# Representative Economic Budget for Northeast /North Central Nebraska 200 Head Cow Herd 

Dec. 2021

## Background

In North Central Nebraska, the cattle industry is vibrant. In this area of the state, a representative size cow herd would be 200 cows with ten bulls. This size herd would make up 40 percent of a typical farm/ranch operation in this area. With this size of operation, farm or ranch operators can handle most of the labor themselves. In addition to the 200-cow herd, producers typically raise hay, some feed grain for feed and sale while many are involved in custom haying or other machine-hire operations.

This budget was compiled from discussions and information provided by a roundtable group of producers from the area and updated late 2021. This budget should be used as a guide as it represents a typical cow calf production system for producers in northeast /north central Nebraska.

It is important to note that feed and hay costs along with pasture and stalk rent expenses are included in this representative budget as cash expenses, even if a producer owns their own hay, pasture, and crop ground with residue or stalks for grazing. Individual producers can indicate an opportunity cost for their land use for the cow-calf enterprise in lieu of cash rental expenses in their budgets.

## Livestock Management Practices

Typical calving time for farms in this area is March and April with some calving going into May. Weaning rate per exposed cow is figured at 93 percent or 186 head split evenly between steers and heifers. The annual cull rate for cows is 10 percent. In this area and with this herd size, replacement heifers are generally purchased. Chart 1: 200 cow herd production flow chart - page 3.

Weaning time for the calves is in early October each year with weaning weights averaging 550 pounds per calf. The calves are backgrounded for 60 days in a dry lot and generally sold late November in the 625 to 675 -pound weight class. Backgrounded calves, fed after weaning until sale sixty days later, typically gain just under two pounds per day or 100 pounds total for approximately $\$ 1$ per day, feeding alfalfa and/or distiller's grain and rolled corn.

Pasture is utilized for the herd from May through September with a stocking rate of fifteen acres per pair for the season. Yearling heifers are kept separate from cows while on pasture. Crop residue (cornstalks) are utilized from November through February. Hay and supplement is provided during February to April as the cows are preparing to calve. Hay is provided during the winter as needed. Bulls are generally on pasture for five months, fed hay four months and the other three months of the year, they are provided feed supplement.

## Machinery, Equipment and Facilities

Basic equipment utilized for the cow-calf enterprise in this part of the state might include an ATV, pickup, a couple of tractors that would be also utilized for the crop enterprise, stock trailer, feed wagon, hay processor, portable chute, and panels. Facilities often include a barn for calving and corrals. The value of machinery and equipment allocated to the cow-calf enterprise is shown in the budget. Annual repair expenses for these assets are shown in the budget as fixed cash costs. Depreciation and opportunity costs of ownership are noted in the budget as non-cash costs.

## Non-Feed Input Costs

Non-feed input costs can be entered into the budget on a "per animal" or a whole herd basis. In this representative budget, these costs were entered on a per animal basis and include labor, fuel, veterinary and medical cost, and marketing costs. Labor, fuel, and veterinary and medical costs are allocated to each animal category based on net increase in value during the production year. Marketing costs are broken down by each animal category of the herd and allocated accordingly. For example, cull bull marketing of $\$ 25$ per animal is included on the bull budget page and the system budget which is a summary of all projected revenue and expenses at the end of the budget report. The cost of direct marketing and the costs per head to sell thru a nearby sale barn can vary tremendously. Marketing expense includes the sales commission, transportation and other costs to market. In this budget, both a commission and charge for hauling the cattle to sale are figured into marketing expense.
Included in this budget is the value and expense for two horses. Feed for the horses is noted separately from the cow calf enterprise feed.

## Other Depreciation, Interest and Overhead Costs

Depreciation for purchased replacement heifers and bulls is figured in the difference of their cost of purchase to their sale value when culled. These figures are included in the breeding and bull budget pages and are carried over into the total system budget page as income when sold and expense when purchased. Depreciation expense for tax purposes would be handled differently, in consultation with a tax accountant.

Opportunity interest of 3 percent is figured on the value of investment total in the livestock herd. This is an economic cost reflecting what rate of return could be earned if the herd was sold and the money invested in its most profitable alternative use.

Overhead expenses include the farm's annual insurance premium and professional fees. Real estate value and taxes are not included in this example because, as stated previously, rental costs are paid for all hay, stalks and pasture. Therefore, this budget is making the assumption that no ground utilized for the cow calf operation is owned by the cow calf enterprise. Real estate tax on the facilities is included in the budget and property tax is included in other expenses for the vehicles and equipment. An annual management charge and other expenses that pertain to the cow calf herd may be entered but are left blank in this representative budget.

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Chart 1: Cow-calf production flowchart, 200 cow herd - Northeast /North Central Nebraska

*93\% weaning rate per exposed cow $100 \%$ purchased heifers as replacements.

200 Head Cow Herd Livestock Budget Worksheet pages attached include:
Budget Input Sheets
Bull Budget
Breeding Herd Cash Budget
Backgrounded Calf Budget
Cow-calf System Budget Report (summarizes all budget information)

# Cow Herd System Budget 

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This budgeting workbook is designed to provide analysis of the components of a beef production system. This template provides an example of a $\mathbf{2 0 0}$ head cow herd based in Northeast Nebraska. It may be modified for current values, various herd sizes, management practices, and locations.

Budget template designed by Roger Wilson, retired FArm \& Ranch Management Analyst.

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## Budget Inputs

## Breeding Herd

|  | Herd size It is assumed that herd size remains stationary so <br> Average Cow Value replacements will equal cow culls and cow deaths. If too <br> Cows Culled per Year few replacements are purchased, the worksheet <br> Cow Deaths per year automatically retains heifers. |  |  | 200 | Cows |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 1,400 | \$ / head |
|  |  |  |  | 20 | Cows |
|  |  |  |  | 4 | head |
|  | Number of Replacements Needed |  |  | 24 |  |
|  | Estimated Weaning Rate |  |  | 93 | percent |
|  | Extra Heifers Retained for Breeding that Will Not Be Used as Replacements Culled Replacement Heifer Weight When Sold Culled Replacement Heifer Selling Price Cost of Marketing Culled Replacement Heifers |  |  |  | head |
|  |  |  |  |  | \$ / cwt |
|  |  |  |  |  | \$ / head |
|  | Replacement Females Purchased (<=24) |  |  | 24 | head |
|  | Replacement Female Cost (if applicable) |  |  | 1,800 | \$ / head |
|  | Cow Cull Weight Non-Fed Cull Cow Price |  |  | 1,400 | pounds |
|  |  |  |  | 60 | \$ / cwt |
| $\frac{00}{\overline{\bar{j}}}$ | Bulls Needed <br> Bull Purchase Price <br> Bull use (years) <br> Bull Death Loss Rate <br> Cull Bull Price <br> Cull Bull Weight |  |  | 10 | Bull(s) |
|  |  |  |  | 3,000 | \$ / head |
|  |  |  |  | 4 | years |
|  |  |  |  | 0\% |  |
|  |  |  |  | 85 | \$ / cwt |
|  |  |  |  | 1,800 | pounds |
|  | Calves Weaned Steer Weaning Weight Heifer Weaning Weight Weaned Steer Price Weaned Heifer Price |  | (<=186) | 186 | head/year <br> pounds <br> \$ / cwt <br> \$ / cwt |
|  |  |  | 575 |  |
|  |  |  | 525 |  |
|  |  |  | (>=10) | 183 |  |
|  |  |  | (>=10) | 170 |  |

## Background Calves

|  | Days Fed Death Loss | (0-100) | 60 | days |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | 1 | percent |
| $$ | Retained after Weaning End Weight Market Price | (<=93) | 92 | head pounds \$ per cwt |
|  |  |  | 675 |  |
|  |  | (>=10) | 170 |  |
|  | Retained after Weaning End Weight Market Price | (<=93) | 92 | head pounds \$ per cwt |
|  |  |  | 625 |  |
|  |  | (>=10) | 160 |  |

Stocker

|  | Days Fed |  | days |
| :---: | :---: | :---: | :---: |
|  | Death Loss | (0-100) | percent |
|  | Retained for Grazing End Weight Market Price | $(<=91)$ $(>=10)$ | head pounds \$ per cwt |
|  | Retained for Grazing End Weight Market Price | $(<=91)$ $(>=10)$ | head pounds \$ per cwt |

## Feedlot

|  | days |
| :--- | :--- |
|  |  |
|  | percent |


| ¢ ¢ ¢ ¢ | Placed on Feed End Weight Market Price | $\begin{gathered} (<=0) \\ (>=10) \end{gathered}$ | head pounds \$ per cwt |
| :---: | :---: | :---: | :---: |
|  | Placed on Feed End Weight Market Price | $\begin{array}{r} (<=0) \\ (>=10) \end{array}$ | head pounds \$ per cwt |
| Fed Cull Cow |  |  |  |
|  | Days Fed <br> Death Loss <br> Placed on Feed <br> End Weight <br> Market Price | $\begin{gathered} (0-100) \\ \hline(<=20) \\ (>=10) \end{gathered}$ | days |


| Feed |  |  |  |  |  |
| :--- | ---: | :---: | :---: | ---: | ---: |
| Name | Price per Unit <br> Purchased | Priced Unit <br> (tons, lbs. etc) | Fed Unit <br> (tons, lbs. <br> etc) | Fed Unit per <br> Priced Unit | As Fed Price |
| Pasture | 80.00 | month | day | 30 | 2.63 |
| Grain mix (distillers \& corn) | 195.00 | ton | lbs | 2000 | 0.10 |
| Prairie Hay | 130.00 | ton | lbs | 2000 | 0.07 |
| Alfalfa | 150.00 | ton | lbs | 2000 | 0.08 |
| Distiller's Grain - modified wet | 100.00 | ton | lbs | 2000 | 0.05 |
| Salt and Mineral | 120.00 | ton | ounce | 32000 | 0.04 |
| Dried Distiller's Cubes - bulk | 300.00 | ton | lbs | 2000 | 0.15 |
| Corn | 5.25 | bu | lbs | 56 | 0.09 |
| Dried Rolled Corn | 5.40 | bu | lbs | 56 | 0.10 |
| Corn Stalks | 0.75 | day | day | 10.75 |  |


| Non-Feed Input Costs |  |  | Allocation Percentage |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Name | Cost per Year | Is This Cost Per Animal or for All Animals? | Breeding Herd (Optional) | Background Calf (Optional) | Stocker (Optional) | Feedlot (Optional) |
| Labor | 30.00 | per animal |  |  |  |  |
| Fuel | 20.00 | per animal |  |  |  |  |
| Veterinary and Medical | 25.00 | per animal |  |  |  |  |
| Cull Cow Marketing | 25.00 | per animal | 0\% | 0\% | 0\% | 0\% |
| Cull Bull Marketing | 25.00 | per animal | 0\% | 0\% | 0\% | 0\% |
| Cull Replacement Marketing | 25.00 | per animal | 0\% | 0\% | 0\% | 0\% |
| Weaned Calf Marketing | 25.00 | per animal | 0\% | 0\% | 0\% | 0\% |
| Backgrounded Calf Marketing | 25.00 | per animal | 0\% | 0\% | 0\% | 0\% |
| Stocker Marketing | - | per animal | 0\% | 0\% | 0\% | 0\% |
| Feedlot Marketing | - | per animal | 0\% | 0\% | 0\% | 0\% |
|  |  |  |  |  |  |  |
| Horse maintenance /feed | 2,000.00 | all animals |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Depreciable Input Cos |  |  |  |  |  | Allocati |


| Name | Current Value | Future Value | Time Horizon | Annual Repairs | Breeding Herd (Optional) | Weaned Calf Background (Optional) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Buildings /Barn /Fencing | 100,000 | 30,000 | 25 | 1,000 |  |  |
| General machinery \& equipment | 100,000 | 25,000 | 10 | 1,000 |  |  |
| Vehicles | 35,000 | 10,000 | 7 | 1,200 |  |  |
| 2 Horses (\$5,000 value each) | 10,000 | - | 10 |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |


| Interest |  |
| :--- | :---: |
| Operations Interest Rate <br> Opportunity Rate | $6 \%$ |


| Overhead Costs |  |  | Allocation Percentag |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount |  | Breeding Herd (Optional) | Background Calf Wintering (Optional) | Stocker (Optional) |
| Real Estate Value* Real Estate Tax Annual Insurance Premium Professional Fees Annual Management Charge Other |  | per year per year per year per year per year |  |  |  |
|  | 540 |  |  |  |  |
|  | 2,500 |  |  |  |  |
|  | 1,000 |  |  |  |  |
|  |  |  |  |  |  |
|  | 750 |  |  |  |  |

Bull Budget



Breeding Herd Cash Budget (200 Cows)


|  |  | Total Non-Cash Costs | 30,625 | 153.12 | 164.65 |  |
| :--- | ---: | ---: | ---: | ---: | ---: | :---: |
| Total Cash and Non-Cash |  |  | Herd Total | Per Cow | Per Calf |  |
|  |  |  | Total Costs | 265,491 | $1,327.46$ | $1,431.50$ |
|  |  | Total Net Income | $(67,830)$ | $(339.15)$ | $(368.80)$ |  |



System Budget



