



# Master Cattleman Quarterly

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## Will Patch-Burning and Grazing Burn a Hole in Your Wallet?

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Cattle production requires producers to make a series of complicated and intertwined decisions that impact their bottom line, the environment, and the beef industry. These decisions involve reducing costs and increasing revenue while serving as stewards of the land to continue to meet consumer demands. Feed costs, for example, are the largest variable cost for producers, but are offset by grazing rangeland. However, without proper forage management, the profitability of cattle production is affected.

An effective way to preserve rangelands is by using pyric-herbivory - the interaction between burning and grazing- implemented through patch-burning (PB). PB is when a pasture is divided into sections with one section being rotationally burned each year, compared to a more traditional approach of burning an entire pasture every three years. Patch-burning and grazing (PBG) is a rangeland management practice that accomplishes the goal of preserving rangelands while also benefiting overall cattle and beef production.

Benefits of PBG include reduced woody plant encroachment (WPE), wildfire control, drought mitigation, and high-quality forages for cattle. Fact sheets and papers discussing these benefits can be found at *The Prairie Project* website:

<https://www.theprairieproject.org/>

However, many cattle producers are skeptical of adopting the practice. Research conveying the costs and economic benefits of PBG is limited. Therefore, one method of encouraging adoption could be to provide a cost-benefit analysis of implementing PBG to maintain rangelands. The information in the following article conveys preliminary results of research being conducted regarding the costs and potential economic benefits of PBG.

The first step in building a cost-benefit analysis for PBG involved estimating the costs of burning for both PB and traditional burning (TB). Several costs are associated with any type of prescribed burn such as firebreak construction, fuel, labor, and PBA dues. Fact sheets discussing the process of conducting a prescribed burn are below:

[Burn Plan for Prescribed Burning | Oklahoma State University \(okstate.edu\)](#)

[Prescribed Burn Associations | Oklahoma State University \(okstate.edu\)](#)

[Firebreaks for Prescribed Burning | Oklahoma State University \(okstate.edu\)](#)

After analyzing burn costs for both management practices, results show that PB will potentially cost \$2/acre more than TB in the first year. However, these costs are expected to decrease in years two and three due to reduced fuel and labor requirements to construct firebreaks.

High quality forages are a result of PB, allowing for cattle to rely on forages for nutrients rather than a supplemental feed during early winter months. It is estimated the burn costs of PBG result in saving cow-calf producers roughly \$20/head annually on supplemental feed costs in comparison to TB. Additionally, further research is being conducted to quantify the benefit of drought mitigation supplied by PBG through stockpiled forages.

The overall objective of this research is to demonstrate that PBG can potentially be cost reducing and beneficial to cattle producers when considered as a long-term investment and risk management practice. The goal is to provide cow-calf producers with beneficial economic information to answer at least one of the complicated and intertwined decisions they must make to preserve rangelands and maintain the cattle industry.



### Strong Premiums for Oklahoma Quality Beef Network Cattle in 2022

*Kellie Curry Raper, Oklahoma State University Livestock Marketing Specialist*

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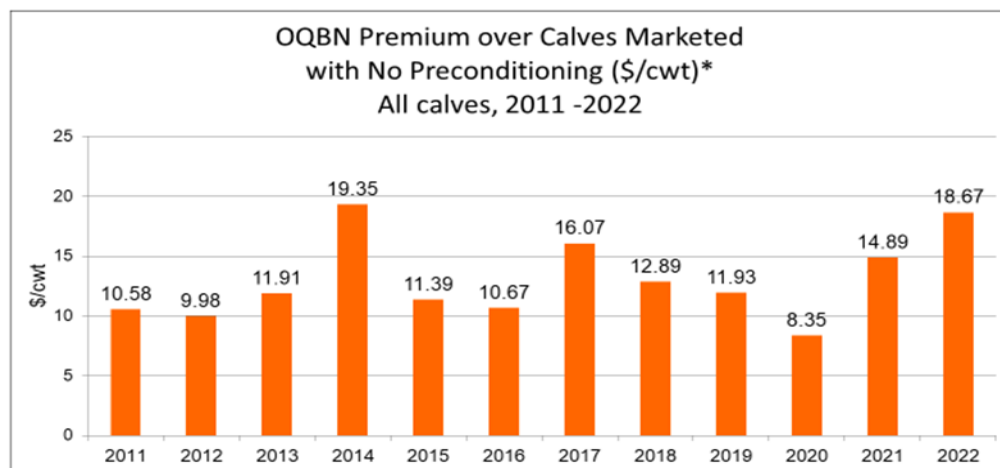
Oklahoma Quality Beef Network producers in Fall 2022 enjoyed the second highest average premiums in program history. OQBN is a third-party certified VAC-45 preconditioning program offered through Oklahoma Cooperative Extension. Extension Specialists guide producers through the calf health management protocol to qualify for certification and eligibility to market cattle through OQBN. OQBN premiums are measured as the weighted average premium for OQBN VAC-45 calves relative to non-preconditioned calves at the same sale. The Fall 2022 overall average premium across locations and weights was \$18.67/cwt, the highest since 2014.

When we break that premium down across steers and heifers, steers averaged premiums of \$18.27/cwt while heifers topped that at \$19.12/cwt (Figure 2). Looking across weight classes, lighter weights tend to bring higher per cwt premiums. The bulk of OQBN lots are marketed as 4 weights to 6 weights. Across those weights, the calculated average premium per head for steers ranged from \$92.25 to \$114.84 and from \$84.24 to \$115.78 for heifers.

The 2022 fall marketing season included 9 fall sales across 6 Oklahoma livestock markets. Total fall enrollment included 2,784 head and 63 producers, with 1,633 head marketed through OQBN VAC-45 certified sales.

Total enrollment when early spring 2023 sales are included topped 3200 head.) The numbers are not too surprising, given that drought forced early weaning and marketing for many producers in the state. Overall, the data used to calculate 2022 premiums includes 10,583 head marketed in 1,252 lots. That data includes 232 OQBN lots. As expected, sales where more OQBN calves or other preconditioned calves were present tended to have higher premiums for those calves, as those sales usually attract a larger number of buyers to compete for preconditioned calves.

Markets never make guarantees and preconditioning is not free. That said, past research indicates that 80% of the time, certified preconditioning with OQBN nets positive returns. OQBN has no minimum requirement on number of head enrolled, so the program is accessible to all producers, large and small. More information about the OQBN protocol, past market premiums, upcoming marketing opportunities, program enrollment and Extension educator contact information can be found at <https://extension.okstate.edu/programs/oklahoma-quality-beef-network/>



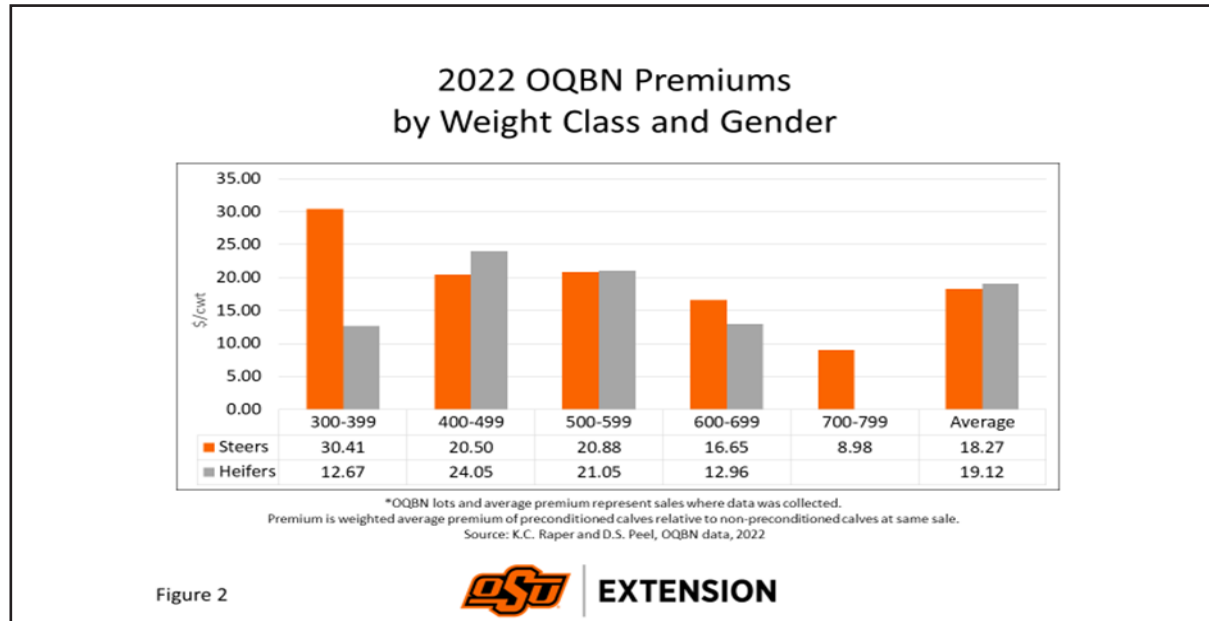
\*Premium is weighted average premium for preconditioned calves relative to non-preconditioned calves at same sale.  
Source: K.C. Raper and D.S. Peel, Historical OQBN data collection

Figure 1



EXTENSION

## Strong Premiums for Oklahoma Quality Beef Network Cattle in 2022 (cont.)



## Let's Start at the Beginning: Beginning Your Farm Transition with an Inventory

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

For some time now, our series has been talking about farm transitions, from the five steps to the farm transition process to strategies you can use for making the transition as smooth as possible. Now that we have taken a look at the whole process, let's dig into each step, starting at the very beginning.

As mentioned elsewhere, 64 percent of farmers and ranchers have no estate planning tools in place. Part of the reason for that might simply be they are intimidated by the process or just don't know where to start. When a task seems overwhelming, there's an easy fix: just take one small step forward. When thinking about the farm transition process, that one small step is starting an inventory of all your farm assets. It may be a lot of work in total, but just beginning the process can give you the momentum you need to get your transition process underway.

The first and most important resource to inventory is your human resource. Who are your family members? List everyone in your immediate family? Collect

their names, birthdays, current addresses, contact information, and Social Security numbers, as that information may be needed for various estate planning documents. Once you've done that, make sure you have your emergency contact information up to date, and confirm with those contacts that they are still willing to serve in that role. If you have designated anyone as a medical representative (i.e. they hold your medical power of attorney or are your healthcare proxy), confirm they are still willing and able to serve in that role. If you don't have anyone in that role, it's time to get someone there!

Beyond your immediate family and emergency contacts, round up anyone who has a financial or emotional stake in your operation. People who receive an economic benefit from the farm, whether they are employees or own assets used in the operation, obviously care about the future of the operation. At the same time, anyone who has an emotional investment in the farm also cares about its future. For example, if someone

## Let's Start at the Beginning: Beginning Your Farm Transition with an Inventory (cont.)

celebrated their childhood Christmases at the family homestead, hunted and fished on the ranch, or spent summers with Grandma and Grandpa there, they may have an interest in what happens to those places. These people are “emotional stakeholders” and even though they may not have a direct economic or legal link to the operation, they can cause trouble if they feel like they are being ignored.

Those are the human resources of the ranch – now to the physical resources of the ranch. In most cases, the biggest single asset class for a ranch will be land. So, round up the deed for every piece of land owned by the operation. We need to see the full legal names of the entities (people, businesses, trusts, etc.) in ownership, as well as the full and correct legal description of the property. Additionally, you need to note the tax basis you have in the property. This may be the purchase price of the property or the value of the property if you received it through an estate – consult your tax professional to make a determination of basis. You will also want to note the current fair market value of the property. If your operation uses any leased land, a copy of the written lease should be added to your transition file (and I KNOW you always have a well-written lease for every lease, right? Right??).

Now we move on to an inventory of all your equipment. Collect the title documents for any titled vehicles (cars, pickups, trucks, etc.) and any other equipment that has a title document. For equipment without a title, document the serial number, make, and model of the item or use whatever other identifying information may be available. As with land, you will need to take note of the items' tax basis and fair market value.

Now we come to inventories of items we produce and items we use to produce them. At the top of the list is are good records for our livestock. Your Master Cattleman book and previous newsletters contain all kinds of information you should be cataloging about your herd. All of that information will also help you with your transition plan. You'll need to know the value of your livestock assets, but in the case of an emergency situation, someone stepping into your role will need to know where livestock are so they can be cared for even in the emergency. In addition to records of your live-

stock, records of both growing and stored crops, feedstuffs, chemicals, veterinary supplies, and any other inventories will be needed.

Thus far, we have been talking about assets used in the business. What about your personal assets? You guessed it – time to round them up as well. Round up the information about all your financial assets, including the bank or investment company where the assets are held, their account numbers, and any other information that might be needed to access those assets in the event of an emergency or death. Again, include the value of those assets and their tax basis, if they have one. Don't stop with financial assets, though; personal assets are important as well. List all your physical assets. Consider what you would want to happen to those items, particularly if they have sentimental value to you or if you know someone else has sentimental attachment to them.

Finally, it is time to inventory some things you might not have considered. What are your goals with respect to the ranch? What are the values that you deem important as you operate it? What is the history of the ranch? Give these questions some thought, and write down your answers. Those answers can have important impacts on your transition decisions.

Yes, completing all of these inventory tasks may take a lot of time and effort, but they are also very “do-able.” Completing your inventory moves you one step ahead in your transition process. It also saves you money; if you just went to your tax professional and attorney and told them you wanted to start your transition planning process, they'd tell you to turn around and do exactly what this article has outlined. You've saved yourself the cost of that initial consultation and also pulled together the information for your professionals, saving that time and expense as well. Further, the process of building your inventory has value in and of itself. Why? Because as you were doing it, you already started thinking about both the role these assets already play in your ranch, and how they need to move through your transition plan.

Once you have completed your inventory, take pride in the fact that you've taken the first important step forward in your ranch transition!

## Certain Over-The-Counter Antimicrobials To Move Under Veterinary Oversight

Rosslyn Biggs, DVM, OSU Veterinary Clinical Sciences

The number of antimicrobials available for use in both human and animals is somewhat limited. It is unlikely that new classes or types of antimicrobials will be available anytime soon. Additionally, we continue to see the development of new strains of various microbes in both human and animal medicine that are resistant to currently available antimicrobials.

On June 11, 2021, the United States Food and Drug Administration (FDA) finalized Guidance for Industry (GFI) #263 requesting that participating animal drug companies voluntarily transition certain antimicrobials from over-the-counter availability to veterinary prescription required over a two-year period. June 11, 2023, is the target date to introduce new prescription labels into the market.

GFI #263 is part of an FDA effort to address antimicrobial resistance. The concept is that medically important antimicrobial drugs should only be used in animals when necessary for the treatment, control, or prevention of specific diseases and with veterinary consultation and oversight. In addition to the focus on animal medicine, similar efforts are ongoing in human health care settings with a focus on judicious use of antimicrobials.

GFI #263 is an expansion of GFI #213. Many producers will recall GFI #213 as guidance that now requires a veterinary feed directive or prescription for medically important antimicrobials used in animal feed or drinking water. GFI #213 also eliminated the use of medically important antimicrobials for animal growth promotion.

Medically important antimicrobials are those products with importance in human medicine. Examples commonly used in beef cattle include antibiotic such as tetracycline and penicillin. Products considered non-medically important in human medicine, such as ionophores used in feed, like monensin and lasalocid, are still available without veterinary oversight.

Currently only 4 percent of medically important antimicrobials are marketed as OTC products for animals. This includes products for companion animals, horses, and food animals. Once the recommendations

in GFI #263 are fully implemented, all dosage forms of medically important antimicrobials approved for use in animals may only be administered under the supervision of a licensed veterinarian, and only when necessary for the treatment, control or prevention of specific diseases. Although animal owners will still have access to medically important antimicrobials, they will need to consult their veterinarian to obtain a prescription.

As a producer, there are ways to prepare for these changes. First, if you do not have an existing relationship with a veterinarian—develop one. Successful treatment of disease and the appropriate use of antimicrobials work best when veterinarians and cattlemen work as a team. Developing this relationship provides the opportunity to strategically evaluate herd health protocols, animal welfare, biosecurity, management strategies, and other operational activities. This relationship can result in economic savings, as well as, enhanced protection of resources.

It is important to remember that a veterinarian-client-patient-relationship is required before a veterinarian can legally write a prescription. Veterinarians can also guide producers on accurately meeting antimicrobial label requirements, including appropriate use and withdrawal. Additionally, treatment protocols and record keeping measures can be developed if not already present in an operation.

Many stakeholders, including consumers, have an increased interest in the judicious use of antimicrobials. It is necessary for beef producers and veterinarians to work collaboratively to respond to changing guidance and requirements so that these medications are effective and available for years to come. Cattlemen and veterinarians working together can make an impact on decreasing the development of infectious agents with resistance. These efforts will contribute to improved medical outcomes to protect antimicrobial options for both animals and people.

## Pelvic Area Measurements in Replacement Heifers

Barry Whitworth, DVM and Brian Freking, OSU Area Livestock Specialist

Pelvic area is an indicator trait of calving difficulty (dystocia) in young heifers. Unfortunately, this management tool is not utilized as often as probably warranted. In first calf heifers, yearling pelvic area serves as a culling tool to remove heifers at risk for calving problems. The ideal time to take pelvic measurements is between 320 days and 410 days of age. A qualified technician or veterinarian should record the vertical and horizontal dimensions of the pelvis

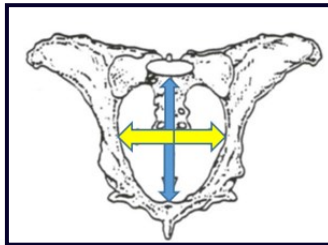


Figure 1. Vertical and horizontal dimensions to determine pelvic area. Source: Beef Improvement Federation.

(Figure 1) to determine the area (multiplication of the vertical and horizontal dimensions) and it should be adjusted according to the following equation:

$$\text{Heifer adj. 365 day pelvic area} = \text{Actual pelvic area (cm}^2\text{)} + (0.27 \times [365 - \text{age in days}])$$

Let us say our measurement is 12 cm horizontal by 13 cm vertical taken on 360 days of age for an example heifer weighing 700 lbs.

$$\text{Heifer adj. 365 day pelvic area} = 156 \text{ cm}^2 + .27 (365 - 360) \text{ or } 157 \text{ cm}^2$$

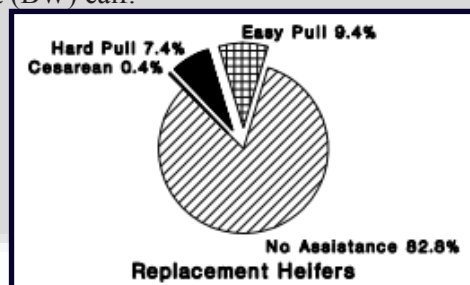
We can now use this number to estimate a deliverable calf birth weight based on the following research summary table.

Table 1. Pelvic Area/calf birth weight ratios for various heifer weights and ages to estimate deliverable calf birth weight.

Heifer Weight (lb.)	Age at Measurement, Months			
	8-9	12-13	18-19	22-23
500	1.7	2.0		
600	1.8	2.1		
700	1.9	2.2	2.6	
800		2.3	2.7	3.1
900		2.4	2.8	3.2
1000		2.5	2.9	3.3
1100				3.4

Since we know the age of the heifer in this example is near 12 months, the number from table 1 is approximately a 2.2 ratio. This resulting estimate is  $157 \text{ cm}^2 \div 2.2 = 71 \text{ lb. deliverable birth weight (BW) calf.}$

Median BW for most calves reported in the Angus breed association fall around 70 lbs. for a heifer calf and 75 lbs. for a bull calf.



Based on the above USDA-NAHMS pie graph if you are experiencing higher pull rates than 15-20% then utilizing pelvic area measurements would be justified.

A pelvic area calculator is available at <https://selectsiresbeef.com/resources/calculators/>.

## Wheat Hay versus Harvest for Grain

Roger Sahs, OSU Associate Extension Specialist

Early spring is an important time to assess the wheat crop and determine end goals and marketing options that will maximize revenue. Current market conditions for wheat along with the price and shortage of hay supplies is setting up a scenario where the growing winter wheat crop may have more value as a hay crop than to harvest it for grain. Current hay markets are higher than normal given the drought conditions over most of Oklahoma and in the meantime, many livestock producers are rationing limited hay supplies before spring green-up. Even if and when better grazing conditions return, many operators will feel the urge to replenish their hay inventories by haying small grains like wheat.

### Partial Budgeting

So, what is the “best” alternative? A partial budget (Table 1) may be used to decide whether to hay or harvest wheat for grain. Partial budgeting is based on the principle that a small change in the organization of a farm business will eliminate or reduce some costs and returns, while possibly also adding or increasing costs or revenues. In the left column, negative economic effects resulting from the proposed change are estimated; in the right column, positive economic effects are summarized. Prices are a main determinant in the decision and are estimated for the future. By combining known

figures with estimates of future yields and prices, the farm manager can compare alternative plans of action for profitability. Prices and yields data should be updated and customized for an individual situation. It is important to note that one factor that can affect haying profitability is that forage nutritive value declines as wheat matures. While harvesting earlier will yield less tonnage, the hay will have greater nutritive value per ton, and should be valued/marketed at a greater price. The budget below is prepared on a per-acre basis and refers to the following scenario:

- Wheat yield = 30 bu./acre  
Wheat price = \$7.75/bu.
- Wheat forage yield = 3500 lbs./acre at heading growth stage or 2.5 round bales @ 1400 lbs.
- Wheat hay value = \$125/ton
- Custom combining = \$27/acre + (\$0.27/bu. over 21 bu.) = \$29.43/acre
- Custom hauling = \$0.27/bu. x 30 bu./acre = \$8.10/acre
- Custom swathing = \$16.09/acre
- Custom round baling = \$16.16/bale = \$40.40/ac for 2.5 bales

<b>Situation: Should I hay my wheat forage rather than combine it?</b>			
<b>Additional Costs</b>		<b>Additional Returns</b>	
Swathing	\$16.09	Wheat hay (1.75 tons @ \$125/ton)	\$218.75
Round baling	\$40.40		
<b>Reduced Returns</b>		<b>Reduced Costs</b>	
Wheat sales		Harvesting	
30 bu. X \$7.75/bu	\$232.50	\$27/a +(\$0.27/bu. X 9)	\$29.43
		Hauling	
		\$0.27 x 30 bu./acre	\$8.10
Total annual additional costs and reduced returns	\$288.99 (A)	Total annual additional returns and reduced costs	\$256.28 (B)
			\$-288.99 (A)
		Net change in income (B-A)	\$-32.71

## Wheat Hay versus Harvest for Grain (cont.)

In our example, the total of the Additional Returns/Reduced Costs column is \$256.28 and the total of the Additional Costs/Reduced Returns is \$288.99. Subtracting the total of column A from B yields a net value of -\$32.71 per acre. This represents the amount of economic gain from haying the forage rather than combining the wheat. Note that with different prices or yields, the conclusion could be different. In our example, if a producer expects to receive \$7.75 per bushel for a yield of 30 bushels per acre, or cut hay in the heading stage, then a hay price of greater than \$143.70 per ton would justify haying rather than harvesting wheat. In some years, haying wheat maybe the more profitable option, especially when grain prices are substantially less than currently forecast.

### Other Management Implications

It is important to consider the expected nutritive value of wheat hay and how this may influence its value on the market. As previously mentioned, hay that is harvested earlier will have greater nutritive value, and should bring a higher price per ton. For young growing

cattle, wheat hay should be cut in the boot stage or as soon as possible after heading to ensure good protein and energy content as well as palatability. If mature dry beef cows are to be fed, harvest can be delayed a little longer to increase yield, but nutritive value and palatability will be sacrificed. In addition, hay buyers may pay more for beardless wheat if cut after heading.

### Conclusion

A partial budget presents a simplified procedure to aid producers in everyday decision-making. Partial budgeting is a step-by-step process for identifying the costs and returns that change due to alterations in the production process. Once these costs and returns are identified, they are weighed against each other to estimate the economic consequences of the change. The results can only be as good as the production and price forecasting data used. While haying your own wheat may remedy a short hay supply, it comes at a cost and those costs should be carefully considered when choosing the best alternative.

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