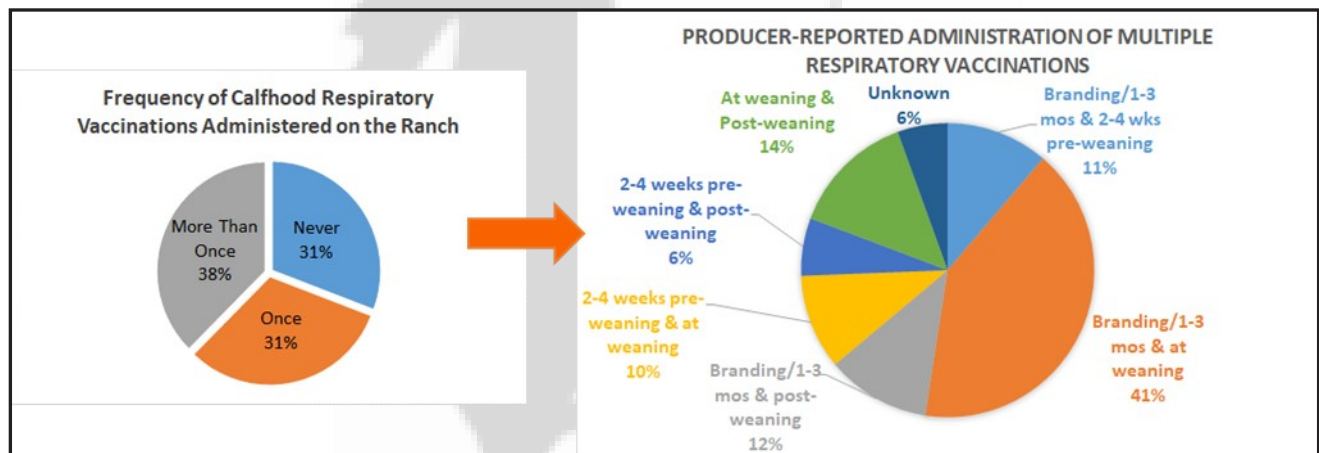
Producers have long been aware that proper handling management based on their knowledge of animal behavior will reduce stress and behavior related issues. Improper handling that does not consider animal behavior may lower conception

Beef Quality Assurance: Cattle Handling Principles (cont.)

rates, reduce immune and rumen function, increase other health problems, cause excessive shrink, and bruising. Make sure to adequately instruct employees of your expectations for low stress cattle handling techniques.

For more information on the Beef Quality Assurance program, or to become a beef quality assurance certified producer, visit BQA.org or contact your county extension agriculture educator.

Producer Reported Calf Vaccinations: Frequency & Timing



Source: Oklahoma Beef Management and Marketing Survey, 2017.

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