University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Cornhusker Economics | Agricultural Economics Department

3-1-2012

The Economics of Bunk Feeding Distillers Grains to Feeder Steers on Pasture

Matthew C. Stockton
University of Nebraska-Lincoln, mstockton2@unl.edu

Leslie Aaron Stalker
University of Nebraska-Lincoln, astalker3@unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/agecon_cornhusker

Part of the Agricultural and Resource Economics Commons

Stockton, Matthew C. and Stalker, Leslie Aaron, "The Economics of Bunk Feeding Distillers Grains to Feeder Steers on Pasture" (2012). *Cornhusker Economics*. Paper 582.
http://digitalcommons.unl.edu/agecon_cornhusker/582

This Article is brought to you for free and open access by the Agricultural Economics Department at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Cornhusker Economics by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

CORNHUSKER ECONOMICS

University of Nebraska–Lincoln Extension

March 28, 2012

Institute of Agriculture & Natural Resources
Department of Agricultural Economics
http://agecon.unl.edu/cornhuskereconomics

The Economics of Bunk Feeding Distillers Grains to Feeder Steers on Pasture

Market Report	Yr Ago	4 Wks Ago	3/23/12
Livestock and Products, Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight	$115.00	$127.70	$127.52
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.	151.23	186.21	182.54
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.	133.64	155.22	153.37
Choice Boxed Beef, 600-750 lb. Carcass	187.66	195.42	189.62
Western Corn Belt Base Hog Price Carcass, Negotiated	83.61	86.71	82.29
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean	93.06	85.76	80.00
Slaughter Lambs, Ch. & Pr., Heavy, Wooled, South Dakota, Direct	204.50	*	140.00
National Carcass Lamb Cutout, FOB	389.32	378.19	372.90
Crops, Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu.	7.06	6.08	6.22
Corn, No. 2, Yellow Nebraska City, bu.	6.61	*	6.31
Soybeans, No. 1, Yellow Nebraska City, bu.	13.35	*	13.37
Grain Sorghum, No. 2, Yellow Dorchester, cwt.	10.98	10.93	10.80
Oats, No. 2, Heavy Minneapolis, MN , bu.	3.46	3.47	3.59
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton	140.00	225.00	225.00
Alfalfa, Large Rounds, Good Platte Valley, ton	72.50	145.00	145.00
Grass Hay, Large Rounds, Good Nebraska, ton	*	100.00	97.50
Dried Distillers Grains, 10% Moisture, Nebraska Average	196.50	212.50	218.25
Wet Distillers Grains, 65-70% Moisture, Nebraska Average	69.50	74.00	76.00

*No Market

Introduction

Growth of the ethanol industry in Nebraska and surrounding states has increased the availability of distillers co-products as feed for livestock. The increased availability of distillers grains with solubles (DGS) together with its high protein, energy and phosphorous content, make it a natural fit as a supplement in many grazing situations (*2008 Nebraska Beef Report, pg. 25-27, 2009 Nebraska Beef Report, pg. 37-39*). DGS generally comes in the form of a wet (WDGS) or dry (DDGS) product. How to feed this relatively new product to cattle in a pasture is an important economic question. Several recent studies at the University of Nebraska's Gudmundsen Sandhills Laboratory, near Whitman, Nebraska have measured the effects of two delivery methods when feeding WDGS and DDGS in a pasture on the ground, versus feeding them in commercially manufactured feed bunks. It was expected that feeding on the ground would result in higher waste levels than feeding in a bunk, but the waste may be offset by a reduction in capital expenses associated with bunk feeding.

Procedures

In Experiment 1, 63: March-born steers weighing 443 pounds grazed native, upland, Sandhills winter range, and were fed 2.25 pounds of dry matter equivalent of WDGS per day, delivered three times per week. Steers were assigned to one of two feeding treatments: either fed in a bunk or fed on the ground. In Experiment 2, 114: March-born steers weighing 615 pounds grazed sub-irrigated meadow, and were fed 2.0 pounds of dry matter equivalent of DDGS per day, delivered three times per week. Half were fed in a bunk and the other half were fed on the ground. Further information about the experiments is available in the Nebraska Beef Reports (*2010 Nebraska Beef Report pg. 18; 2012 Nebraska Beef Report pg. 51-52*).

Results

In both groups steers fed in a bunk had a higher average daily gain (ADG) than steers fed on the ground. In Experiment 1 where WDGS was fed, groups gained 0.63 vs. 0.44 pounds

Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the Counties and the U.S. Department of Agriculture.

University of Nebraska Extension educational programs abide with the non-discrimination policies of the University of Nebraska–Lincoln and the United States Department of Agriculture.

per day (Table 1), while in Experiment 2 where DDGS was fed, groups had an ADG of 1.18 vs. 0.92 (Table 2). On average, those animals fed in the bunk were 11.78 and 20 pounds heavier for the WDGS and DDGS, respectively, than those fed on the ground. Using National Research Council (NRC) published information, it was estimated the WDGS steers fed on the ground consumed between 0.31 to 0.45 pounds of WDGS dry matter per day less than those fed in the bunk. This indicates a 13 to 20 percent waste in feed. Using the same methodology, it was estimated DDGS steers fed on the ground had a loss of 40 to 45 percent of feed compared to those fed in bunks. Table 1 shows the weight gains from the various steer sizes and feed treatments.

Table 2 shows the average per head weight differences among the various treatments and animals. The real value of the lost distillers is not the loss of the product, but the loss of production from the cattle fed the product. Table 3 (on next page) captures this value using March prices for both 2011 and 2012. Steers fed WDGS had a $17.20 and a $24.50 per head advantage for bunk feeding for the 2011 and 2012 market years. Steers fed DDGS had a $26.40 and a $33.00 per head advantage for bunk feeding for the same market years. Assuming a single bunk cost $973.65 (Werk Weld Inc., Armour, SD), including delivery and set-up, with the capacity to accommodate 40 of the heavy steers or 56 of the light weight steers, it is paid off in a single season, bunk cost per head is $24.34 for the larger steers and $17.39 per head for the smaller steers (Table 4 on next page). Taking the difference between the added values in Table 3 and the costs in Table 4, calves fed from a bunk for both 2011 and 2012 had a positive profit, except in the case of light weight steers for 2011. This means bunk costs were recovered during the single season for all but the 2011 light weight steers.

These scenarios show three of the four cases result in the bunks being paid for in a single year. In the case of brood cows the difference is difficult to measure since it comes in the form of both cost savings, such as preventing poor reproduction, improved cow health and longevity or increased production such as cow cull value and calf weaning weight. It is possible a bunk would be more costly than ground feeding if cows were supplemented for short periods and the cost of the bunks or other costs such as moving them increased. Bunks that are less costly per head than the ones used in this research would make bunk feeding that much more profitable. The important thing to remember is that there are costs with both methods of feeding. The amount of the feed lost does affect production, and the more costly the feed the more the bunks provide value. Higher cattle prices also increase the potential value of feed inputs.

Table 1. Performance of Steers Fed WDGS and DDGS on the Ground or in a Bunk

	Bunk	Ground
Steers Fed WDGS (Light Steers)		
Initial Weight (lb)	**440**	**447**
Final Weight (lb)	**481**	**475**
ADG (lbs/d)	**0.63**	**0.44**
Steers Fed DDGS (Heavy Steers)		
Initial Weight (lb)	**616**	**614**
Final Weight (lb)	**701**	**681**
ADG (lbs/d)	**1.18**	**0.92**

Table 2. Weight Gain Differences Among Groups of Steers Fed Wet and Dry Distillers Grains and Solubles in a Feed Bunk or on the Ground

	Weight Gain Per Head		
	Bunk Fed	**Ground Fed**	**Added Weight**
WDGS Steers Weight Gain (lbs) (Light Steers)	39.06	27.28	11.78
DDGS Steers Weight Gain (lbs) (Heavy Steers)	86.00	66.00	20.00

Matthew C. Stockton, (308) 696-6713
Assistant Professor and Agricultural Economist
West Central Research & Extension Center
University of Nebraska-Lincoln
Mstockton2@unl.edu

Aaron Stalker, (308) 696-6707
Assistant Professor and Beef Range Systems Specialist
West Central Research & Extension Center
University of Nebraska-Lincoln
astalker3@unl.edu

Table 3. Value Added by Feeding Steers in a Feed Bunk Versus on the Ground

	Year	Market Price	Value Added Per Calf	Total Value Per Group
WDGS Steers (Light Steers)	**2011**	$146/cwt	$17.20	$963.13
	2012	$208/cwt	$24.50	$1,372.13
DDGS Steers (Heavy Steers)	**2011**	$132/cwt	$26.40	$1,056.00
	2012	$165/cwt	$33.00	$1,320.00

Table 4. Profit Per Head After Considering the Cost of Buying a New Feed Bunk in a Single Season

	Year	Bunk Cost	Group Size Calves/Bunk	Cost Per Calf	Profit Per Calf
WDGS Steers (Light Steers)	**2011**	$973.65	56	$17.39	$(0.19)
	2012	$973.65	56	$17.39	$7.12
DDGS Steers (Heavy Steers)	**2011**	$973.65	40	$24.34	$2.06
	2012	$973.65	40	$24.34	$8.66