

Use of On-Farm Pasteurized Milk Production Analysis Tool

Developed by David W. Hughes

Dhughe17@utk.edu

865-974-7463

University of Tennessee Extension
Department of Agriculture & Resource Economics

in Cooperation with the
Center for Profitable Agriculture

This document serves as a guide on how to use the On-Farm Pasteurized Milk Production Analysis Tool. The values presented in the analysis tool were developed based on data concerning the various costs of equipment, production and revenue related to on-farm pasteurized milk production. Data related to these costs were compiled from a variety of sources for use in the tool.

Note that the values related to costs of equipment, production and revenue were reviewed by individuals familiar with dairy processing prior to the finalization of this tool. However, users can change the estimates in the tool by entering their own data to match their unique situations.

The analysis tool is a model that can be accessed using Microsoft Excel. The analysis portion of the tool is composed of five separate sheets or tabs, including Equipment, Debt-Service, Mil-Opp-Cost, Per-Cow-Cost and Product-Profit. Users can identify the sheet or tab that is being accessed by viewing the sheet name at the bottom of the Excel window. Users will automatically land on an introductory sheet before opening the tool.

Accessing the On-Farm Pasteurized Milk Production Analysis Tool:

The On-Farm Pasteurized Milk Production Tool may be accessed online.

Navigation of the Analysis Tool:

Users can use the blue buttons to move from one tab/sheet to another. Also, at the top right of each tab/sheet there is a list of the tab/sheet names. Clicking on the link will take the user to that tab/sheet.

Description of Analysis Sheets Used in the Tool:

Each analysis sheet is described in the following sections:

Equipment: The basis of any operation is the necessary equipment for production to occur. Sixteen cost items are provided in this sheet corresponding to fourteen sets of equipment (the tank cleaning station is broken down into three cost items). The user can change or add additional equipment using the light blue cells. If the user overwrites the example equipment and wants to go back to the original equipment, click the blue “Default Equipment” button. Clicking the blue “Next” button will take the user to the next sheet: *Debt-Service*.

Debt Service: The fixed cost in this model (i.e., total equipment and building rehab costs), is assumed to be fixed throughout its loan (debt service). The amount to be financed in the debt-service sheet is linked to the total cost found in the *Equipment* sheet. The debt-service amount can be reduced by a down payment. The user can change or add data to the light blue cells. Based on this information, the monthly, annual, and per-cow payments are calculated. This information assumes producers utilize a one-hundred-cow herd. Clicking the blue “Next” button will take the user to the next sheet: *Milk-Opp-Cost*.

Milk-Opp-Cost: Because the milk utilized in the on-farm operation could have been sold to a milk processor instead of used on-farm, an opportunity cost (opportunity for a sale by other avenues) exists. The opportunity cost in this scenario is defined as the value of the sale that would have been made to the processor. This price was based on analysis of Class One milk prices at time of publication. The user can change this value to match their situation. Gallons of production per cow is multiplied by the price to obtain the estimate of the opportunity cost of processing the milk on-farm rather than selling it to an integrator. Gallons of production per cow is linked to the *Product-Profit* sheet. If the user wants to change this value, go to the *Product-Profit* sheet to make the change. Clicking the blue “Next” button will take the user to the next sheet: *Per-Cow-Cost*.

Per-Cow-Cost: The next sheet shows the operating costs for various items. These items are listed as per cow (based on the assumption of a one-hundred-cow herd) and can be adjusted by the user. The user can add or change the items in the light blue cells. The opportunity cost of milk that would have been sold to a milk processor is linked from the *Milk-Opp-Cost* sheet. (To change that value, go to the Milk-opp-cost sheet and follow those instructions to make your changes). The Debt Service value is based on the herd size (with a default value of one-hundred cows) from the *Product-Profit* sheet. Changing herd size will affect both this value and the Total Cost Per Cow value. If the user overwrites the example equipment and wants to go back to the original equipment, click the blue “Default Equipment” button. Clicking the blue “Next” button will take the user to the next sheet: *Product-Profit*.

Product-Profit: The profitability of the operation is estimated in this sheet. The herd size (i.e., the number of cows) is entered on this sheet. Changing this value changes values throughout the spreadsheet, including total number of gallons produced by the herd on an annual basis. Gallons produced annually per cow (a measure of productivity) can also be changed by the user. Prices and production are divided in a three-way split between gallon, ½ gallon, and quart production. This split cannot be changed. A gallon of production is divided between these three variables, then is multiplied by their respective prices. Use the price scalar to raise or lower these selling prices uniformly. Total revenue per cow is calculated. This is the final analysis sheet in the tool.

Printing the Results of the Analysis Tool:

After users have provided information in the four analysis sheets, an additional sheet labeled as “Print” should be filled out based on the variables input into the tool. To print the information provided in the ***Print*** sheet, click on the blue “Print” button on the ***Product-Profit*** sheet.



Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development.
University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating.
UT Extension provides equal opportunities in programs and employment.