Master Cattleman Quarterly

Oklahoma State University

Calculating Returns from Dual-Purpose Wheat

Roger Sahs, Extension Specialist

Many producers are making plans for the next wheat crop and trying to figure whether dual-purpose wheat offers the financial rewards necessary to offset the added risk of running stockers through the winter grazing period. Many areas in the major wheat areas of Oklahoma have received plenty of moisture over the past several weeks. Early planting of wheat will be possible once it dries out and wheat could be ready for grazing earlier than usual this fall. Wheat planted before the end of September can be ready for grazing by early November, allowing 120 days of winter grazing by early March and still permit harvesting wheat grain as a dual-purpose crop.

Stockers for winter grazing may be purchased over the next four to six weeks. Timing of purchases will depend on expected availability of wheat pasture and the ability to receive and utilize other feed resources to hold stockers until wheat pasture is ready. The livestock markets will need to be closely monitored over the next several weeks to determine what signals are being sent relevant to what kind of market animals and weight classes are coming into demand that might offer the best opportunity. Sometimes a 550 lb. calf winds up looking more attractive than a 450 lb. calf from a stocker standpoint. Producers will have to determine how that works into their broader management goals.

Profitability often boils down to managing the cost and financial risk associated with growing wheat and running stockers on wheat pasture. There is much at stake here. How can a producer calculate the profit potential from grain and pasture? OSU Extension Current Report CR-212 "Should I Buy (or Retain) Stockers to Graze Wheat Pasture" has been recently updated and outlines the major decision parameters associated with wheat and stocker enterprises. The publication is available from your OSU county Extension office or online at http//factsheets.okstate.edu/.

The economic consequences of utilizing additional wheat forage primarily depend on the following considerations as detailed in the publication:

1. **The costs of producing forage to be grazed**.
   The costs of establishing dual-purpose wheat are frequently higher than grain-only systems. Heavier seeding rates for dual-purpose wheat are recommended and additional nitrogen may be needed to maintain grain yields if grazing is allowed.

2. **The returns to livestock utilizing small grain forage or the potential income from grazing leases.**
   Livestock returns depend on factors such as purchase price, supplemental feed costs and other production inputs, the amount of forage produced before winter, the efficiency of livestock converting forage to weight gain, and finally, the sale price of cattle. Wheat producers who do not have the time and/or the money to invest with running stockers may consider to lease grazing rights to others.

3. **Forage yields as the amount of forage produced is influenced greatly by the planting date, weather, variety selection, and fertility.**
   The sample wheat and stocker budgets illustrated in CR-212 combined with forage production data and stocking rate considerations provide the necessary information to see whether the wheat and stocker returns complement each other.

Vol. 40 Sept., 2018

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Calculating Returns from Dual-Purpose Wheat (cont.)

The sample wheat and stocker budgets illustrated in CR-212 combined with forage production data and stocking rate considerations provide the necessary information to calculate the wheat and stocker return worksheet shown in Table 1. It is a good way to find out if returns from the stocker enterprise complement the returns from the grain enterprise.

While the example worksheet shows a marginal situation regarding returns to grain and pasture, keep in mind that they are based on a strict set of assumptions and conditions as presented in the publication. You are encouraged to tailor the worksheet shown in the publication given your own wheat and stocker budgets. Using accurate up-to-date production records will help predict your budget costs. Your situation and bottom-line maybe different! Sample crop and livestock budgets are available to view and download at the OSU Enterprise Budget website at www.agecon.okstate.edu/budgets. The cost and return summaries allow quick and easy changes. Additional information on OSU enterprise budgets is also available through your county Extension agricultural educator.

Table 1. Worksheet for Calculating Per Acre Returns to Dual Purpose Grain & Forage Production

Dual Purpose Wheat Returns to Land, Overhead, Risk and Management

(Without Government Payments)

	Example	Your Value
Total Receipts	$217.07	_____
- Total Operating Costs (custom harvest adjusted)	-179.16	_____
- Total Fixed Costs	-19.32	_____
Wheat Returns per Acre	$18.59	_____ (A)
Stocker Returns to Land, Overhead, Risk and Management		
Total Receipts	$1,088.82	_____
- Total Operating Costs (w/additional fertilizer/seed)	-1,109.73	_____
- Total Fixed Costs	-13.15	_____
Stocker Returns per Head	-$34.06	_____ (B)

Stocking Rate (Head per Acre):

Head/Acre = Lbs DM Produced per Acre / (Lbs DM per Lb of Gain) x (Lbs of Gain per Head)

= 1,800 / 10 x 240 _____

= .75 _____ (C)

Stocker Returns per Acre = Stocker Returns per Head (B) * Head/Acre (C)

= - $34.06 x .75 _____

= - $25.55 _____ (D)

Total Returns (S/A to Land, Overhead Risk, and Management		
Wheat Returns (A)	$18.59	_____
+Stocker Returns (D)	-$25.55	_____
Total Returns	-$6.96	_____

Use Preconditioning to Boost Returns on the 2018 Calf Crop

Dana Zook, West Area Livestock Specialist

A hint of fall is in the air which means producers who own spring calving herds are preparing to wean and ready calves for fall sales. Markets look strong in the coming season, but there are programs that have historically offered a premium for calves even in times of high prices. There are many preconditioning options available for producers; however, a program with a proven track record is the Oklahoma Beef Quality Network (OQBN).

OQBN and other preconditioning programs have been designed to aid producers in making preconditioning decisions and capturing value of preconditioned calves at market. One way this is done is through the OQBN Vac-45 verification program. Cattle meeting the management and vaccination requirements are verified by Oklahoma Cooperative Extension personnel and can be marketed as OQBN Vac-45 cattle. Once verified, producers have the option but are not obligated to market cattle in a certified OQBN sale.

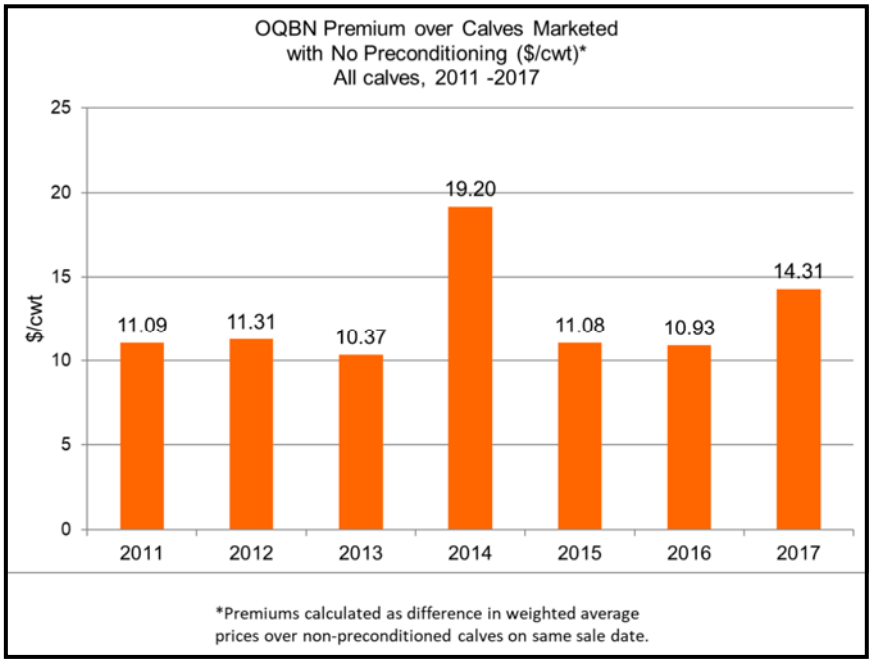
The OQBN Vac-45 program and other preconditioning programs benefit both buyers and sellers in several ways, including reduced shrink, stronger immunity, and improved weight gain during the weaning and preconditioning period. In 2017, OQBN participants realized a $14.31/cwt premium over cattle that had no weaning or health history (see table below). Buyers offset purchase prices by having very low death loss and excellent feed conversion right off the bat.

Some producers may be apprehensive about preconditioning. However, the use of a proper vaccination protocol and the development of a basic management plan can provide healthy preconditioned calves that are more valuable at sale time.

When the decision is made to precondition cattle, producers should evaluate their feed options. What feed or grain is on hand? What is the nutritional value of the hay source? By determining feed resources and their feeding value, a basic preconditioning ration can be easily formulated by a nutritionist or OSU extension educator. According to these factors, producers should then set a target weight goal for the calves. Producers must be cautious as to not over-condition cattle that are destined for feeding environments with a low plane of nutrition such as stockpiled dry winter range or hay. In these situations, high energy diets during preconditioning will hinder future performance due to the extreme difference in nutrition.

A minimum 45-day preconditioning period is required by OQBN. Some producers may feel that 60 or 75 days works better for their operation. Rations can be adjusted nutritionally to allow for increased days on feed in turn avoiding over-conditioning situations. Finally, make sure that the preconditioning program is set in a way that requires minimal labor and equipment input. Preconditioning is an investment in risk management, however, the intention is not to accrue costs that offset premiums at sale time.

Whether headed to the feed yard or staying on the operation for winter grazing, preconditioning management paired with a full course of preconditioning vaccines will provide the producer with risk management needed to boost returns on the 2018 fall calf crop. Contact your local OSU extension educator about the OQBN program or questions about creating a preconditioning program for calves this fall.



Effects of Weaning Timing on Performance and Energy Utilization in Beef Cows

Aksel Wiseman, Miles Redden, Adam McGee, Courtney Spencer, Claire Andresen, Megan Gross, Gerald Horn, Ryan Reuter and David Lalman

Introduction

Compared to mature cows, two-year-old first-calf heifers give less milk, wean lighter calves, take longer to reinitiate estrous cycles after calving, and generally have lower pregnancy rates. In addition, previous research indicates that lactation increases maintenance energy requirements of the beef cow by approximately 20% (NASEM, 2016). Early weaning should eliminate the nutrients required to produce milk and at the same time, reduce the cow's maintenance energy requirements. This feed energy savings could be redirected to calf growth by feeding the calf directly.

This study examined the effects of timing of weaning on energy utilization and production efficiency in first-calf beef heifers and their calves. This experiment used 90 Angus and Angus x Hereford first-calf heifers and their calves. Cow/calf pairs were randomly assigned to six different dry lot pens each year. Three pens each year were assigned to early weaning (130 days) and three pens assigned to traditional weaning (226 days) treatments. Cows were limit-fed to achieve modest weight gain, while calves were offered free-choice access to the same diet as their dams in a creep feeding area. The diet included (dry matter basis) 33% chopped Bermuda grass hay, 33% dry-distillers grains with solubles, 24% rolled corn, 5% supplement, and 5% liquid supplement. Measurements included cow feed intake required to achieve targeted weight gain, body condition score, body weight, milk yield and composition, as well as calf body weight gain and creep feed intake.

Findings

As designed, there were no differences in cow body weight and body condition score throughout the experiment (Table 1). Maintenance energy requirements were slightly greater (5%) in lactating versus non-lactating cows. Early weaned calves consumed more feed than traditional weaned calves (Table 2). However, feed and milk energy intake for traditional weaned calves was greater than feed energy intake alone in early weaned calves. This resulted in greater daily gain and total body weight gain in calves weaned at an older age. The increased traditional weaned calf performance offset the additional maintenance costs of their lactating dams. This resulted in an improved gain to feed ratio when all feed consumed by the cow/calf pair was considered. During the post-weaning growing period, traditional weaned calves gained faster, although were still lighter than traditional weaned calves at the time of feedlot entry.

Results from this study suggest that early weaning soon after the breeding season does not improve overall efficiency of nutrient utilization. Improved efficiency in the traditional system under these circumstances appear to be due primarily to two factors: a) only slight increase (5%) in maintenance energy requirement of the dam due to lactation compared to previously reported estimates (20%) and b) suppressed performance of early-weaned calves through 226 days of age.

Resources

http://beefextension.com/pages/ccmang.html

Table 1. Effects of lactation status on feed required, weight and condition change in first-calf heifers

	Treatments	
Item	TW[1]	EW[1]
Feed dry matter intake, lbs per day	16.74	10.98
Cow weight, lbs		
January	919	912
April	981	981
Cow BCS[2]		
January	4.7	4.7
April	5.1	5.2

[1]TW = traditional weaning, EW = early weaning
[2]Body Condition Score on a 1(emaciated) to 9 (obese) scale.

Effects of Weaning Timing on Performance and Energy Utilization in Beef Cows

Table 2. Effects of weaning age on energy intake, performance and feed efficiency

	Treatments	
	TW[1]	EW[1]
Cow energy intake, cumulative Mcal ME[2]	1993	1314
Calf energy intake, cumulative Mcal ME		
Total Mixed Ration (TMR)	1031	1231
Milk	649	---
Total	1680	1231
Pair cumulative Mcal TMR ME	3063	2521
Calf ADG, lbs	2.91	2.23
Calf BW gain, lbs	271.2	209.4
Gain:Feed		
Calf TMR Gain:Feed[3]	0.12	0.08
Pair Gain:Feed[4]	0.040	0.038
Gain:Energy Intake		
Calf total Gain:Energy intake[5]	0.16	0.17
Pair Gain:Energy Intake[6]	0.089	0.083

[1] TW = traditional weaning, EW = early weaning

[2]MCal ME = Mega calorie of metabolizable energy intake
[3]Calf weight gain in pounds per pounds of calf TMR intake^{-1}

[4] Calf weight gain in pounds per pounds of TMR intake of the pair^{-1}

[5] Calf weight gain in lbs per Mega calorie of calf TMR intake and milk intake^{-1}

[6] Calf BW gain in lbs per Mega calorie of pair TMR intake^{-1}

Neosporosis in Cattle

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

The disease Neosporosis was first described in dogs in Norway. The infected dogs had a neuromuscular condition that resulted in hind limb paralysis. The protozoan that caused the disease was *Neospora caninum*. Since the initial discovery, the parasite has been a nemesis to cattle producers worldwide. It is one of the more common causes of abortion in cattle.

N. caninum is an intracellular protozoan. The definitive host is dogs or other canids such as coyotes or foxes. Canids are infected with the parasite by ingesting cysts from infected tissues such as an aborted fetus, placenta, or tissue from a dead cow or other intermediate host. Once the parasite is ingested, the lifecycle begins. The completion of the lifecycle ends with the passing of oocysts (eggs) in the feces.

Cattle which are an intermediate host of the parasite may become infected in one of two ways. One way is by consuming feed or water that has been contaminated with feces from an infected dog or other canid. This type of transmission is referred to as “horizontal” transmission. The life cycle is not completed in the intermediate host. The immune system will contain the parasite in a cyst in tissues. For this reason, cattle do not shed oocysts (eggs), but they remain infected for life.

The second and most common way cattle are infected is by “vertical” transmission. “Vertical” transmission is the

Neosporosis in Cattle (cont.)

process of the infected cow passing the infection to her offspring in the uterus. As stated earlier, cattle are infected for life which means they will pass the organism to their offspring with each pregnancy. This accounts for the organism remaining in the herd for long periods of time.

Neosporosis in cattle is a disease of the unborn calf. Adult cattle do not show any signs of illness when infected. Clinical disease in the fetus depends on the stage of the pregnancy when infected. Fetuses infected in the first trimester are unlikely to survive. Second trimester pregnancy infections may result in a dead calf or a live calf. Most fetuses infected in the third stage of pregnancy will be born normally. In very rare instances, calves may be born with birth defects, neurological signs, or be weak and unable to stand.

Diagnosing the cause of abortion is difficult. One clue that *N. caninum* is the cause of the abortion is the timing. It is common for cows to abort around the six month of pregnancy with this infection. Most other causes of abortion in cattle occur earlier or later than this time. Even with this clue, pathologist will need the aborted fetus, placenta, and a blood sample from the dam to have any chance of finding the cause. The diagnosis will be confirmed if the pathologist can find the encysted parasite in the tissue of the fetus or placenta. This and the dam having a high titer for *N. caninum* will confirm the diagnosis.

As with many cattle diseases, neosporosis has no treatment. Producers must focus on prevention and control of the pathogen. Test and cull has been used to eliminate the parasite from the herd; however, this may not be cost effective in herds with high infection rates. A less expensive solution is to sell all offspring from infected cows. This should eventually lead to a *N. caninum* free herd.

Producers may prevent the introduction of the parasite by testing to make sure all new purchased cattle are negative before entering the herd. In cows that are genetically valuable, embryo transfer is an option to prevent the offspring from becoming infected.

Sanitation is also very important in keeping the organism out of the herd. Feed and water supplies need to be kept free from contamination with canid feces. Any aborted fetuses, placentas, dead calves, or dead cows should be disposed of properly. Whatever method is chosen, the tissues must be kept away from canids.

Neosporosis is a frustrating disease for cattle producers. The disease is difficult to diagnose and there are no good options to control the disease. The best producers can do is practice good biosecurity and work with their veterinarian in finding the causes of abortions. If producers would like more information about Neosporosis, they should contact their local veterinarian or Local County Extension Educator.

2018-2019 OQBN Sale Dates

oqbn.okstate.edu

Location	OQBN Representative	OQBN Representative Phone Number	Livestock Market Representative	Livestock Market Direct Phone Number	Sale Date	Must Wean By
Woodward Livestock	Dana Bay	580-254-3391	Ronnie White 580-334-1112 Larry Wingart 580-661-1157	580-256-5547	10/25/2018	9/10/2018
OKC West	Marty New	580-255-3674	Bill Barnhart 405-262-8800	1-800-778-9378	11/6/2018	9/22/2018
Cherokee Sales Company	Tommy Puffinbarger	580-596-3131	Jarrid Herrmann 785-564-0869	580-596-3361	11/7/2018	9/23/2018
McAlester Stockyards	Brian Freking	580-332-7011	Lindsey Grant 918-423-2834	918-423-2834	11/13/2018	9/29/2018
Payne County Stockyards	Nathan Anderson	405-747-8320	Brad Chapman 405-747-7870	405-547-7522	11/14/2018	9/30/2018
Blackwell Livestock	Dana Zook	580-237-7677	Gary Potter 620-441-7441 Grady Potter 620-660-1999	580-363-9941	11/17/2018	10/3/2018
Woodward Livestock	Dana Bay	580-254-3391	Ronnie White 580-334-1112 Larry Wingart 580-661-1157	580-256-5547	11/29/2018	10/15/2018
OKC West	Marty New	580-255-3674	Bill Barnhart 405-262-8800	1-800-778-9378	12/4/2018	10/20/2018
McAlester Stockyards	Brian Freking	580-332-7011	Lindsey Grant 918-423-2834	918-423-2834	2/19/2019	1/5/2019
McAlester Stockyards	Brian Freking	580-332-7011	Lindsey Grant 918-423-2834	918-423-2834	4/16/2019	3/2/2019
McAlester Stockyards	Brian Freking	580-332-7011	Lindsey Grant 918-423-2834	918-423-2834	6/11/2019	4/27/2019

Adding Value to Your Grass Business

Derrell Peel, Professor and Livestock Marketing Specialist

As a cow-calf producer, you have likely been told that "you are not in the cattle business but rather you are in the grass business". I have made similar statements many times and I believe it captures a very important perspective for cattle producers. Most of what you think of as profits is actually a return to your fixed assets (investments) and land is the most significant investment for most producers. The forage produced on that land is your primary product and your challenge as a cattle producer is to figure out how to market that forage to its highest value.

Production of weaning calves is the primary enterprise for the majority of cow-calf operations. However, widely variable calf prices over time is a reminder that the value of forage marketed as weaning calves also varies widely. This begs the question of whether there are times when the forage has more value when marketed in some form other than weaning calves. In fact, there are times when the market favors heavier feeder cattle rather than larger numbers of calves. These situations provide a strong signal for stocker production and for cow-calf producers - a signal to consider retaining calves in a stocker or backgrounding program. In other words, there are situations where your forage has more value marketed as fewer, heavier calves rather than more weaning calves.

There are two general situations that have a big impact on the value of your forage. The first is the situation of expensive feed grain prices. Feedlots react to high feedlot cost of gain by favoring heavy feeder cattle over lighter-weight cattle. In other words, feedlots try to buy more weight rather than put weight on in the feedlot. An extreme example occurred in the fall of 2011, when the Southern Plains corn price was over $11/bushel. Steer calves weighing 500 pounds were bringing $137/cwt. leading to a net return per weaning calf of $50-$100 per head. In contrast, 250 pounds of gain on a 500 pound steer had a value of $127/cwt. Assuming you could run two steers in place of one cow, retained ownership of two steers to 750 pounds would produce net returns of roughly $250 in place of one cow. However, high feed price is not the situation we have currently.

The other situation that favors retained ownership of stockers is when cattle numbers are cyclically large. This is the current situation as a result of substantial herd expansion in recent years. Feedlots generally prefer heavy, older feeders over calves and, when feeder supplies are plentiful, markets will provide incentives to add weight to feeder cattle. This is true despite currently low feed prices. Current calf prices suggest steer calves bringing about $850/head and, with average cow costs $800/head or more, a net cow-calf return of less than $50/head. The current value of gain for 250 pounds of gain on a 500 pound steer is roughly $1.26/lb. Two steers in place of one cow could produce net returns of $150-$200 on a per cow equivalent basis. With cyclically large feeder supplies expected until 2020 at least, retained ownership of stocker calves may have more potential than at some other times.

The point of this discussion is not the specific numbers but to recognize that your forage value will change under varying market conditions. Sometimes it will have the most value marketed through weaning calves and sometimes there will be more value when forage is marketed as fewer but heavier yearling cattle. A host of considerations will determine the extent to which you can feasibly adjust your production activities. These may include labor, management, equipment and facilities as well as tax implications. However, it is the case that if you always and only sell weaning calves, you will experience more variability in net returns over time than if you respond to market signals and make adjustments as you can.

Many cow-calf operations harvest part of their forage as hay. Some amount of hay is often needed for year-round nutritional needs of cows. However, hay use should generally be limited to minimal levels to supplement or replace grazed forages lacking in quality or quantity at certain times of the year. Hay values also vary widely over time and there may be times when it makes the most sense to simply sell some hay as a cash crop. Hay prices may tell you that some of your forage has the most value in some other place. If you keep and feed hay supplies beyond your essential needs, you are incurring those higher hay prices in your own cost of production. The market price that you could sell hay for is the opportunity cost of using it yourself and selling some may be the highest value for that part of your forage.

Properly stored, hay can maintain quality and value over time but it certainly doesn't get better in quality. Cow-calf operations should not overlook the potential to add value to excess or leftover hay when marketed through cull

Adding Value to Your Grass Business (cont.)

cows. Cull cows have the strong seasonal price pattern from the November low to peaks in April-June. A winter cull cow feeding program utilizing moderate quality hay may, at times, provide an opportunity to upgrade cull cows and capture seasonal price increases and thereby add value to the hay.

Answering the question "in what use(s) does my forage have the highest value?" will help you respond to market signals and increase returns to your cattle - I mean grass - business. The answer to that question will change as cattle and feed market conditions change. It's important to ask and answer the question regularly .

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