

# Economic Analysis of Switching Milking Frequency

Victor E. Cabrera

Ohio Dairy Health and Management Certificate Program  
Module #5 - Dairy Cattle Economics, February 4-5, 2010

# Introduction

- ▶ Research supports that higher milking frequencies (i.e., 2X vs. 3X) increases milk production:
  - E.g., 3X vs. 2X could be 7.7 lb/d per cow higher
- ▶ However there are additional operational costs when increasing the milking frequency (e.g., labor, feed)

# Objective

- ▶ Develop a simple framework to estimate the gain/loss of switching milking frequency
- ▶ Document the most important parameters to perform calculations
- ▶ Perform sensitivity analysis
- ▶ Demonstrate a user–friendly decision support system

# Framework

## ▶ Partial Budgeting

- Additional revenues = milk
- Additional costs = labor, feed
- Revenues foregone = none
- Reduced costs = none

# Parameters for 2X to 3X

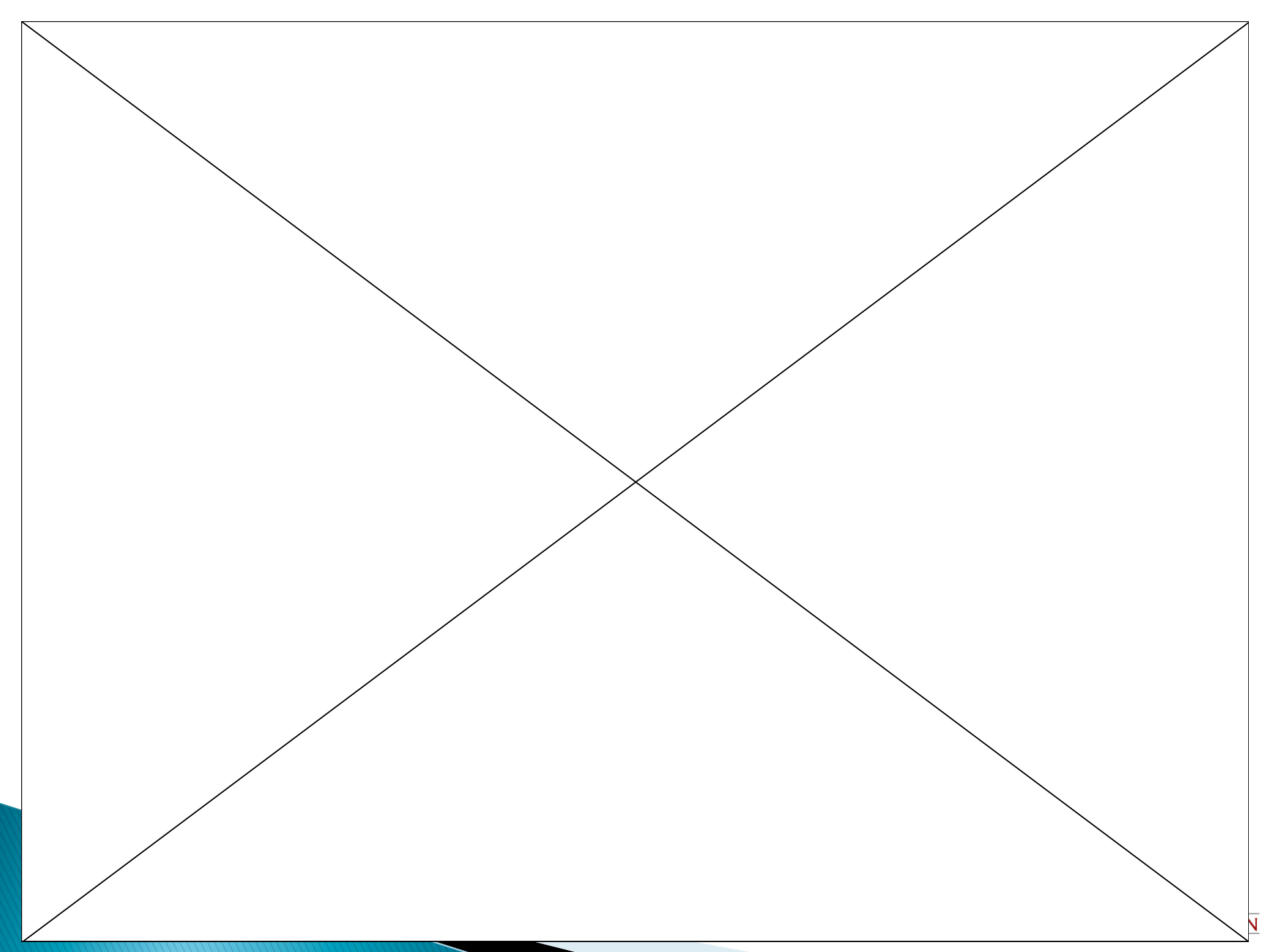
- ▶ Expected milk increase (an absolute amount, not a percentage of current):
  - 4 to 12 lb/cow per d (8 lb/cow per d)
- ▶ Additional labor required
  - 2 to 4 hr/d (3 hr/d)
- ▶ Estimated feed cost
  - \$5 to \$7/cwt milk (\$6/cwt milk)

# Parameters for 2X to 3X

- ▶ Milking cows
  - 100
- ▶ Milk price
  - \$10 to \$20/cwt (\$15/cwt)
- ▶ Labor cost
  - \$10 to \$16/hr (\$14/hr)


# Sensitivity

	Expected Milk Increase (\$/cow/yr)				
	4	6	8	10	12
<b>\$10 Milk</b>					
\$5 Feed	-80.3	-43.8	-7.30	29.2	65.7
\$6 Feed	-94.9	-65.7	-36.5	-7.3	21.2
\$7 Feed	-109.5	-87.6	-65.7	-43.8	-21.2
<b>\$15 Milk</b>					
\$5 Feed	-7.3	65.7	138.7	211.7	284.7
\$6 Feed	-21.9	43.8	109.5	175.2	240.9
\$7 Feed	-36.5	21.9	80.3	138.7	197.1
<b>\$20 Milk</b>					
\$5 Feed	65.7	175.2	284.7	394.2	503.7
\$6 Feed	51.1	153.3	255.5	357.7	459.9
\$7 Feed	36.5	131.4	226.3	321.2	416.1





# DairyMGT.info



**Dairy Management UW-Extension**  
University of Wisconsin-Madison

THE UNIVERSITY OF WISCONSIN MADISON **UW Extension**

Home | **Tools** | Projects | Publications | Presentations | LGM-Dairy | Links

About | Contact | Comments | News | People | Opportunities | Gallery

## Dairy Management

Dairy Management site is designed to support dairy farming decision-making focusing on model-based scientific research. The ultimate goal is to provide user-friendly computerized decision support systems to help dairy farms improve their economic performance. Dr. Victor Cabrera focuses on model-based decision support in dairy cattle and in dairy farm production systems. Dr. Cabrera's primary interest is to improve cost-efficiency and profitability along with environmental stewardship in dairy farms by using simulation techniques, artificial intelligence, and expert systems. Dr. Cabrera's research and Extension programs involve interdisciplinary and participatory approaches towards the creation of user-friendly decision support systems. As an Extension Specialist, Dr. Cabrera works in close relationships with county-based Extension faculty, dairy producers, consultants, and related industry.

**Latest Projects**

- Dairy Cow Fertility
- Strategies of Pasture Supplementation
- Success for Small Dairy Farmers
- LGM-Dairy
- Dairy Economic Decision Support System


**UW**

- University of Wisconsin - Madison
- UW - Cooperative Extension
- UW - Dairy Science
- Understanding Dairy Markets

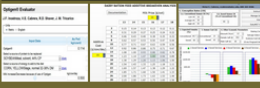
**Dairy News**

- UW-Extension Dairy News

**Contact**

 Victor E. Cabrera, PhD.  
Assistant Professor  
Extension Specialist  
Dairy Management  
279 Animal Sciences  
1675 Observatory Dr.  
Madison, WI 53706  
(608) 265-8506  
vcabrera@wisc.edu  
Professional Page

**TOOLS**



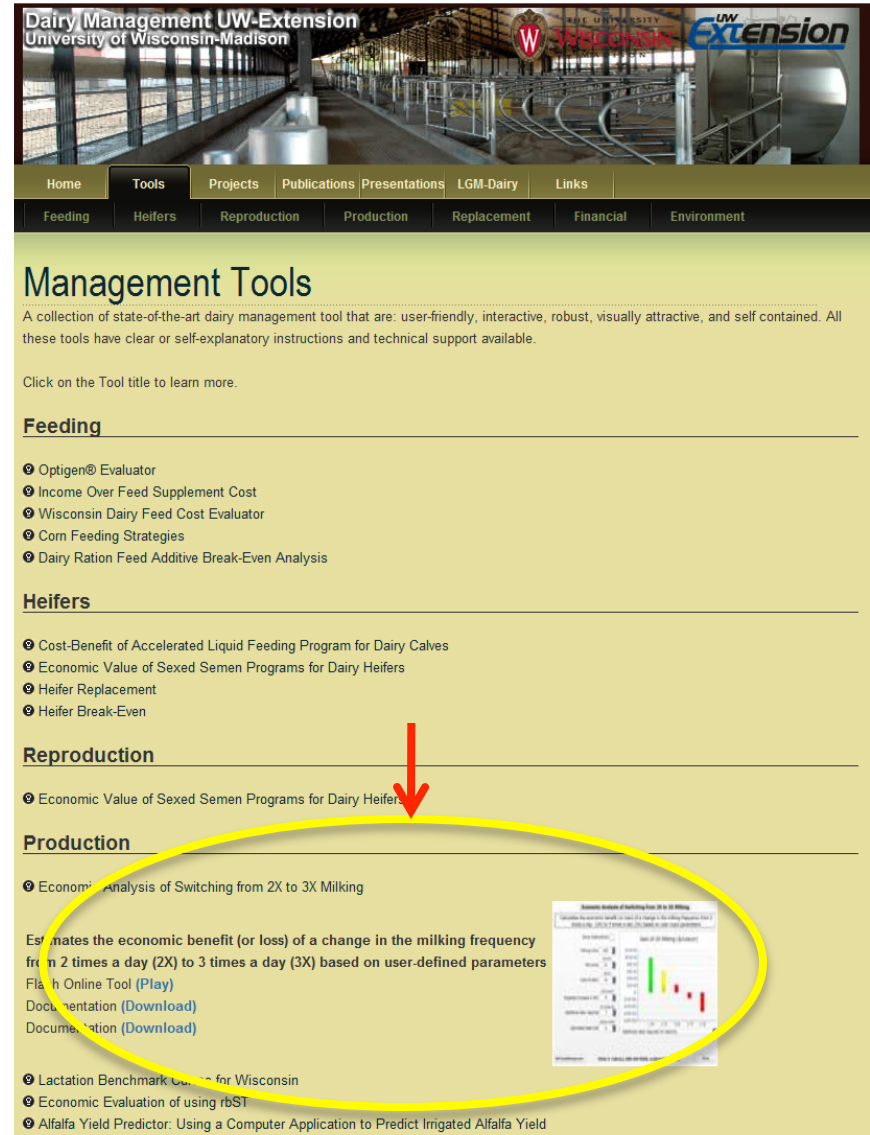
★ Dairy Management Tools

Click to find out more about tools provided by DairyMGT

[READ MORE](#)

Home | Tools | Projects | Presentations | Publications | LGM-Dairy | Links

©2009 Dairy Management-UW Extension



**Dairy Management UW-Extension**  
University of Wisconsin-Madison

Home | **Tools** | Projects | Publications | Presentations | LGM-Dairy | Links

Feeding | Heifers | Reproduction | **Production** | Replacement | Financial | Environment

## Management Tools

A collection of state-of-the-art dairy management tool that are: user-friendly, interactive, robust, visually attractive, and self contained. All these tools have clear or self-explanatory instructions and technical support available.

Click on the Tool title to learn more.

### Feeding

- Optigen® Evaluator
- Income Over Feed Supplement Cost
- Wisconsin Dairy Feed Cost Evaluator
- Corn Feeding Strategies
- Dairy Ration Feed Additive Break-Even Analysis

### Heifers

- Cost-Benefit of Accelerated Liquid Feeding Program for Dairy Calves
- Economic Value of Sexed Semen Programs for Dairy Heifers
- Heifer Replacement
- Heifer Break-Even

### Reproduction

- Economic Value of Sexed Semen Programs for Dairy Heifers

### Production


- Economic Analysis of Switching from 2X to 3X Milking

Estimates the economic benefit (or loss) of a change in the milking frequency from 2 times a day (2X) to 3 times a day (3X) based on user-defined parameters

Flash Online Tool ([Play](#))

Documentation ([Download](#))

Documentation ([Download](#))



- Lactation Benchmark Calculator for Wisconsin
- Economic Evaluation of using rbST
- Alfalfa Yield Predictor: Using a Computer Application to Predict Irrigated Alfalfa Yield