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Using Tools for Long-Term Management Decisions

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CORNHUSKER ECONOMICS

Using Tools for Long-Term Management Decisions

Market Report	Yr Ago	4 Wks Ago	6/7/13
<u>Livestock and Products,</u>			
<u>Weekly Average</u>			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.....	\$122.90	\$126.00	\$124.00
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.....	179.39	159.40	160.32
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.....	158.41	131.74	138.33
Choice Boxed Beef, 600-750 lb. Carcass.....	197.10	203.32	204.21
Western Corn Belt Base Hog Price Carcass, Negotiated.....	89.20	87.62	95.63
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean.....	84.68	87.63	94.50
Slaughter Lambs, Ch. & Pr., Heavy, Woolled, South Dakota, Direct.....	150.75	104.00	114.38
National Carcass Lamb Cutout, FOB.....	346.94	282.13	277.22
<u>Crops,</u>			
<u>Daily Spot Prices</u>			
Wheat, No. 1, H.W. Imperial, bu.....	5.81	7.12	7.02
Corn, No. 2, Yellow Nebraska City, bu.....	6.24	6.81	7.16
Soybeans, No. 1, Yellow Nebraska City, bu.....	13.98	14.69	15.13
Grain Sorghum, No. 2, Yellow Dorchester, cwt.....	10.04	11.63	12.34
Oats, No. 2, Heavy Minneapolis, MN, bu.....	3.17	4.03	4.32
<u>Feed</u>			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.....	207.50	+	+
Alfalfa, Large Rounds, Good Platte Valley, ton.....	135.00	227.50	225.00
Grass Hay, Large Rounds, Good Nebraska, ton.....	97.50	222.50	217.50
Dried Distillers Grains, 10% Moisture, Nebraska Average.....	211.50	235.00	231.00
Wet Distillers Grains, 65-70% Moisture, Nebraska Average.....	70.38	89.50	89.50
+No Market			

As we head into summer, Nebraska cattle producers are potentially faced with some tough decisions. Even with the much needed rain, over 60 percent of pastures around the state are still in poor to very poor condition. The extended winter weather conditions through much of the spring have compounded the problem, decreasing hay stocks to historical lows of around 610,000 tons. This is a serious issue in a state where livestock is a large portion of its economic vitality. Many producers' livelihoods are being threatened, making this the ideal time to begin long-term planning to help rebuild their businesses and prepare for the challenges in the near and distant future.

In order to run a successful beef enterprise, producers need to make sound decisions for the short, medium and long-term. Short-term decisions are those that deal with the current time period or not too distant future such as within the next few weeks. A short-term choice might include whether to early wean calves, or how long to graze a particular pasture. Medium-term decisions are those that extend further into the future, but probably not more than a year. An example of a medium-term decision might be whether to add a few cows to next year's herd numbers or to shift some production from cows to stockers in the coming year. Long-term decisions are generally more permanent and have a lasting effect on an operation that would extend beyond a year. These choices could include buying land or culling a sizable portion of the herd. Long-term decisions are those that generally have long-term effects, and therefore require an additional level of information and thought before being made. This is why reducing a sizable number of cows from the herd during a drought should be thoroughly and carefully studied. One of the best ways to study cattle number changes due to a crisis is through a long-term whole herd analysis.

A tool known as the "Cow-Calf Herd Financial Cow-Q-Lator" or CCHFC has been developed to help producers and

others do this analysis quickly and with as little pain as possible. This tool allows users to compare many different scenarios based on data and information specific to their herd and their situation. The CCHFC is an electronic stochastic simulation model of a specific herd, given a unique set of resources, preprogrammed into an excel spreadsheet using the Microsoft Excel add-on SIMETAR. The word “stochastic” is a mouthful, but simply implies that the input information is represented by a range of possible outcomes rather than as a single piece of information. For example, when putting in expected prices for a future time period, such as next year, the user would enter what they think the highest and lowest price would be rather than a single price. This feature enables the tool to provide output values over a range of possibilities, which is technically called a Cumulative Distribution Function (CDF), but for purposes of simplicity and ease of use we will refer to it as a possibilities outcome map.

The CCHFC requires four areas of information to recreate a “paper model” of a specific operation. The areas include: 1) the culling or replacement strategy; 2) the expected costs and values of production; 3) the expected production; and 4) the feeding regimen. The CCHFC requires this information for up to a five-year continuous time period. Once the information is entered into the appropriate cells the CCHFC can be initiated, upon which it creates 500 randomly different possible beginning net worths (BNW) and ending net worths (ENW), based on the information supplied. Both the BNW and the ENW are then individually mapped onto a possibilities outcome map for comparison. This result allows the user to understand how net worth can change over the five-year time period based on the prices, costs and choices specified. For example, if a user was wishing to expand after a year of deep culling due to the drought, he/she would indicate the number of animals he/she is planning to restock with for each year. This number would include any retained animals, with information about their expected development costs. One possible comparison would be to completely restock using raised animals versus buying all replacement animals. Since the user is supplying all the information, the costs of both would be based on his/her expectations over the next five years.

As mentioned, the culling and replacement strategy portion contains the information regarding current herd size and strategy for maintenance, reduction, increase or any combination thereof. This information is entered in numerical form, and includes breeding bulls and retained female replacements. Using ranges of the expected number of animals for the current and the next five-year period, a strategy is identified. Many different strategies may be applied and compared, but only one at a time.

Carefully specifying expected costs and prices of production is crucial to obtaining answers that reflect the risk faced by producers. Forecasting what future prices will

actually be is difficult, if not impossible. So why do it? Without prices and costs there is no profit or loss, and nothing can be said about the possible effects of decisions or choices. Carefully supplying information about what is thought or believed about future prices and costs provides outcomes that reflect the true expectation of the user. Without a crystal ball, this is the best any business forecaster can do to make decisions. These decisions should be conservative in nature and reflect carefully thought out choices. It is wise to remember that the further one is from today, the wider the range of outcomes are likely to be. The CCHFC handles this well, since a range of prices and costs are entered for each year. Note that the more accurate the forecasts of price and cost, the more accurate the results.

The expected production information is likely easier to forecast than markets, since producers have more control of this and are used to compensating for negative events. Again, it is wise to use information that is conservative and within the realm of reality. Overestimating production could make an unwise strategy appear practical, while underestimating production may make a practical strategy look unwise, much like the old computer users cliché, “garbage in – garbage out.” This information, where possible, comes from a producer’s production history and includes expectations of calving rates and observed weights of animals at time of sale. The information provided ultimately determines the number of heifers needed and available for retention, as well as the animals available for sale annually.

The final section is the feeding regimen. This section has much to do with whether a producer is profitable, since feed is the largest single portion of variable costs. Information in this section comes from two sources, the products to be fed to the animals and the expected costs of those products. Historical information is helpful in forecasting these two factors, as well as current environmental and market conditions. A producer’s history on what has been fed each year (i.e. months on pasture or corn stalks) is generally a good guide in determining what feed inputs will be needed in the future. Trends in the market may be a help in determining what the costs of those feedstuffs might be over the next five years. Since feedstuffs are such a large portion of costs, increasing or decreasing prices are likely to alter the choices a producer may make in the actual feed regimen.

The CCHFC can be a very useful tool for those who manage or own cattle and wish to see how that herd might financially perform in the next five years. This provides a method to propose herd management changes and see how those changes might alter the financial outcome. An example of how this tool might be useful follows: A producer has a current herd of 400 cows, but recently suffered from drought conditions. Due to these conditions the producer has decided to cull 50 percent of the cows and bulls, which was done in the previous December. With the coming spring, conditions have

changed and are starting to improve. This producer now wants to consider rebuilding the herd back to its original size. The producer has decided to rebuild the herd using as many replacement heifers as possible, but thinks it's wise to compare this strategy with that of purchasing cows. This is the ideal tool to estimate both of these strategies and their overall effect on the operation's net worth. It is fairly simple to compare many different options, from buying back animals at different rates with varying cost and price scenarios, to using different feed sources. Hopefully, the producer in this example will find the conditions which are most profitable, and help to identify those conditions to trigger the appropriate plan.

Understanding Possibilities Map

Two different "possibilities outcome maps" and what they might look like is illustrated in the figure. These two distinct possibility outcome mappings are of (BNW) and (ENW) based on some given scenario. The vertical axis indicates probabilities. The horizontal axis lists dollars of net worth. The points that make up the curves are the probabilities associated with having a net worth of equal to or less than that value. Looking at the graph, the producer would have a 15 percent chance that BNW would be equal to or greater than ENW, up to \$410,000 of value. Conversely, 85 percent of the time, ENW will be greater than or equal to the BNW. These probabilities are based on 500 randomly drawn scenarios for a future five-year time period.

Tool Locator

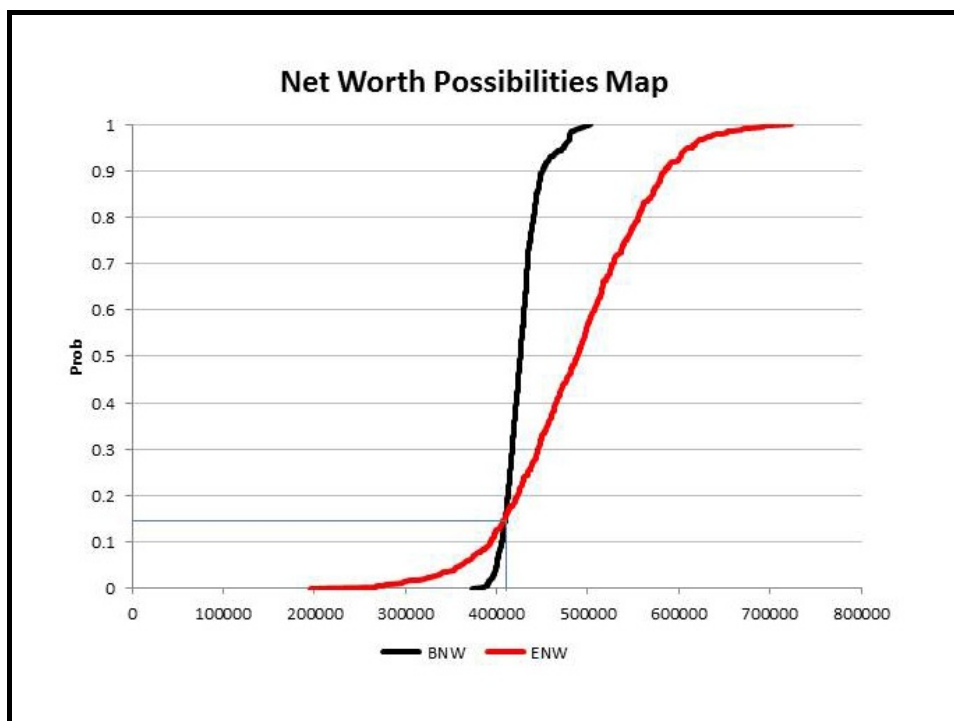
The CCHFC, as well as other tools such as the "Cow-Calf Cost Cow-Q-Lator" and "The Feed Cost Cow Q-Lator" are available for download at <http://westcentral.unl.edu/agecon/> under the "Livestock Production Decision Aids" title. These tools are useful tools for producers and stakeholders to make short-term decisions. The "Cow-Calf Cost Cow-Q-Lator" is an aid in calculating the annual costs, revenues and profit of raising a single calf. The "Feed Cost Cow-Q-Lator" assists livestock producers in: 1) estimating the true feeding costs of Crude Protein (CP), energy (TDN) and dry matter (DM) for any given feed; 2) comparing the feeding value of various sources of feeds including concentrates, forages and/or grains; 3) estimating the needed quantity of feed and true cost of feeding a specific group of livestock; 4) establishing the value of any internally produced forage; and 5) may be an aid in the negotiation of a fair price for purchased feed.

For help in using these tools please contact your local extension educator or contact one of the authors.

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