## 300 Head Cow Herd - Representative Budget for Southwest Nebraska

## Background

Cattle production in southwest Nebraska is an important economic driver in this area. Herd sizes vary; however, a 300-head cow herd is representative of the area. With this size of operation, a farm or ranch operator can handle most of the labor themselves; however, at least seasonally, there is at least one part-time person employed or someone from the family assists with the herd. In addition to the 300-cow herd, producers may raise row crops and hay for feed and to sell.

## Livestock Management Practices

Typical calving time for farms in southwest Nebraska is March and April. Half of the cow calf operations keep replacement heifers of their own and the other half buy replacement heifers. Calves not held back for replacements or for pre-conditioning are sold at weaning (typically 205 days). Weaning rate per exposed cow is figured at $92 \%$. Weaning time for the calves is in the fall each year with weaning weights averaging 525 to 575 pounds per calf. For this budget example, half of the weaned calves are kept for a sixty-day period for pre-conditioning where they will gain from 90 to 150 pounds. The preconditioned calves are generally sold after the first of the year depending on the producer's income tax plan. The cull rate for cows is approximately $10 \%$ annually, while bulls are culled every 4 to 5 years.

Chart 1: Cow-calf production flowchart provides production numbers for a typical 300-head cow herd in the southwest Nebraska.

## Pasture and Feed

Pasture and annual forages are utilized for the herd from May through September, then crop residue (corn stalks) and some cover crops are utilized from October up to March $1^{\text {st }}$. Supplementation is provided to the cows February through April, precalving through calving season.

In this region of Nebraska, fifty percent of the pasture and crop residue land utilized for the cowcalf herd is owned with operators renting the other half for their cattle. Current pasture rental rates in the area are $\$ 50$ to $\$ 60$ per pair per month with pasture utilized for the herd from the May to September timeframe each year.

Raised feed and hay costs along with pasture and stalk rent expenses are included in the accompanying representative budget as cash feed expenses, even though a producer may own their own pasture, hay, and crop residue or stalk ground and raise their own feed grains. Typically pasture, hay, and raised crops should be considered as separate enterprises where the option of selling the products exists. Individual producers may indicate an opportunity cost for their land use for the cow-calf enterprise in lieu of current cash feed value or rental expenses in their budgets. Additional costs including pasture maintenance expenses (weed and cedar tree control) should be included if ownership costs versus the cash rental option in the budget is used.

## Machinery, Equipment and Facilities

Equipment utilized for the cattle enterprise includes a pickup, small 100 to 150 HP tractor with bucket, a stock trailer, feed wagon, portable chute, fence, and gate panels, and in many cases an ATV. Facilities typically include a steel or wood barn, a calving shed, corrals and barb wire fencing of approximately two miles and temporary fencing for stalks. Annual repair expenses for machinery and facilities 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 \$35 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 expenses include 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. A marketing expense adjustment is added to the backgrounding calves' budget to account for any expense difference from that of the weaned calves.

## 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 were 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 assumes 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.

## Prepared by:

Glennis McClure, Extension Educator in Ag Economics Erin Laborie, Beef Systems Extension Educator Brent Plugge, Beef Systems Extension Educator Randy Saner, Beef Systems Extension Educator

Chart 1: Cow-calf production flowchart, 300 head cow herd - Southwest Nebraska

$50-50 \%$ raised vs purchased heifers

300 Head Cow Herd Livestock Budget Worksheet pages attached include:
Budget Input sheets
Bull budget
Replacement budget
Breeding herd cash budget
Pre-conditioned calves' worksheet
Cow-calf System Budget report (summarizes all budget information)

# Cow Herd System Budget 

Glennis McClure, Extension Educator /Farm \& Ranch Management Analyst

This budgeting workbook is designed for the medium and small sized operator. It includes spreadsheets for analyzing the components of a beef production system separately but provides a combined analysis as well.

This template provides an example of a $\mathbf{3 0 0}$ cow herd based in southwest Nebraska. It may be modified for various herd sizes, practices, and locations.

Credit to Roger Wilson, retired Farm Management /Budget Analyst for this budget template.

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## Budget Inputs

## Breeding Herd



Pre-conditioned Calves

|  | Days Fed | (0-100) | 60 | days |
| :---: | :---: | :---: | :---: | :---: |
|  | Death Loss |  | 0 | percent |
| $$ | Retained after Weaning | (<=139) | 140 | head pounds \$ per cwt |
|  | End Weight | (>=10) | 700 |  |
|  | Market Price |  | 165 |  |
|  | Retained after Weaning | (<=122) | 115 | head pounds \$ per cwt |
|  | End Weight |  | 650 |  |
|  | Market Price | (>=10) | 158 |  |

## Stocker

|  | Days Fed | (0-100) | days |
| :---: | :---: | :---: | :---: |
|  | Death Loss |  | percent |
| ¢ | Retained for Grazing End Weight <br> Market Price | $\begin{gathered} (<=140) \\ (>=10) \end{gathered}$ | head pounds \$ per cwt |
|  | Retained for Grazing End Weight Market Price | $(<=115)$ $(>=10)$ | head pounds \$ per cwt |


| Feedlot |
| :--- |
| $\|$Days Fed <br> Death Loss |



| Fed Cull Cow |  |  |  |
| :---: | :---: | :---: | :---: |
| Days Fed |  |  | days |
| Death Loss | (0-100) | 0 | percent |
| Placed on Feed | (<=29) |  | head |
| End Weight |  |  | pounds |
| Market Price | (>=10) |  | \$ per cwt |


| Feed |  |  |  |  |  |
| :--- | ---: | :---: | :---: | ---: | ---: |
| Fame | 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 |
| Creep Feed | 300.00 | ton | lbs | 2000 | 0.15 |
| Pasture | 50.00 | 1 month | day | 30 | 1.67 |
| Prairie Hay | 130.00 | ton | lbs | 2000 | 0.07 |
| Alfalfa | 190.00 | ton | lbs | 2000 | 0.10 |
| DDG Cubes | 300.00 | ton | lbs | 2000 | 0.15 |
| Salt and Mineral | 900.00 | ton | ounce | 32000 | 0.03 |
| Silage | 40.00 | ton | lbs | 2000 | 0.02 |
| Corn | 5.40 | bu | lbs | 0.10 |  |
| Wet Distiller's Grain | 100.00 | ton | lbs | 56 | 2000 |
| Corn Stalks | 0.50 | day | day | 0.05 |  |

## Non-Feed Input Costs

| Name | Cost per Year | Is This Cost <br> Per Animal or <br> for All <br> Animals? |
| :--- | ---: | :---: |
| Labor | 10.00 | per animal |
| Fuel / transportation | 15.00 | per animal |
| Veterinary and Medical | 30.00 | per animal |
| Cull Cow Marketing | 30.00 | per animal |
| Cull Bull Marketing | 30.00 | per animal |
| Cull Replacement Marketing | 30.00 | per animal |
| Weaned Calf Marketing | 20.00 | per animal |
| Backgrounded Calf Marketing -Adj. | 25.00 | per animal |
| Stocker Marketing | - | per animal |
| Feedlot Marketing | - | per animal |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Allocation Percentage

| Breeding <br> Herd | Pre- <br> Conditioned <br> calves <br> (Optional) | Stocker <br> (Optional) | Feedlot <br> (Optional) |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Feedlot (Optional)

|  |  |  | Future <br> Value <br> Horizon | Annual <br> Repairs | Breeding <br> Herd <br> (Optional) | Weaned <br> Calf <br> Wintering <br> (Optional) |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Name | Current Value | Future Value |  |  |  |  |

## Interest

Operations Interest Rate
Opportunity Rate
3\%

| Overhead Costs |  |  | Allocation Percentad |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount |  | Breeding Herd (Optional) | Weaned Calf Wintering (Optional) | Stocker (Optional) |
| Real Estate Value* <br> Real Estate Tax <br> Annual Insurance Premium <br> Professional Fees <br> Annual Management Charge Other |  | per year per year per year per year per year |  |  |  |
|  |  |  |  |  |  |
|  | 1,500 |  |  |  |  |
|  | 750 |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |



| Replacement B | 17 Head* |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Feed Costs |  |  |  |  | Herd Total |
|  | Amount per Year |  | Per Animal or Total | Price |  |
| Pasture | 150 | day | per animal | @ 1.67 per day | 4,250 |
| Corn Stalks | 120 | day | per animal | @ 0.50 per day | 1,020 |
| Prairie Hay | 2700 | lbs | per animal | @ 0.07 per lbs | 2,984 |
| Wet Distiller's Grain | 800 | lbs | per animal | @ 0.05 per lbs | 680 |
| salt and mineral | 1200 | ounce | per animal | @ 0.03 per ounce | 574 |
|  |  |  |  | Total Feed Costs | 9,507 |

Breeding Herd Cash Budget
(300 Cows)






