Safe-Zone Project: Southwest North Dakota Market Cow Survey

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Introduction

Beef producers often consider market cows as "culls" instead of considering them as a significant food source. According to the North Dakota Farm Business Management program (2007), approximately 15% of cows and bulls in the North Dakota program are replaced annually. Sale of these market animals amounts to approximately 17.7% of total returns to the cow-calf business in North Dakota (ND Farm Bus. Mgmt. Program, 2007). This compares closely with national herd replacement sales and total returns of approximately 16% (National Market Cow and Bull Beef Quality Audit, 2007).

The National Market Cow and Bull Beef Quality Audit (C&B-BQA) was established in the early 1990s to assist producers in recognizing and optimizing cattle value, to monitor the health status of the national cow herd, to encourage marketing cattle in a timely and appropriate manner, to demonstrate ways that will prevent quality defects in market animals, and to encourage producers to be proactive in ways that will ensure a that the consuming public has a safe and wholesome beef supply (National Cow and Bull Beef Quality Audit, 2007).

Considering the goals of the National Market Cow and Bull Beef Quality Audit, a sample of market cows from four southwestern ND ranches were gathered and marketed through Long Prairie Packing Company, Long Prairie, Minnesota to document critical market cow management checkpoints to include drug residue surveillance, bruise trim-out, disease condemnation, cow condition, and the relationship of cow condition to carcass closeout values.

Cows committed to the project, which originated from participating ND Beef cattle Improvement Association members, were delivered to Stockmen's Livestock Exchange, Dickinson, ND on November 5 and 13, 2008. Prior to shipment the cows were processed, which included recording individual cow ID, age, weight, body condition score (BCS), sample collection (blood, fecal, and ear notch), and USDA backtag. Samples collected were forwarded to the NDSU Veterinary Diagnostic Laboratory for BVD virus types I and II, Johne's disease (Mycobacterium paratuberculosis), and Bovine Leukemia virus analysis. Additionally, drug residue analysis (penicillin, gentamicin, sulfamethazine, oxytetracycline, and tilmicosin) was conducted at the packing plant during routine surveillance. Data received from the packing plant included hot carcass weight (HCW), grade, trim (light, medium, or heavy), carcass value per hundredweight ($90.00/cwt base price), dressing percent, and carcass value.

Market Cow Results –

Testing for drug residues (penicillin, gentamicin, sulfamethazine, oxytetracycline, and tilmicosin) and viruses were negative for all cows in the survey. Trim due to bruising was minimal; however, trim can be excessive when market cows and bulls are handled roughly, prodded with electric prods, or transported as mixed loads. Market cows are a significant food source and need to be handled as a perishable product.

Laboratory analysis results for BVD virus Types I and II, Johne's disease, and Bovine Leukemia virus were negative for all cows in the survey.

Information obtained from the market cow survey is summarized in Tables 1 and 2. Freight charges for hauling the cows to Long Prairie Packing were $4.17/loaded mile for the first load ($47.24/cow) and $4.41/loaded mile ($44.05/cow) for the second load. The tables were prepared following an initial database sort based on hot carcass weight followed by grouping the cow's into100 pound hot carcass weight categories. In Table 1, cow age, BCS, origination weight, harvest weight, and transit shrink are summarized. With one exception, as cow age increased, BCS, origination weight,

and harvest weight increased also; however, increasing cow age did not appear to influence transit shrinkage which averaged 5.43%.

Table 2 summarizes packing plant closeout values. As cow age and weight increased, hot carcass weight, dressing percent, carcass grade, and total carcass value improved. Young, thin cows with carcass weights less than 500 pounds had very low dressing percent, carcass grade, and carcass values averaged $394.00/cow. In the C&B-BQA 21% of all carcasses were too light (<500 pounds) and 27% were too heavy (>1,000 pounds). Although the southwestern ND survey includes a much smaller number of cows, the array of hot carcass weights was similar. The carcass value differential among cows in the survey ranged from a low of $394.22 to a high of $838.80with a median carcass value of $619.07. Comparing the lightest hot carcass weight group to the median carcass value, there is a difference of $224.85, which is a significant improvement in market cow value. The data in this survey indicates that there is sufficient economic incentive for producers to predetermine the cows they plan to remove from the herd and early wean their calves or put them on feed after weaning. When lactation is terminated by early weaning, cows will regain body condition rapidly while grazing native range. Depending on weaning date, early weaned cows can gain one body condition score (80 pounds) or more depending on the length of the grazing period.

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Table 1. Market Cow Survey Sorted by hot carcass weight: Age, BCS, Weight and Transit Shrink

Carcass Wt. Range	No. Head	Group Pct	Cow Age	Origination BCS	Origination Weight	Harvest Weight	Pct Shrink
Averages			6.47	5.17	1395.3	1319.3	5.43
Total Cows	79						
<499	8	10.1	5.0	4.1	1001.3	944.9	5.63
500-599	25	31.6	6.4	4.6	1184.6	1121.1	5.36
600-699	30	38.0	7.2	5.2	1347.8	1279.1	5.09
700-799	12	15.9	7.0	5.4	1486.3	1404.3	5.52
800-899	3	3.8	8.4	6.3	1631.7	1549.7	5.02
900-999	1	1.27	4.8	5.5	1720.0	1616.9	6.00

Table 2. Market Cow Survey Sorted by Hot Carcass Weight: HCW, Grade, Trim, and Carcass Value

Carcass Wt. Range	No. Head	Cow Age	HCW	Dressing Percent	Carcass Grade	Trim[a]	Carcass Value/CWT	Total Carcass Value
Averages		6.47	687.9	51.61	2.86	0.83	$90.00	$619.07
	79							
<499	8	5.0	438.3	46.5	1.38	1	$89.88	$394.22
500-599	25	6.4	546.1	48.8	2.0	2	$90.14	$492.29
600-699	30	7.2	642.7	50.4	2.6	1	$90.17	$579.47
700-799	12	7.0	726.2	51.8	3.2	0	$90.33	$655.94
800-899	3	8.4	842.0	54.5	4	1	$89.50	$753.69
900-999	1	4.8	932.0	57.6	4	0	$90.00	$838.80