

FARM MANAGEMENT GUIDE

KSU Dairy Cow Budget-Purchased Replacements

Current Prices

(as of Dec. 4th, 2017)

Production Efficiency Information

Milk Produced Per Cow (lbs)	23,500				
Replacement Heifer Purchases	35.0%	Cull Cows Sales	28.0%	Calves Sold	92%

Returns	Price	Unit		Qty	Unit		Total per Cow/Year	Total per CWT Milk/Year
Milk Sales	\$ 17.30	per cwt	x	23500	lbs	=	\$ 4,065.50	\$ 17.30
Milk Premiums	\$ -	per cwt	x	23500	lbs	=	\$ -	\$ -
Calves Sold	\$ 170.00	per head	x	0.92	hd	=	\$ 156.40	\$ 0.67
Cull Cows Sold	\$ 49.25	per cwt	x	1350	lbs	x 0.28 =	\$ 186.17	\$ 0.79
Manure Credit							\$ 135.00	\$ 0.57
Other Income							\$ 60.00	\$ 0.26
Total Gross Return							\$ 4,603.07	\$ 19.59

Variable Costs

Feed Cost	\$ 5.57	per head/day	x	365	days		\$ 2,034.32	\$ 8.66
Replacement Heifers	\$ 1,450.00	per head	x	0.35	hd	=	\$ 507.50	\$ 2.16
Cow Breeding Fees							\$ 58.50	\$ 0.25
Daily Labor	\$ 13.50	per hour	x	33.0	hours	=	\$ 445.50	\$ 1.90
Management Labor	\$ 25.00	per hour	x	8.0	hours	=	\$ 200.00	\$ 0.85
Milk Marketing & Hauling							\$ 104.00	\$ 0.44
Veterinary							\$ 110.00	\$ 0.47
Fuel & Oil							\$ 60.00	\$ 0.26
Utilities							\$ 56.00	\$ 0.24
Machinery, Facility/Equip. Repairs							\$ 155.00	\$ 0.66
Bedding							\$ 81.00	\$ 0.34
Custom Hire							\$ 72.00	\$ 0.31
Cash Interest Paid							\$ 85.00	\$ 0.36
Other variable costs							\$ 270.00	\$ 1.15
Total Variable Costs							\$ 4,238.82	\$ 18.04

Fixed Costs

Depreciation							\$ 187.00	\$ 0.80
Farm/Livestock Insurance							\$ 49.00	\$ 0.21
Opportunity Cost of Investment							\$ 260.00	\$ 1.11
Other fixed costs							\$ 102.00	\$ 0.43
Total Fixed Costs							\$ 598.00	\$ 2.54

Total Costs

Total Costs							\$ 4,836.82	\$ 20.58
Income Over Variable Costs							\$ 364.25	\$ 1.55
Income Over Total Costs							\$ (233.75)	\$ (0.99)

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K-State's Agricultural Economics Department annually publishes *Farm Management Guides* to estimate the current profitability of different agricultural enterprises. The format for these livestock budgets allows the user to change certain key inputs to cater the budget to their production situation. Environmental factors, management, operation size, local cash prices, and a variety of other situations makes budgeting to the entire state of Kansas difficult. While defaults in the spreadsheet are research-based estimates, users should enter their own prices and costs using the cells in **blue**. Base input and output prices populate each budget without reference to any specific time period or specific production period. Users are encouraged to update prices to best reflect their specific situation.

Three different sets of price forecasts are available in the spreadsheet. By clicking the dropdown menu at the top of the budget, a user can select "Current Prices", "One Year Out Prices", or "Five Year Out Prices". All price assumptions can be viewed in the *Prices* tab and be adjusted according to the user's own expectations and local market conditions. Only default milk, cattle, and feed prices differ when looking at different time horizons. Other costs will remain fixed.

The source of default estimates are noted in the explanations to follow, but most of the production costs are taken from The Center for Farm Financial Management "FINBIN" database (www.finbin.umn.edu). Values for the previous 10 years are regressed to predict a current year value using a time trend, also smoothing out year-to-year variation. Values that did not display a time trend were computed as an average over this time period.

This budget assumes all calves are sold when they are less than a week old and the operation purchases all replacement heifers. This way the milk cow and replacement heifer enterprises can be evaluated separately. See the "Cow Milking-Raised Replacement budget" or "Replacement Heifer" budget to evaluate raising replacement heifers.

Production Efficiency Measures

Milk Produced Per Cow: Average pounds of milk per cow per year. This has a HUGE effect on ending profitability, so should be adjusted to fit the operation. Default is roughly the FINBIN cow average and Kansas Farm Management Association (KFMA) dairy farm enterprise average.

Replacement Heifer Purchases: Amount of heifers purchased in relationship to the entire herd, listed as a percent. FINBIN typically displays a 35% turnover rate.

Cull Cow Sales: Will be different than percentage of heifers purchased to account for death loss or those cows with no salvage value. FINBIN farms average 7% cow death loss.

Calves Sold: Percentage of live, marketable calves. Note that this budget assumes you sell all calves soon after birth (minus death loss) and purchase all replacement heifers.

**Note: FINBIN defaults are based on an average of 533 farms with a current average herd size of 169 cows (milking and dry) and average milk per cow of 22,466 pounds*

Returns

Milk Sales: Milk produced per cow multiplied by milk price.

Milk Premiums: Enter any volume, quality, or other premiums to be applied to pounds of milk produced not already captured in milk sales.

Calves Sold: Price based on 50% bull calf and 50% heifer calf price, adjusted for death loss.

Cull Cows Sold: Enter average cull cow weight to be multiplied by price and sales percentage.

Manure Credit: Assumes a value for nitrogen and phosphorus if sold or value to field in reduced fertilizer expense. Default is \$135 per head (hauling captured in Custom Hire below).

Other Income: Patronage refunds, government program payments, etc., should be entered here.

Variable Costs

Feed Cost: Enter dollar per head per day cost over the entire year (includes both milking and dry periods). Default is a regression of daily feed cost per head in the FINBIN database in relation to corn, soybean, alfalfa price, and total milk produced per cow.

Replacement Heifers: Dollar per head purchase price multiplied by percentage of replacement purchases.

Cow Breeding Fees: Default is FINBIN value.

Labor: FINBIN average labor is near 41 hours per cow with a total paid labor cost just over \$400 per cow. Unpaid Labor and Management is near \$200 per cow, which makes up the other portion of the 41 hours. These values will vary tremendously depending on the efficiency and level of technology in the operation.

Milk Marketing & Hauling: Default is FINBIN value.

Veterinary: Default is FINBIN value.

Fuel & Oil: Default is FINBIN value.

Utilities: Default is FINBIN value.

Machinery, Facility/Equip. Repairs: Default is FINBIN value.

Bedding: Default is FINBIN value.

Custom Hire: Default is FINBIN value for expenses related to manure hauling, hoof trimming, etc.

Cash Interest Paid: Default is FINBIN value.

Other Variable Costs: FINBIN value for any "Dairy Supplies referring to cleaning/chemicals/filters/etc. Enter other misc. items as needed.

Depreciation: Default is based on FINBIN values for buildings and machinery.

Farm/Livestock Insurance: Default is FINBIN value.

Opportunity Cost of Investment: This is not a cost listed in the FINBIN database, but typically the Kansas Farm Management Association (KFMA) has this near 5.5% of total costs for Kansas dairies.

Other Fixed Costs: Default is FINBIN value for building and equipment leases, taxes, and other fixed overhead. Add other fixed costs as needed.

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Budget Assumption

Default Dairy Prices

	Current	One Year Out	Five Years Out
Corn (\$/bu)	\$ 3.30	\$ 3.75	\$ 3.40
Soybeans (\$/bu)	\$ 9.50	\$ 9.71	\$ 9.50
Dairy Alfalfa (\$/ton)	\$ 160.00	\$ 181.82	\$ 164.85
16% 100 pounds of feed (\$)	\$ 7.55	\$ 8.44	\$ 7.74
Milk:Feed Ratio	\$ 2.29	\$ 2.13	\$ 2.20
Milk (\$/cwt)	\$ 17.30	\$ 18.00	\$ 17.05
Replacement Heifers (per hd)	\$ 1,450.00	\$ 1,550.00	\$ 1,342.00
Dairy Bull Calves (per hd)	\$ 140.00	\$ 181.00	\$ 123.00
Dairy Heifer Calves (per hd)	\$ 200.00	\$ 258.00	\$ 229.00
Dairy Cull cow (per cwt)	\$ 49.25	\$ 49.00	\$ 44.00

Contributors:

Robin Reid	Glynn Tonsor
Extension Associate	Assistant Professor
KSU-Ag. Economics	KSU-Ag. Economics