



**Worksheet 1\***  
**Historic and Projected Out-of-Pocket Cost of Production**

Records used for a sole proprietorship with most of the income coming from the dairy enterprise: Federal Income Tax Schedule F, Form 4797, year beginning and ending inventories, cwt. of milk sold for the calendar year.

**Farm Calculation**  
**Using \_\_\_\_\_ Financials**  
**(year)**

Schedule F Expenses <sup>1</sup>		_____
+ Accrued Expenses <sup>2</sup>	+	_____
- Prepaid Expenses <sup>3</sup>	-	_____
- Schedule F depreciation <sup>4</sup>	-	_____
- Non milk income <sup>5</sup>	-	_____
+/- inventory growth (-); decline (+) <sup>6</sup>	+/-	<u>_____</u>

Out-of-Pocket Cost of Production		\$ _____
÷ cwt. Milk sold <sup>8</sup>	÷	<u>_____</u>

Out-of-Pocket Cost of Production per cwt.	(historic)	\$ _____/cwt
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Out-of-Pocket Cost of Production		\$ _____
+/- % adjustment for farm projection <sup>7</sup>	+/-	<u>_____</u>

Projected Out-of-Pocket Cost of Production		\$ _____
÷ cwt. Milk sold <sup>8</sup>	÷	<u>_____</u>

Projected Out-of-Pocket Cost per cwt	(projected)	\$ _____/cwt
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**Worksheet 2\***  
**Historic and Projected Cash Flow Planning Cost**

Records used for a sole proprietorship with most of the income coming from the dairy enterprise: Actual and projected out-of-pocket costs of production from Worksheet 1, operator's personal draw, operator's retirement investment, principal paid, depreciation, capital investment expenditures and actual or estimated income tax obligations.

	<b>Farm Calculation</b>		<b>Projection for</b>
	Using _____ (year)		_____ (year)
	<b>Financials</b>		
Out-of-Pocket Cost of Production (from Worksheet 1)	\$ _____	Projected Out-of-Pocket Cost of Production (from Worksheet 1)	\$ _____
+ Operator's personal draw <sup>9</sup>	+ _____		+ _____
+ Operator's retirement investment <sup>10</sup>	+ _____		+ _____
+ Replacement <sup>11</sup>	+ _____		+ _____
+ Estimated taxes <sup>12</sup>	<u>+</u> _____		<u>+</u> _____
Historic Cash Flow Needs	\$ _____	Projected Cash Flow Needs	\$ _____
÷ <u>cwt. of milk sold</u> <sup>8</sup>	÷ _____		÷ _____
Historic Cash Flow Planning Cost per cwt	\$ _____/cwt	Projected Cash Flow Planning Cost	\$ _____/cwt

\*These worksheets are intended to provide a way to use historic records to calculate the dairy farm's Out-of-pocket and cash flow costs of producing milk. While a single year's cost may provide a fairly representative production cost for the farm, a variety of factors can cause the long-term costs to be over or under-estimated. An average of three years' calculations would provide a sound basis for milk pricing decision making.

Examples of factors that would cause the out-of-pocket and cash flow milk production costs to change:

- Changes in debt due to retirement of old debt and/or new debt from purchase of assets. Debt levels in the current year may include interest and principal payments representing only part of the future debt commitments.
- Changes in production with or without an associated impact on absolute costs. Careful thought must be given to how production changes will affect costs per cwt.
- Changes in major expense categories such as feed, labor, etc.
- Sales of assets and what was done with the proceeds from the sale of assets. Were the proceeds used in ways that will increase or decrease future production costs?

### Working Notes

<sup>1</sup>Schedule F Expenses - Total farm expenses from Federal Tax form 1040F, line 33.

<sup>2</sup>Accrued expenses - Two types of expenses fall into this category. Typically, we think of expenses prepaid in the previous year for items used in the production of milk in the current year for which calculations are being made. This is often done to minimize income tax liabilities in high-income years. Also include expenses for items that were used in the year being evaluated but were not paid until the following year. This would include accounts payable, line-of-credit or credit card balances if not included elsewhere.

<sup>3</sup>Prepaid expenses - Expenses paid during the year being evaluated for items that will be used in the production of milk in the following year.

<sup>4</sup>Schedule F depreciation - Schedule F depreciation from Form 1040F, line 14 is a tax-based figure rather than a use-based figure to represent the use of assets such as machinery, equipment and buildings in the process of production. It is deducted here so that a figure more accurately representing the use of assets such as machinery, equipment and buildings can be added later. See Replacement<sup>11</sup>.

<sup>5</sup>Non-milk income - Non-milk income includes the sale of cull cows, breeding stock, cull heifers and bulls, as well as other regularly expected incomes such as co-op distributions, interest income and so forth. Non-milk income from these sources is an important part of the dairy business's income. We are recognizing that these items produce a regular source of income for the dairy so we will *deduct* their value from expenses.

Individual judgment should be used to determine whether government payments would be expected for projected years. Cash crop income

would also be included here. We are assuming that the income received for cash crops essentially equals their cost of production. Look at income items on Part I of the 1040F form as well as cull, market or breeding livestock income that might show up on federal tax Form 4797.

- <sup>6</sup>Inventory change - Inventory change calculated as the end of the year value less the beginning of the year value of raised feeds and livestock. Here we assume that the growth in these inventories typically represents the cost of the growth. A decline in the inventory of feeds or livestock represents an additional cost to the business. Only subtract the value of an increase in inventory if it is beyond a normal increase for the ongoing business, such as growing and storing feed for additional cows, which will be added to the operation after the year being analyzed.
- <sup>7</sup>Adjustment for farm projection - Evaluate expected changes for coming year. Based on anticipated increases or decreases in expenses, non-milk income and inventory changes, estimate any change for coming year.
- <sup>8</sup>Cwt. of milk sold - Hundredweights of milk you sold that were produced in the year being evaluated.
- <sup>9</sup>Operator's personal draw - Operator's withdrawals from the business for personal use other than retirement. In a corporation, operators' salaries are usually included in "labor hired" on Schedule F so be careful not to double count.
- <sup>10</sup>Operator's retirement investment - While these might normally be included in "operator's personal draw", investment in anticipation of retirement needs is vitally important for the long term well being of the farm family.
- <sup>11</sup>Replacement - Look at depreciation, principal payments and purchases of capital items for clues to what it takes on an annual basis to keep this business up to date. It may be appropriate to use any one of these on any given farm, but looking at all three provides important insights into what an appropriate annual "replacement" cost may be.

The **depreciation** claimed on the last few years' tax returns is very informative, but the depreciation claimed on one year's tax return could be misleading. Tax law allows farm businesses to claim a lot of depreciation in the year some items are purchased, which may overstate "replacement" in purchase years and understate it in following years. If the business is not rapidly growing or "winding down", an average of the last 3 to 5 years depreciation, with an adjustment for trend, may be a good estimate for "replacement."

Adjustments will be suggested by the calculation of annual principal payments, actual purchases and the current status of repair and replacement.

If a farmer borrows money to replace farm capital items, the **principal payments** are, in a sense, direct payments for replacement of those items. On farms that finance capital replacement, the sum of principal payments for machinery, equipment and building loans provides useful insight into what the business is currently expending to keep those items up to date.

Principal payments to repay operating loans should not be included. A farm might have principal due but not formally scheduled for repayment such as a balance on a line of credit or farm credit card balances. Any portion of this balance that was used to pay for items used in production for the year being evaluated should have been included as a schedule F expense or an accrued or prepaid expense.

Principal payments normally don't reflect all replacement costs because most farms make down payments and make some purchases from cash flow. Therefore, principal payments are most useful for setting a floor, or minimum value, for replacement. However, in some cases principal payments will equal or exceed the other two factors, which should lead to more probing.

**Actual annual expenditures** for machinery, equipment and buildings show what the farm has actually been spending for these items. A 5 to 10 year history of actual capital purchases will show what actual replacements have occurred, but are generally poor predictors of future expenditures. These numbers can be distorted by the fact that items such as large tractors and buildings are infrequently purchased on many farms.

Farm businesses tend to purchase capital items in years when incomes are up and defer purchases when income is down. It is frequently difficult to know how much the level of past or future purchases is impacted by expansion or "winding down" motives. Like principal payments, actual annual expenditures usually set a floor or minimum for replacement value, except in the case of a business that is growing rapidly in which case they may overstate replacement.

**Farms needing substantial maintenance, repairs, and replacement in order to stay in business**, need especially careful analysis. It is often hard to distinguish between a farm which is on its way out of the dairy business and one which is likely to continue, but has put off

substantial maintenance, repairs and replacement during a time of financial stress.

In either case, all three of the factors discussed above are likely to understate the annual replacement costs necessary for this farm to stay in business. In order to come up with a realistic cost of production it will be necessary to make a reasonable estimate of necessary and required deferred maintenance, repairs and replacement and make an allocation for an annual cost. In some cases, this analysis may lead to a conclusion that it is inappropriate to make those investments and continue the enterprise

<sup>12</sup>Estimated income taxes - Income taxes paid or estimated obligation for the year being evaluated. Include farm obligations only; do not include income tax obligations for off-farm employment.

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