



AgEcon SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Long Term Winter Stocker Profitability

David P. Anderson
Texas A&M University
The Agricultural & Food Policy Center
Department of Agricultural Economics
2124 TAMU
College Station, TX 77843-2124
danderson@tamu.edu
979.845.4351

Monte Rouquette
Texas A&M University
2124 TAMU
College Station, TX 77843-2124
m-rouquette@tamu.edu
903.834.7140

Justin Benavidez
Texas A&M University
The Agricultural & Food Policy Center
Department of Agricultural Economics
Texas A&M AgriLife Extension Service
2124 TAMU
College Station, TX 77843-2124
benavidezjustin@tamu.edu

Charley Martinez
Texas A&M University
The Agricultural & Food Policy Center
Department of Agricultural Economics
Texas A&M AgriLife Extension Service
2124 TAMU
College Station, TX 77843-2124
charleymartinez@sbcglobal.com

Selected Paper prepared for presentations at the Southern Agricultural Economics Association's 2017 Annual Meeting, Mobile, Alabama, February 5-7 2017

Copyright 2017 by David P. Anderson, Monte Rouquette, Justin Benavidez and Charley Martinez. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Long Term Winter Stocker Profitability

David Anderson, Monte Roquette, Justin Benavidez, Charles Martinez

Forage availability is the basis for success in most stocker-calf operations in the state of Texas. In an effort to move beyond breaking even and into positive profits, stocker calf producers turn to diet supplementation to promote weight gain, nutrient efficiency and overall improved performance beyond what forage can provide. Stocker calf operators are left with the question: Which available supplement is the best financial decision for stocker calf producers? This publication provides a guide to answering that question.

For the stocker production system, there are many metrics to measure the impact of a supplement. The most commonly used metrics are average daily gain (ADG), gain per animal and gain per acre. But the metric that is most important is profit availability for the system. The goal of a supplement is to aid stocker cattle gains, without increasing variable costs. Due to the price a producer receives at the time of sale being exogenous to producer's decisions, decreasing/maintaining variable costs, while increasing total pounds to sell is the key benefit of a supplement. If a producer can find a supplement that can achieve these goals, then there is increased profit availability.

Given the recent volatility in the cattle market, managing costs in order to increase profit is critical. The Texas A&M AgriLife Research and Extension Center in Overton, Texas, has been collecting supplement trials since 1986. The results of the research trials reported include various supplementation strategies. The unique property of this data set, is its length; the extensive data set collected over time makes for a good

comparison of supplementation strategies, their effectiveness, and profitability.

There are many metrics to measure the impact of a supplement to a stocker production system including average daily gain (ADG), gain per animal and gain per acre, but the key decision variable is profit. The supplement that provides the greatest decrease in cost will prove to be the supplement that results in the greatest profitability; as the price a producer receives is exogenous to their operation decisions, decreasing the amount of feed necessary to attain a desired weight provides increased profits.

Procedure

Animal scientists at the Texas A&M AgriLife Research and Extension Center in Overton, Texas have completed trials incorporating different supplements from 1986 to the present, documenting the amount of supplementation, the stocking rate, the average daily gain, and the gain per acre. These studies involved Simbrah cross stocker steers from similar lines over an extended duration, providing a good control for the variation in supplements.

The stocker steers were weighed throughout the trials providing an in-weight and out-weight as well as a calculable average daily gain and gain per acre figure. In addition, calculated stocking rates were provided and ranged from 1.46 head/acre to 2.78 head/acre.

Three measures were used to compare supplements across trials. Average daily gain, the average animal's gain divided by the number of days on pasture was calculated and ranked. The gain per acre was provided by the staff of the Texas A&M AgriLife staff at the Overton Research and Extension Center. The average profit was determined by

taking the sale price less the purchase price multiplied by the out-weight less the in weight, less the average variable cost. The costs were taken from historic Texas Crop and Livestock Budgets for the East Texas district provided by Texas A&M AgriLife Extension.

Overview of Supplementation Procedures

As shown in Table 1, Stocker Supplementation Results, the key supplements were mixed with corn in various amounts for various trials.

Rumensin is a feed supplement that contains the key ingredient monensin. Rumensin, according to the maker Elanco, is a supplement that, “improves feed efficiency and prevents and controls coccidiosis”. Preventing coccidia in cattle in return can help a producer’s bottom line. Research, according to Elanco, has shown that Rumensin, “improves feed efficiency by 4 percent and provides a net return of 23.13/hd”. Bovatec is a feed supplement that contains the key ingredient lasalocid sodium, an ionophore. According to the maker’s website, Zoetis, feeding Bovatec improves feed intake, boosts average daily gain, and also helps control coccidiosis.

Gainpro is a feed supplement that contains the key ingredient Bambermycins. According to the maker of Gainpro, Hubbard Feeds, feeding Gainpro “increases the usable energy available to the animal by altering the microbial populations in the rumen to produce more propionic acid”. This is due to the fact that the molecular weight is higher than Bovatec and Rumensin. This allows for it to not be absorbed in the GI tract, which lets it be active in the rumen and small intestine.

The meals that were used in the trials were fish (FSM), soybean (SBM), and feather (FEA) meals. The use of these in the feed trials filled the needs of protein requirements for the cattle. These meals are highly concentrated but are cost efficient for producers, which impacts their bottom line.

Gluten was fed to cattle in trials. Gluten is used in a feeding program to help with protein requirement in cattle. The highly concentrated crude protein feed supplement has some possible negative effects which producers should be aware of. If fed in high amounts to cattle, gluten can increase the sulfur levels of cattle which can lead to nervous system complications. The supplement also can vary in terms of quality according to The University of Florida Extension. The varied quality amounts can lead to inefficient performance.

Table 1. Stocker Supplementation Results

Supplement Description	Supplement Amount	Years of Data	Num Plots	Average Grazing Dates	Average Days on Pasture	Stocking Rate	Average Daily Gain		Gain/Acre		Avg Variable Cost		Avg Profit	
							Lb/head	Rank	Lb/A	Rank	\$/head	Rank	\$/head	Rank
1:1 CORN + FEA; MOL	LBS/H/D					HEAD/A								
1:1 CORN + FEA; MOL	2 LBS/H/D	1	3	2/20-6/23	123.04	2.04	2.23	14.00	564.18	12.00	\$ 587.02	\$ (106.09)	10	
1:1 CORN + FSM; MOL	2 LBS/H/D	1	2	2/20-6/23	123.22	2.20	2.36	12.00	636.48	9.00	\$ 587.02	\$ (20.80)	7	
2:1 (CORN + SBM) + MINERALS + DRIED MOLASSES + RUMENSIN; 4/30 CHANGED TO: CORN + DRIED MOL + RUMENSIN	Varying	1	12	12/20-5/17	148.00	2.68	2.72	3.50	1038.04	2.00	\$ 522.80	\$ 892.68	1	
93:7 CORN + BOVATEC	2 LBS/H/D	1	3	1/25-5/18	113.00	2.66	2.36	10.00	719.29	6.00	\$ 559.09	\$ 12.32	6	
94:6 CORN + RUMENSIN	2 LBS/H/D	1	3	1/25-5/18	113.00	1.46	2.36	11.00	389.03	15.00	\$ 559.09	\$ (250.04)	13	
95:5 CORN + GAINPRO	2 LBS/H/D	1	3	1/25-5/18	113.00	2.04	2.46	6.00	559.03	13.00	\$ 559.09	\$ (115.00)	11	
CORN	Varying	3	18	1/21-5/17	116.13	2.58	2.80	2.00	850.97	3.00	\$ 574.27	\$ 171.20	3	
CORN + RUMENSIN	Varying	2	6	5/23-4/16	107.67	2.75	2.72	3.50	806.25	4.00	\$ 527.95	\$ (138.43)	12	
CORN + RUMENSIN + MINERALS	Varying	2	8	12/26-6/8	164.50	1.96	2.41	7.00	801.24	5.00	\$ 468.87	\$ (347.99)	14	
CORN; MOL	Varying	1	4	2/20-6/23	123.22	2.12	2.38	9.00	626.13	10.00	\$ 587.02	\$ (30.01)	8	
CTS	2 LBS/H/D	1	2	2/11-6/2	112.00	2.17	2.09	15.00	508.12	14.00	\$ 587.02	\$ (55.87)	9	
FSM	2 LBS/H/D	1	2	2/11-6/2	112.00	2.21	2.39	8.00	593.28	11.00	\$ 587.02	\$ 33.13	5	
FSM + RUMENSIN	2 LBS/H/D	1	2	2/26-6/9	103.00	2.78	2.51	5.00	719.22	7.00	\$ 468.87	\$ (482.75)	15	
GLUTEN	Varying	1	4	1/5-5/8	123.00	2.56	3.38	1.00	1061.38	1.00	\$ 576.72	\$ 581.67	2	
PASTURE	NA	24	225	1/14-5/17	124.00	2.56	2.30	13.00	674.05	8.00	\$ 542.90	\$ 47.91	4	

Results

Using the previously discussed three measures of supplementation performance, three combinations of supplements did the best. Table 2., Top Performing Supplement Trials, an annotated version of Table 1., shows the top three combinations of supplements in winter pasture stocker cattle.

Supplement Description	Average Daily Gain		Gain/Acre		Avg Variable Cost	Avg Profit	
					\$/head	\$/head	
	Lb/head	Rank	Lb/A	Rank	\$/head	\$/head	Rank
2:1 (CORN + SBM) + MINERALS + DRIED MOLASSES + RUMENSIN; 4/30 CHANGED TO: CORN + DRIED MOL + RUMENSIN	2.72	3.50	1038.04	2.00	\$ 522.80	\$ 892.68	1
CORN	2.80	2.00	850.97	3.00	\$ 574.27	\$ 171.20	3
GLUTEN	3.38	1	1061.38	1	576.718	581.67441	2

Among the three top trials there was not a consistent first, second, or third place trial. All three varied in the measures, however Gluten was ranked first in Average Daily Gain, and Gain/Acre.

While the (CORN + SBM) + MINERALS + DRIED MOLASSES + RUMENSIN; 4/30 CHANGED TO: CORN + DRIED MOL + RUMENSIN trial placed second in terms of Gain/Acre and tied with a trial not included in Table 2. for third place in Average Daily Gain, it ranked first in terms of profitability.

The CORN supplement trial did not rank first in any of the three measures however it was consistently ranked in the top three measures for all three. CORN placed third in terms of profit and Gain/Acre however it provides a higher Average Daily Gain than the supplement trial that ranked first in profit, (CORN + SBM) + MINERALS +

DRIED MOLASSES + RUMENSIN; 4/30 CHANGED TO: CORN + DRIED MOL + RUMENSIN.

Conclusions

In order to increase profitability in winter stocker calves, producers often turn to supplementation. Using data from the Texas A&M AgriLife Research and Extension experiment station in Overton, Texas several supplementation options were ranked using Average Daily Gain, Gain/Acre, and Average Profit as measures of performance.

The bottom line for producers is the profit they are able to gain from any activity, and while the (CORN + SBM) + MINERALS + DRIED MOLASSES + RUMENSIN; 4/30 CHANGED TO: CORN + DRIED MOL + RUMENSIN ranked first in only one category, that category was profit. Not only was (CORN + SBM) + MINERALS + DRIED MOLASSES + RUMENSIN; 4/30 CHANGED TO: CORN + DRIED MOL + RUMENSIN the top ranked procedure in terms of profitability, it outperformed the second place trial, GLUTEN, by \$311.00.

More detailed budget information along with a per animal analysis will provide more insight into the highest performing supplement. In addition, this study was isolated to data from east Texas which has a moderate climate, and therefore it is possible that the results could change based on the location of a producer.

References

"Texas Crop and Livestock Budgets." Extension Agricultural Economics. Texas A&M AgriLife Extension Service, 2017. Web. 18 Jan. 2017.

"Elanco.us." Elanco U.S. - Enriching Life in the USA. Elanco, 2016. Web. 18 Jan. 2017.

"GAINPRO®." GAINPRO® - Hubbard Feeds. Hubbard Feeds Inc., 2017. Web. 18 Jan. 2017.

Meyer, Bob, and Matt Hersom. "Corn Gluten Feed for Beef Cattle." EDIS New Publications RSS. University of Florida IFAS Extension, 2015. Web. 18 Jan. 2017.

"BOVATEC®." BOVATEC. Zoetis, 2017. Web. 18 Jan. 2017.
<<https://www.zoetisus.com/products/beef/bovatec.aspx>>.