

Zwick Center for Food and Resource Policy

Outreach Report No. 14

**The Cost of Producing Milk in Connecticut:
An Overview**

Boris E. Bravo-Ureta, Jeremy L. Jelliffe, Adam N. Rabinowitz
Joyce Meader, Richard Meinert, Joseph Bonelli, and Sheila Andrew

February 2013



Charles J. Zwick Center for Food and Resource Policy
Department of Agricultural and Resource Economics
College of Agriculture and Natural Resources
1376 Storrs Road, Unit 4021
Storrs, CT 06269-4021
Phone: (860) 486-2836
Fax: (860) 486-1932
Contact: ZwickCenter@uconn.edu

The Cost of Producing Milk in Connecticut: An Overview

Zwick Center Outreach Report No. 14
University of Connecticut
February 2013



Boris E. Bravo-Ureta ^a

Jeremy Jelliffe ^b, **Adam Rabinowitz** ^b

Joyce Meader ^c, **Richard Meinert** ^c

Joseph Bonelli ^d & **Sheila Andrew** ^e

Professor Ag. Economics & Project Director ^a

Research Assistant Ag. Economics ^b

Dairy/Livestock Educator, Cooperative Extension ^c

Associate Extension Educator ^d, Associate Professor & Dairy Specialist ^e



The study was partially funded by the Office of the CT Commissioner of Agriculture, the Zwick Center for Food and Resource Policy, and the Agricultural Food Research Initiative of the National Institute of Food and Agriculture, USDA, Grant # 2010-85211-20470.

1

Determining Dairy COP for Milk in Connecticut



- A Brief Timeline:
 - Dairy Conference hosted at UConn in Fall 2011 (11/28/11)
 - Initial meeting with Connecticut Dairy Representatives and description of project 2/16/12
 - Meeting with Commissioner of Ag. and State dairy representatives to review project progress and establish final methodology 8/31/12
 - Initial presentation of final project results to the Commissioner of Ag. in Hartford, 11/05/12
 - **Publication of study results on the Zwick Center website 12/19/12**
 - Finally, what brings us here today 2/14/13 is to present and discuss the project results with you
- Now, to recap the major points from the previous meetings



The Motivation

- The Spring 2012 letter to State dairy farmers from the Commissioner of Agriculture stated:
 - The Connecticut Dairy **sustainability program relies** on cost of production **(COP) estimates**, historically provided by the USDA
 - The Act states that when the federal pay **price for milk** drops below the **sustainable monthly COP**, farmers become eligible for financial support in the form of grant payments given on a quarterly basis
 - These grant **payments are determined** using the **best available COP estimates**



The Motivation, Cont'd

- The USDA does not provide monthly COP estimates for CT, so numbers from the State of Vermont have been used as a proxy for CT
- These numbers likely do not reflect the true COP in the State
- This project was implemented to produce accurate COP estimates for CT dairy farmers, so they receive the appropriate level of support



The Motivation, Cont'd

- **Perceived gap** between what the USDA-based COP was and CT costs.
- Reliance on **Vermont's numbers** became a **concern** shared by the Commissioners in CT and MA
- These points were raised at the dairy summit at UConn (11/28/11), which led to the **consensus that CT COP numbers need to be generated**
- It was agreed that the most robust approach to generate COP numbers for the State is to use data from CT dairy farmers via **Cornell's Dairy Farm Business Summary and Analysis (DFBS)** program. Advantages include:
 - A reliable source to benchmark individual farm performance; and
 - Farm data are kept strictly confidential



Determining the COP for Milk in Connecticut

- **Step #1: Initial meeting with State dairy farmers, extension educators and University specialists**
 - Information and training and sessions to ensure project success
 - To answer the major questions: "what, why, and how" of it
- **Step #2: Implementing the Cornell DFBS in Connecticut**
 - Data collection: March – August 2012
 - Data was collected on-farm and at regional extension offices.
- **Step #3: Evaluation of the Results**
 - The determination of the cost of production for milk in CT
 - Research and Analysis



COP Calculation

- Cost of production is seemingly a straightforward financial concept.
 - In farming it is often given as the cost of producing a set unit of output;
 - Usually dairy COP is calculated as the cost per CWT of milk.
- Complete farm records for a given period are the best way to determine the COP.
- COP has never been calculated for CT!!!



COP Calculation

- The bottom line: need for a good base to support for State dairy farms.
 - **Financially** - the cost of production is used to accurately determine the dollar amount granted to dairy farmers (CT P.A. 09-229);
 - **Operationally** - information to be collected can be very useful for **benchmarking** and examine sources of inefficiency among dairy producers.
- How was this done?



How It Was Done

- We used Cornell's **Dairy Farm Business Summary (DFBS)**. It is a widely used, highly respected, method of calculation:
 - This system is designed specifically for dairy farming, to systematically evaluate costs
 - Results produced are tractable and consistent
 - Most importantly, it is **SECURE**: the data is handled with great care, and because of its structure the information is protected.



The Dairy Farm Business Summary and Analysis Program

- History and Background:
 - Started in **1955** at Cornell University
 - Currently more than 300 NY farms participate in the study
 - Computerized in the early 1980's, web-based in 2010, with several technological improvements including:
 - Instant farm report generation
 - Customized benchmark reporting
 - Cost basis balance sheets
 - After tax calculation
 - Component milk information
 - Multi-year comparison (after second year of participation)
 - Downloadable forms and instructions
 - Modern software features: pop-up help screens, graphing capabilities, secure internet access.
- The complete DFBS program is located at <http://dfbs.cornell.edu>

The Dairy Farm Business Summary and Analysis Program-Cont'd



- Meetings with farmers and data collection:
 - **Several documents are needed to complete the survey** including:
 - Cash receipts and expenses
 - Accounts payable and receivable
 - Assets and liabilities
 - Land resources and use
 - Livestock and business description
 - Feed and supply inventory
 - Livestock inventory
 - Machinery and equipment inventory
 - Essentially, documentation of *everything* that goes into the cost of producing milk.

Confidentiality Assured



- An **excellent track record** - Cornell's DFBS program has never had a confidentiality breach in more than 50 years of operation in NY, PA, ME, & Canada
- As State employees UConn Extension and ARE faculty are bound by State ethics laws to ensure full confidentiality to protect sensitive information
- The structure of the system is such that:
 - Researchers cannot identify individual farmers by name;
 - Farmers cannot identify other farmers, only their own data and the State aggregate figures.

The Dairy Farm Business Summary and Analysis Program



- Several **steps** were taken to ensure that all farm **records were protected and kept confidential**:
 - Completed forms were kept in secure location at all times
 - Data were entered in DFBS website, which could be accessed only by the specialist with a unique username and password
 - Data were stored on a server located in a secure server room on the Cornell campus
 - Once data collection was completed, a preliminary report was generated and given to the farm representative for review
 - The Cornell administrator was notified that the record was complete, all forms were sent and received at the Cornell office logged into the check-in book, and locked in a cabinet

The Dairy Farm Business Summary and Analysis Program-Cont'd



- If questions arose regarding the farm data, the administrator contacted the data collector directly for answers to questions
- The farmer was not contacted directly by Cornell
- Once the data were finalized, the administrator set the farmer account status to "approved" and the data were locked and could no longer be changed unless it was unlocked by the administrator.
- An "approved" report was sent via e-mail to the interviewer for them to return to the farmer for review and analysis.
- The data check-in form was returned to the interviewer via mail.
- Other reports (comparison, one-page, graphs) could be generated by the interviewer and given to the farmer.

Determining the COP for Milk in Connecticut



- Step #1: Initial meeting with State dairy farmers, extension educators, and University specialists
 - Information and training and sessions to ensure project success
 - To answer the major questions: “what, why, and how” of it
- Step #2: Implementing the Cornell DFBS in Connecticut
 - Data collection: March – August 2012
 - Data was collected on-farm and at regional extension offices
- Step #3: Evaluation of the Results
 - The determination of the cost of production for milk in CT
 - Research and Analysis

Data Collection



- **55 Agreed to participate**
 - 7 Dropped
 - 3 Unable to participate because of time constraints
- 45 Farms in the DFBS system
 - 43 Finalized
 - **39 Included in the Representative Sample**
 - 2 Did not complete data input
- Next methodological step was the determination of the appropriate values for **challenging inputs**.

Determining the COP for Milk in Connecticut



- Step #1: Initial meeting with State dairy farmers, extension educators, and University specialists
 - Information and training and sessions to ensure project success
 - To answer the major questions: “what, why, and how”
- Step #2: Implementing the Cornell DFBS in Connecticut
 - Data collection: March – August 2012
 - Data collected on-farm and at regional extension offices
- Step #3: Evaluation of the Results
 - The determination of the cost of production for milk in CT
 - Research and Analysis

The DFBS Survey Data



- 43 CT Farms ended in the DFBS system
- Sample adjusted to best represent the CT Industry
 - **39 in the “Representative” Sample**

Table 1. Comparison of the CT Dairy Industry and the Sample of Participating Farms, 2011

Herd Size Class (cows)	Number of Farms	Total Cows	Average Herd Size	Total Output	Average Output	Output per Cow
Hundredweight of Milk						
Connecticut	124	19,000	153	3,492,650	28,166	184
Full Sample	43	9,294	216	1,943,668	45,202	192
'Representative' Sample	39	5,858	150	1,134,627	29,093	187
Representative Sample as a % of CT Industry	32%	31%	-----	32%	-----	-----

Source: CT DFBS Survey, 2012 ; NASS 2012 < <http://www.nass.usda.gov>>; NMAMA 2011 < <http://www.fimmon.com> >

The DFBS Survey Data, and Farm Class Sizes

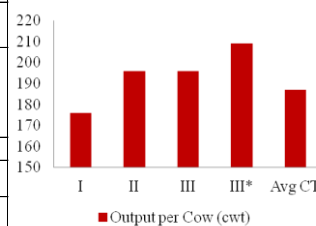
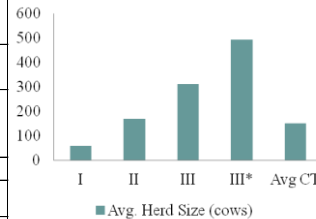


Table 2. Connecticut Dairy COP Study Summary Statistics, 2011

Herd Size Class (cows)	Number of Farms	Total Cows	Share Cows	Average Herd Size
I (25-99)	17	1,000	17%	59
II (100-249)	14	2,369	40%	169
III (250-500)	8	2,489	43%	311
III* (250+)	12*	5,925	-----	494
'Representative' Sample	39	5,858	100%	150

Herd Size Class (cows)	Average Output	Output per Cow	Total Output	Share of Output
<u>Hundredweight of Milk</u>				
I (25-99)	10,496	176	178,439	16%
II (100-249)	33,406	196	467,680	41%
III (250-500)	61,064	196	488,509	43%
III* (250+)	108,129	209	1,297,550	-----
'Representative' Sample	29,093	187	1,134,627	100%

* Herd size class III values include data from the 4 largest farms that was collected with the survey but not included in the analysis.
Source: CT DFBS Survey, 2012



The DFBS Survey Data, Processing



- Remove **outlier** observations from the data—
 - Observations falling outside 3 standard deviations from the mean are eliminated
 - No more than 2 observations are removed for any input category, at least 37 observations used to determine the average for each input.
- Adjust Relevant **Inputs** to reflect **CT values**
 - Wage rate for Unpaid Family Labor
- Adjust input categories based on USDA, into UConn **modified DFBS format**.



UConn Modified DFBS

Allocation of Whole Farm Costs:

- USDA ARMS Survey Method
 - Whole farm expenses **allocated by farmer** in the survey to provide milk and non-milk related costs
- Cornell DFBS Whole Farm Method
 - Whole farm data is collected with **no allocation** of expenses into milk and non-milk during survey.
 - The assumption is that the **non-milk expenses are equal to the non-milk receipts**.
 - **Non-milk receipts are then deducted** from total farm expenses, to calculate the milk related expenses.



UConn Modified DFBS

Assumptions Used for Selected Production Inputs:

- Opportunity cost of unpaid labor and management
 - Unpaid Family Labor:
 - The mean wage rate for agricultural farm workers and laborers from the Bureau of Labor Statistics, May 2011, is used for unpaid family labor.
 - Unpaid Operators Labor and Management:
 - The estimated income from off-farm employment, as reported by farmers, is included as the opportunity cost of operator labor and management, to reflect experience, education, and age.
- Opportunity cost of equity:
 - An interest rate (r) = 5% is used, which is the value that DFBS-Cornell has found to be consistent over many years.



Table 3. Milk production costs per hundredweight sold, for Connecticut, 2011 (UConn Modified DFBS Method)

Item	Connecticut Adjusted Average	Farm Herd Size Class			
		I (25-99)	II (100-249)	III (250-500)	III* (250+)
Operating costs:					
Feed--					
Purchased feed	8.61	9.05	8.07	8.60	8.40
Homegrown harvested feed	1.04	0.83	1.02	1.99	1.87
Total, feed costs	9.65	9.88	9.09	10.59	10.27
Other--					
Veterinary and medicine	1.50	1.61	1.52	1.23	1.18
Bedding and litter	0.26	0.31	0.25	0.18	0.25
Marketing	1.30	1.43	1.25	1.10	1.10
Custom services	0.53	0.24	0.67	0.89	0.53
Fuel, lube, and utilities	2.13	2.53	1.83	1.83	1.82
Repairs	2.17	2.73	1.80	1.62	1.69
Other operating costs	0.68	0.58	0.85	0.57	0.47
Gov't Receipts and Misc. Income	(1.37)	(1.74)	(1.20)	(0.93)	(1.18)
Interest on operating capital	0.32	0.33	0.32	0.29	0.41
Total, operating cost	17.16	17.90	16.39	17.38	16.54
Allocated overhead:					
Hired labor	3.30	2.96	3.51	3.67	3.54
Opportunity cost of unpaid labor and management	6.64	11.18	2.73	3.81	2.71
Capital recovery of machinery and equipment	1.05	1.12	1.30	0.51	0.77
Opportunity cost of equity (5%)	1.96	2.41	1.68	1.54	1.12
Taxes and insurance	0.95	1.15	0.83	0.75	0.65
General farm overhead	0.46	0.37	0.41	0.72	0.58
Total, allocated overhead	14.36	19.20	10.45	11.00	9.37
Total costs listed	31.52	37.10	26.84	28.39	25.91

* Herd size class III values include the 4 largest farms dropped from the study sample.
Source : CT DFBS Survey, 2012

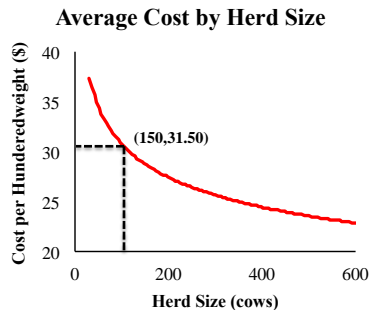
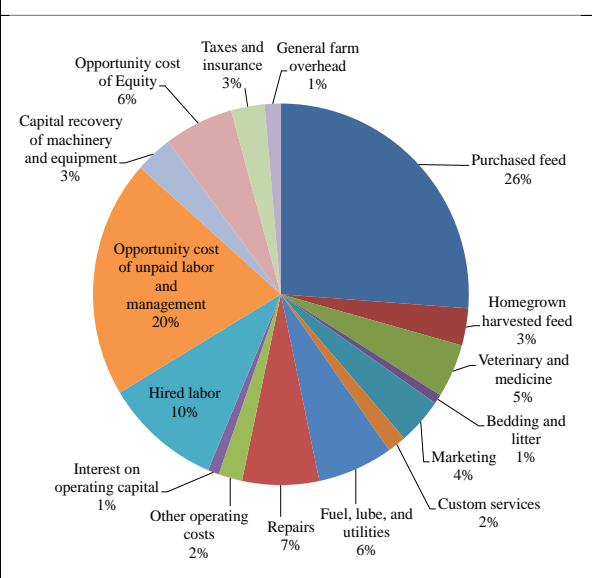


Figure 1. Connecticut Dairy Farm Cost of Production: Share of Input Expense*

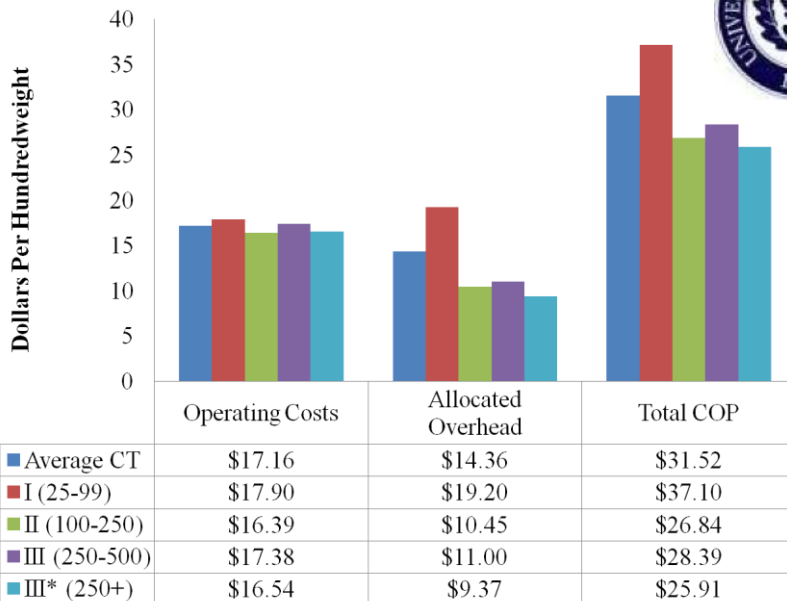


*Excluding Government Receipts and Miscellaneous Income.
Source: Total Cost of Production from Table 3.





Figure 2. Costs by Farm Size Class



Comparison of Methods



- **UConn Modified DFBS**
 - \$31.52 (indicated COP values are in \$/CWT)
- **USDA ARMS**
 - Vermont: \$32.61; Maine: \$37.45; NY:\$27.05
- **Farm Credit East**
 - N.E. \$19.72; NY: \$17.95 (operating expenses)
- **Cornell DFBS**
 - NY: \$19.21 (participation for years/benchmarking)



Table 4. Milk production costs and returns per hundredweight sold, by State, 2011 (USDA ARMS Survey Method, NASS Adjusted)

Item	All States*			
	States*	New York	Maine	Vermont
Operating costs:				
Feed--				
Purchased feed	8.08	7.56	11.07	8.73
Homegrown harvested feed	4.82	5.72	5.98	6.49
Grazed feed	0.09	0.17	0.13	0.21
Total, feed costs	12.99	13.45	17.18	15.43
Other--				
Veterinary and medicine	0.77	1.10	1.06	0.77
Bedding and litter	0.23	0.42	0.88	0.45
Marketing	0.22	0.28	0.30	0.36
Custom services	0.54	0.73	0.71	1.02
Fuel, lube, and electricity	0.83	0.97	1.89	1.36
Repairs	0.56	0.69	1.28	0.89
Other operating costs	0.00	0.01	0.01	0.01
Interest on operating capital	0.01	0.01	0.01	0.01
Total, operating cost	16.15	17.66	23.32	20.30
Allocated overhead:				
Hired labor	1.49	1.47	2.38	1.28
Opportunity cost of unpaid labor	2.11	2.58	4.49	4.30
Capital recovery of machinery and equipment	3.34	4.28	5.88	5.31
Opportunity cost of land (rental rate)	0.02	0.02	0.03	0.06
Taxes and insurance	0.18	0.28	0.43	0.40
General farm overhead	0.59	0.76	0.92	0.96
Total, allocated overhead	7.73	9.39	14.13	12.31
Total costs listed	23.88	27.05	37.45	32.61

Table 3. Connecticut

8.61
1.04
9.65
17.16
14.36
31.52

*All States values include: CA, FL, GA, ID, IL, IN, IA, KS, KY, ME, MI, MN, MO, NY, OH, OR, PA, TN, TX, VT, VA, WA, and WI

Source: Based on USDA's 2010 Agricultural Resource Management Survey of milk producers and updated using current per cow and production input indexes. <<http://www.ers.usda.gov/Data/CostsAndReturns/monthlymilkcosts.htm>>



Table 4. Milk production costs and returns per hundredweight sold, by State, 2011 (USDA ARMS Survey Method, NASS Adjusted)

Item	All States*			
	States*	New York	Maine	Vermont
Total, operating cost	16.15	17.66	23.32	20.30
Total, allocated overhead	7.73	9.39	14.13	12.31
Total costs listed	23.88	27.05	37.45	32.61

Table 3. Connecticut

17.16
14.36
31.52

Table 5. Milk production costs per hundredweight sold, for New York and New England, 2011 (Farm Credit East Method)

Item	New York 381 farms	New England 151 farms
Feed	6.40	7.80
Labor	2.93	3.06
Interest	0.54	0.48
Marketing	0.87	0.88
Crop	1.30	1.22
Other	6.71	7.28
Adjusted Cash Operating Expenses	18.75	20.71
+ Depreciation	1.37	1.23
+Family Living	0.70	0.65
Total Costs	20.82	22.59
- Non-Milk Income	(2.87)	(2.87)
Net Cost of Production	17.95	19.72

Source: "2011 Northeast Dairy Farm Summary," Farm Credit East, Enfield, CT. Print.

Table 6. Milk production costs per hundredweight sold, for New York, 2011 (Cornell DFBS Method)

Item	New York 190 farms
Total Cost of Producing Milk	19.21

Source: Cornell DFBS, 2011, <<http://dyson.cornell.edu>>.

2012 Monthly Estimates



- Estimating monthly COP from annual numbers
 - Current procedure using the **NASS index and ARMS data** (Zwick Center Reports: August 2011 & 2012)
 - Re-categorized costs from UConn Modified DFBS are equivalent to USDA ARMS.
 - Apply NASS indexes to the various input categories.
 - Estimate **monthly milk Cost of Production for CT** adjusted for seasonality based on CT production.

Table 8. UConn Modified DFBS, Connecticut monthly milk COP: January – September 2012

Item	Jan	Feb	March	Apr	May	June	July	Aug	Sept
Dollars Per Hundredweight									
Operating costs:									
Feed--	→								
Purchased feed	8.24	8.03	8.60	8.65	9.02	10.41	11.61	12.63	13.61
Homegrown harvested feed	1.16	1.13	1.20	1.22	1.29	1.21	1.25	1.29	1.33
Total, feed costs	9.41	9.16	9.79	9.87	10.31	11.62	12.86	13.92	14.94
Other--									
Veterinary and medicine	1.52	1.43	1.46	1.46	1.50	1.55	1.57	1.62	1.65
Bedding and litter	0.26	0.25	0.26	0.25	0.26	0.27	0.27	0.28	0.28
Marketing	1.31	1.31	1.31	1.31	1.32	1.33	1.33	1.33	1.33
Custom services	0.56	0.53	0.54	0.54	0.55	0.57	0.58	0.59	0.60
Fuel, lube, and utilities	2.11	2.03	2.18	2.16	2.09	2.00	2.02	2.22	2.35
Repairs	2.23	2.10	2.16	2.16	2.22	2.27	2.30	2.37	2.41
Other operating costs	0.68	0.64	0.66	0.66	0.68	0.70	0.71	0.73	0.74
Gov't Receipts and Miscellaneous Income	(1.39)	(1.30)	(1.34)	(1.33)	(1.37)	(1.42)	(1.43)	(1.47)	(1.50)
Interest on operating capital	0.34	0.32	0.33	0.33	0.34	0.34	0.35	0.36	0.37
Total, operating cost	17.04	16.46	17.36	17.42	17.89	19.24	20.54	21.94	23.16
Allocated overhead:									
Hired labor	3.43	3.23	3.30	3.26	3.34	3.43	3.46	3.57	3.64
Opportunity cost of unpaid labor and management	6.89	6.48	6.64	6.55	6.71	6.88	6.96	7.17	7.31
Capital recovery of machinery and equipment	1.10	1.04	1.06	1.08	1.11	1.11	1.16	1.19	1.21
Opportunity cost of equity	2.03	1.91	1.96	1.95	2.00	2.05	2.07	2.14	2.18
Taxes and insurance	0.99	0.94	0.96	0.96	0.98	1.00	1.01	1.05	1.07
General farm overhead	0.47	0.45	0.47	0.47	0.48	0.49	0.49	0.52	0.53
Total, allocated overhead	14.93	14.04	14.39	14.27	14.61	14.99	15.16	15.63	15.94
Total costs listed	31.97	30.50	31.75	31.68	32.50	34.24	35.70	37.56	39.10



Notable increase in the cost of Purchased Feed and Unpaid Labor

Source : CT DFBS Survey, 2012, updated using current per cow and production input indexes.
 <<http://www.ers.usda.gov/Data/CostsAndReturns/monthlymilkcosts.htm>>

Table 9. Connecticut, Vermont and Maine Milk Cost of Production Estimates, Statistical Uniform Price, and Application of Public Act 09-229: January-September 2012

	January	February	March	April	May	June	July	August	September
<u>Dollars per Hundredweight</u>									
Total Cost of Production									
Connecticut	\$31.97	\$30.50	\$31.75	\$31.68	\$32.50	\$34.24	\$35.70	\$37.56	\$39.10
Vermont	\$33.26	\$32.38	\$33.86	\$33.81	\$34.21	\$34.83	\$36.52	\$37.96	\$39.00
Maine	\$39.34	\$36.18	\$40.91	\$38.69	\$40.30	\$39.72	\$42.86	\$43.82	\$43.43
Minimum Sustainable COP									
Connecticut	\$26.22	\$25.01	\$26.03	\$25.98	\$26.65	\$28.07	\$29.27	\$30.80	\$32.06
Vermont	\$27.27	\$26.55	\$27.77	\$27.72	\$28.05	\$28.56	\$29.95	\$31.12	\$31.98
Maine	\$32.26	\$29.67	\$33.55	\$31.72	\$33.04	\$32.57	\$35.15	\$35.94	\$35.61
Statistical Uniform Price									
Hartford, CT	\$19.27	\$17.99	\$17.54	\$17.10	\$16.69	\$16.48	\$17.16	\$18.30	\$19.35
Statistical Uniform Price Minus Minimum Sustainable Cost of Production									
Connecticut	-\$ 6.95	-\$7.02	-\$8.49	-\$8.88	-\$9.96	-\$11.59	-\$12.11	-\$12.50	-\$12.71
Vermont	-\$ 8.00	-\$8.56	-\$10.23	-\$10.62	-\$11.36	-\$12.08	-\$12.79	-\$12.82	-\$12.63
Maine	-\$12.99	-\$11.68	-\$16.01	-\$14.62	-\$16.35	-\$16.09	-\$17.99	-\$17.64	-\$16.26

Source: Total Cost of Production from Table 8, and USDA NASS.
Statistical Uniform Price from the USDA Federal Milk Order No. 1 <<http://www.fmmone.com>>

CT COP Results



- **Larger Average Farm Size than VT and ME**
 - **Scale Economies in New England Dairy Sector**
 - **VT Large portion of Farms are Organic**
 - **NYS Industry is Much MUCH Larger**

Table 10. Comparison of CT, NY, VT, and ME Dairy Farms, 2011

State	Number of Farms	Total Cows	Average Herd Size	Total Output	Average Output	Output per Cow
<u>Hundredweights of Milk</u>						
Connecticut	124	19,000	153	3,492,650	28,166	184
New York	4,759	610,000	128	110,571,130	23,234	181
Vermont	958	134,000	140	25,050,350	26,149	187
Maine	303	32,000	106	5,852,340	19,315	183

Source: NASS 2012 <<http://www.nass.usda.gov>>; NMAMA 2011 <<http://www.fmmone.com>>

Final Notes



- CT COP survey: Will/Should it be done again in future years?
 - USDA ARMS data is collected every 5 years
 - How often should the data for CT be collected, and in how much detail? Can we simplify DFBS?
 - Possible benefits and concerns over the Cornell method (information requirements, tracking individual farm performance year-to-year).
 - A modified Cornell methodology developed for the sole purpose of determining the COP for CT dairies annually or bi-annually seems as a reasonable path.

Final Notes – Cont'd



- Final Points –
 - Why did farmers choose **NOT** to participate?
 - Evidence from the field
 - Use of the data and results to enhance future extension programming?
 - The final report may be found on the UConn Zwick Center Website at:
<http://www.zwickcenter.uconn.edu/documents/ResearchReportno1.pdf>

Thank You!



**Appendix: Definition of
UConn Modified DFBS Inputs**





UConn Modified DFBS

Operating Costs:

- Total feed costs:
 - Purchased feed include:
 - **Purchased** dairy grain and concentrate,
 - **Purchased** dairy roughage, and
 - All feed **purchased** for nondairy livestock to allow more thorough analysis of dairy herd feeding costs.
 - Homegrown harvested feed (crop expenses) include the costs of fertilizer, lime, seeds, spray and other crop supplies.



UConn Modified DFBS

Operating Costs, Cont'd:

- Livestock expenses include the cost of supplies and services directly associated with the care and maintenance of the dairy herd, such as:
 - Veterinary and medicine, Bedding and litter, Milk marketing costs, Custom services (i.e., breeding, boarding, etc.), and milking supplies.
 - The purchase of replacement cattle is considered a herd maintenance expense while expansion livestock is not.



UConn Modified DFBS

Operating Costs, Cont'd:

- Machinery costs represent all the operating costs of using machinery on the farm, including: Fuel, lube, and utilities* and Repairs. Ownership costs are excluded here. Gas tax receipts are deducted from fuel expense.
- *Utilities are the farm share of utilities expenses, and are often included in the general farm overhead or other operating expense category.



UConn Modified DFBS Inputs

Operating Costs, Cont'd:

- Other operating costs are miscellaneous costs such as extraordinary one-time expenses
- Government receipts are deducted from expenses as reimbursement from government programs, and can be anything from CRP payments, feed grain program payments, etc. Funds used for capital projects should not be included as gov't receipts.

UConn Modified DFBS Inputs



Operating Costs, Cont'd:

- Miscellaneous income are deducted from expenses and can include funds for Director fees or cost reimbursements for presentations, etc.
- Interest on operating capital is interest paid on all farm indebtedness.

UConn Modified DFBS Inputs



Allocated Overhead Costs:

- Hired labor includes gross wages plus the farm share of social security, workers' compensation insurance, employee health insurance and other employee benefits paid by the farm employer.
- Opportunity cost of unpaid labor and management
 - The opportunity costs associated with the use of unpaid family labor and operators labor and management.

UConn Modified DFBS Inputs



Allocated Overhead Costs, Cont'd:

- Capital recovery of machinery and equipment depreciation of machinery and buildings are non-operating costs included in total expenses.
 - Depreciation charges are based on those reported for income tax purposes.
- Opportunity cost of equity reflects compensation to the owner of the assets for the funds tied up in the assets over the period.

UConn Modified DFBS Inputs



Allocated Overhead Costs, Cont'd:

- Taxes and insurance is the farm share of taxes and insurance expenses.
- General farm overhead are any additional overhead costs such as licenses and fees.