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An Added Cost of Production

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Market Report	Yr Ago	4 Wks Ago	4/27/01
Livestock and Products, Average Prices for Week Ending			
Slaughter Steers, Ch. 204, 1100-1300 lb Omaha, cwt	$74.37	$79.16	$75.36
Feeder Steers, Med. Frame, 600-650 lb Dodge City, KS, cwt	95.64	94.70	101.77
Feeder Steers, Med. Frame 600-650 lb, Nebraska Auction Wght. Avg	101.92	99.20	103.07
Carcass Price, Ch. 1-3, 550-700 lb Cent. US, Equiv. Index Value, cwt	117.38	117.54	114.87
Hogs, US 1-2, 220-230 lb Sioux Falls, SD, cwt	50.75	47.75	50.25
Feeder Pigs, US 1-2, 40-45 lb Sioux Falls, SD, hd	61.50	58.81	51.00
Vacuum Packed Pork Loins, Wholesale, 13-19 lb, 1/4" Trim, Cent. US, cwt	126.50	121.30	122.60
Slaughter Lambs, Ch. & Pr., 115-125 lb Sioux Falls, SD, cwt	86.50	*	90.00
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb FOB Midwest, cwt	185.00	171.00	*
Crops, Cash Truck Prices for Date Shown			
Wheat, No. 1, H.W. Omaha, bu	2.76	3.03	3.29
Corn, No. 2, Yellow Omaha, bu	2.04	1.82	1.77
Soybeans, No. 1, Yellow Omaha, bu	5.10	4.11	4.13
Grain Sorghum, No. 2, Yellow Kansas City, cwt	3.46	3.45	3.32
Oats, No. 2, Heavy Sioux City, IA , bu	1.41	1.36	1.40
Hay, First Day of Week Pile Prices			
Alfalfa, Sm. Square, RFV 150 or better Platte Valley, ton	85.00	115.00	115.00
Alfalfa, Lg. Round, Good Northeast Nebraska, ton	47.50	85.00	82.50
Prairie, Sm. Square, Good Northeast Nebraska, ton	*	112.50	105.00

* No market.

Agricultural producers typically consider death loss when budgeting costs and returns for a livestock enterprise. But, the cost of disposing of the dead animals has not typically been considered. In the past, rendering companies picked up animals free of charge. They received value from the hides, meat and bone meal, and other by-products.

The revenues generated by rendering companies have declined as a result of public concerns over food safety and animal health issues. Animal by-product feed ingredients have been banned in some cases, or their use has been restricted. The relatively low price of soybean meal as a competing protein source has also had an impact on animal by-product feed ingredient prices. In addition, meat packing plants have become more efficient in their abilities to recover and process by-products. As a result, some rendering plants have closed and others have found it necessary to charge producers for picking up animals, such as $25-$35 per pick-up. In some areas of Nebraska, producers no longer have access to a rendering service, particularly for pigs.

When rendering service was free and available, producers were not motivated to explore alternative mortality disposal methods. Now, they must evaluate the alternatives and make a decision. Given this situation, Chris Henry of the Biological Systems Engineering Department, Bob Wills of the Veterinary and Biomedical Sciences Department and this author developed a guide, which outlines disposal alternatives and presents the budgeted costs of each.

The alternative mortality disposal methods are; incineration, composting, burial and rendering. Incinerators are readily available, but require a capital outlay and a continuing cost for diesel or propane fuel. They do emit odors and particles, which can be reduced by adding an afterburner. This adds to the capital outlay and fuel consumption. Producers must obtain a construction and operating permit from the Nebraska Department of Environmental Quality in order to own and operate an incinerator.

Composting was approved in the 1999 session of the Nebraska legislature. A composting facility typically has several bins, and must be sized to match the expected mortality from a

livestock production facility. Carcasses are layered with a carbon source such as sawdust or chopped corn stalks. After a period of time in a primary bin, the material is moved to a secondary bin for an additional period. Then, the material is spread in a field using a solid manure spreader. A portion of the material can be recycled by using it as part of the carbon source for another primary bin. Composters can be built relatively cheap using straw bales and posts, but for a producer who needs one for several years, in all kinds of weather, it is best to have the bins made of concrete with a concrete apron in front of the bins and a roof. A low budget composter, without a roof and concrete apron was also evaluated in this study. Composting is considered an environmentally friendly method, but does require more labor than incineration, as well as a loader, spreader and tractor.

Burial is an alternative for catastrophic losses, but not recommended for routine disposal of mortality. Nebraska law requires that carcasses be buried under at least four feet of soil.

Rendering is still an alternative for many producers, but at a cost. In addition to the cost per pick-up, producers should build a holding area which is away from the production facility (for bio-security reasons), and which is screened from public view.

The costs for five disposal alternatives were budgeted. The alternatives were; incinerator, incinerator with afterburner, high investment composter, low investment composter and rendering. The costs were budgeted for a 300 sow farrow to finish production system, generating 40,000 pounds of mortality per year. The costs are presented in Table 1. Detailed assumptions used in the budgeting process appear in Nebguide G01-1421-A.

In this situation, the incinerators were the low cost alternatives at 4.9 and 7.3 cents per pound of mortality, with diesel fuel at $1.10 per gallon. The composters were next at 9.1 and 11.3 cents per pound. The rendering alternative with four pick-ups per week at $25 each was the high cost alternative at 16.3 cents per pound. Cost is one of the factors that will influence the manager's decision. Other factors include the quantity of mortality, location of production facilities, soil type, topography, labor availability and access to equipment.

Henry, Chris, Robert Wills and Larry Bitney. *Disposal Methods of Livestock Mortality*. G01-1421-A. Nebraska Cooperative Extension, 2001.

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Table 1. Budgeted Costs for Disposing of Mortality from a Pork Production System 40,000 Pounds of Mortality Per Year - 300 Sow Farrow to Finish System

	Incineration	Incineration with Afterburner	Composting High Investment	Composting Low Investment	Rendering
Disposal Equipment	**Incinerator and Fuel Tank**	**Incinerator and Fuel Tank**	**Compost Bins and Building**	**Compost Bins**	**Screen Storage Area**
Capital Investment	$3,642	$4,642	$15,2000	$7,850	$300
Other Equipment Needed			**Skid Steer Loader Tractor Manure Spreader**	**Skid Steer Loader Tractor Manure Spreader**	**Skid Steer Loader**
Labor Hours per Year	60.7	60.7	115.0	125.9	60.7
BUDGETED ANNUAL COSTS					
Fixed Costs - Disposal Equipment	$710.19	$905.19	$2,305.33	$1,190.58	$51.00
Machinery Costs					
Fixed			382.19	447.39	364.00
Operating			254.79	298.26	242.67
Other Operating Costs	$572.00	$1,341.44	$320.00	$320.00	$5,200.00
Labor	$667.33	$667.33	$1,265.15	$1,384.68	$667.33
Total Cost Per Year	$1,949.52	$2,913.96	$4,527.47	$3,640.92	$6,525.00
Total Cost Per # of Mortality	$0.049	$0.073	$0.113	$0.091	$0.163