

Dairy Sustainability

Where we are, and where we're headed

A decade after the completion of the U.S. dairy industry's initial life cycle assessment, continuous improvement in sustainability will become a critical performance metric on most dairy farms. This was the message delivered by Dr. Roger Cady at the 60th Annual Meeting of National All-Jersey Inc. in Canton, Ohio.

According to Dr. Cady, the push for ever-improving sustainability comes from the combination of commerce and investment banking. Investment firms and university endowments rely on third-party evaluations of companies' sustainability initiatives when deciding where to invest. Large multinational companies incorporate sustainability measures into their decision-making processes when making purchases or establishing business-to-business relationships. Currently over 30% of U.S. milk production is either exported or processed domestically by foreign-based companies. Increasingly these buyers and processors are requiring their milk to be sourced from dairies with structured sustainability improvement programs in place.

Because of this, Cady asserted that dairy producers need to be a partner with buyers to develop sustainability programs that are practical, realistic and achievable. Communicating the differences in the energy

demands of the mechanical world versus the biological world is one of the biggest challenges faced by agriculture. A machine at rest requires very little, if any, energy. In contrast, an animal at rest must still utilize energy to maintain itself. Food production is governed by three rigid rules

of physics and biology. Rule One is that energy can neither be created nor destroyed. It only changes form. Therefore, a low input system cannot be a high output system. Rule Two is that there are limited energy sources for life, and they all include carbon. There is no carbon-free food. Rule Three is that energy demand priorities in life are 'hardwired'. An animal must

have enough energy to maintain itself (survive) before it can devote energy to production. These three biological rules mean that there are limited opportunities for improvement, but they do not eliminate all opportunities.

Cady elaborated that the three opportunities to affect an animal's environmental impact are to increase metabolic feed efficiency, dilute animal maintenance and reduce animal maintenance. Metabolic feed efficiency can be improved through better feed digestibility, higher feed quality, and for ruminants, changing the rumen microflora.

Non-U.S. Based Global Food Companies with U.S. Based Dairy Processing Plants

- Agropur – Canada
- Arla – Denmark
- Barry Callebaut - Switzerland
- Chobani – Greek influence
- ❖ Danone (*Dannon*) – France
- Fromageries Bel (*BabyBel & Laughing Cow*) - France
- Glanbia – Ireland
- Lala – Mexico
- Lactalis (*Galbani*) - France
- ❖ Nestlé – Switzerland
- Saputo – Canada
- ❖ Unilever – United Kingdom

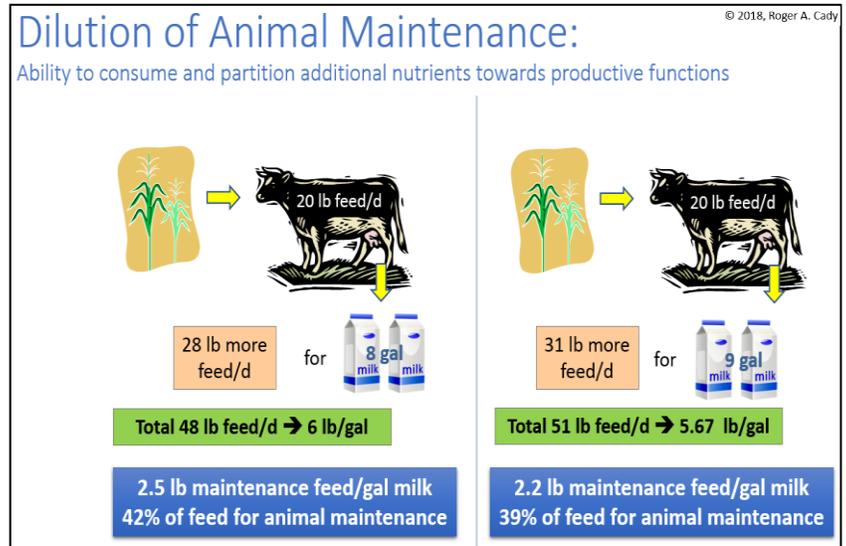
❖ Note: Key drivers of global dairy sustainability programs

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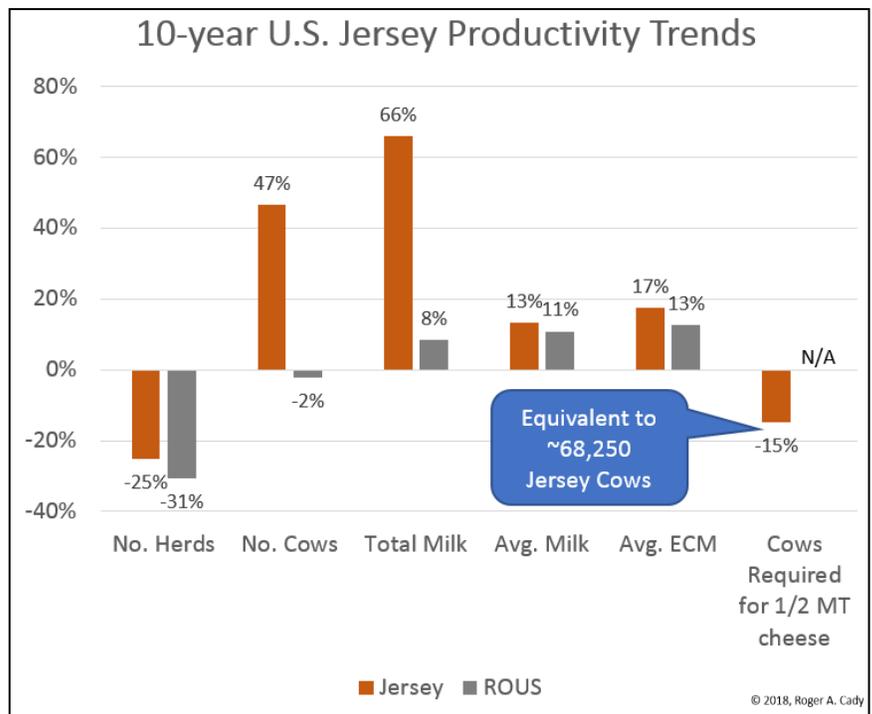
Dilution of maintenance is defined as, “A reduction in the percentage of dietary intake required to meet maintenance energy requirements for healthy survival.” The equivalent in financial terms would be to spread fixed costs over more units of production. In terms of dairy production, a cow may require 20 pounds of feed per day for maintenance. To produce eight gallons of milk will require an additional 28 pounds of feed, for a total of 48 pounds of feed, which equates to six pounds of feed per gallon of milk. A more efficient cow may require 31 pounds of additional feed (51 total pounds) to produce nine gallons of milk, which equates to 5.67 pounds of feed per gallon. The percentage of feed required for animal maintenance is 3% less for the higher producing cow.

Steps to reduce maintenance requirements include limiting physical activity, reducing animal size, installing cooling and ventilation systems, limiting the number of dry days, and reducing social stress by implementing appropriate stocking rates.

Why are these three opportunities to affect an animal’s environmental impact important? In the analysis of Dr. Cady, the biggest threat to an individual farm’s sustainability will be maintaining a market for its milk. In the very near future, this will require documentation of sustainability progress. Fortunately for Jersey producers, the breed has made impressive productivity gains during the past ten years compared to the rest of the U.S. dairy cattle population. Using data from the Council on Dairy Cattle Breeding and Dairy Herd Improvement Association, Dr. Cady estimated the changes in both groups of cows from 2007 to 2017. The results are shown in the graphic to the right. The single most important productivity



gain for Jersey producers is that the breed increased its average Energy Corrected Milk per cow by 17% compared to 13% for the rest of the dairy cattle population. The Jersey breed has a competitive advantage in its body size and milk components. Keeping genetic focus on maintaining body size, increasing production and maintaining or increasing milk components will help Jersey producers to maintain the breed’s competitive advantage and individual producers to continuously improve their dairy’s sustainability.



The NAJ Equity Newsletter is Published for Supporters of and People Interested In Equitable Milk Pricing

NAJ Milk & Component Outlook - June 2018 Jersey Price Comparisons

<u>JUN '18 STATISTICAL BLEND PRICE</u>		<u>JUN'18 MONTHLY MILK VOLUME</u> (Million #)		<u>JUN '18 JERSEY REGULATED BLEND PRICE</u>	
Northeast (Boston)	\$16.70	Northeast (Boston)	2,327	Northeast (Boston)	\$20.70
Appalachian (Charlotte)	\$17.81	Appalachian (Charlotte)	447	Appalachian (Charlotte)	\$20.93
Southeast (Atlanta)	\$18.12	Southeast (Atlanta)	420	Southeast (Atlanta)	\$21.25
Florida (Tampa)	\$19.96	Florida (Tampa)	190	Florida (Tampa)	\$23.21
Mideast (Cleveland)	\$15.84	Mideast (Cleveland)	1,728	Mideast (Cleveland)	\$19.52
Upper Midwest (Chicago)	\$15.40	Upper Midwest (Chicago)	3,050	Upper Midwest (Chicago)	\$19.36
Central (Kansas City)	\$15.53	Central (Kansas City)	1,476	Central (Kansas City)	\$19.48
Southwest (Dallas)	\$16.43	Southwest (Dallas)	1,143	Southwest (Dallas)	\$20.22
Arizona (Phoenix)	\$15.70	Arizona (Phoenix)	418	Arizona (Phoenix)	\$18.95
<u>Pacific Northwest (Seattle)</u>	<u>\$15.47</u>	<u>Pacific Northwest (Seattle)</u>	<u>753</u>	<u>Pacific Northwest (Seattle)</u>	<u>\$18.64</u>
ALL FMMO MARKET AVERAGE	\$16.70	ALL FMMO MARKET TOTAL	11,951	ALL FMMO MARKET AVERAGE	\$20.23
California 4b (Cheese Milk)	\$14.43			California 4b (Cheese Milk)	\$18.25
California Overbase	N/A			California Overbase	N/A

Prices reflect Federal Order minimum blend prices for city shown.

Total Grade A milk volume sold under FMMO during month.

Prices reflect FMMO minimum prices at Jersey component values.

<u>JUN '18 JERSEY BLEND WITH ESTIMATED PROTEIN OR CHEESE YIELD PREMIUMS</u>		<u>JUN'18 DOLLAR DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE</u>		<u>JUN '18 PERCENT DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE</u>	
Northeast (Boston)	\$20.88	Northeast (Boston)	\$4.18	Northeast (Boston)	25.0%
Appalachian (Charlotte) (includes protein prem.)	\$21.22	Appalachian (Charlotte)	\$3.41	Appalachian (Charlotte)	19.2%
Southeast (Atlanta)	\$21.25	Southeast (Atlanta)	\$3.13	Southeast (Atlanta)	17.3%
Florida (Tampa)	\$23.21	Florida (Tampa)	\$3.25	Florida (Tampa)	16.3%
Mideast (Cleveland) (includes protein premium)	\$19.99	Mideast (Cleveland)	\$4.15	Mideast (Cleveland)	26.2%
Upper Midwest (Chicago) (includes cy premium)	\$19.54	Upper Midwest (Chicago)	\$4.14	Upper Midwest (Chicago)	26.9%
Central (Kansas City)	\$19.48	Central (Kansas City)	\$3.95	Central (Kansas City)	25.5%
Southwest (Dallas)	\$20.22	Southwest (Dallas)	\$3.79	Southwest (Dallas)	23.1%
Arizona (Phoenix) (includes protein)	\$19.22	Arizona (Phoenix)	\$3.52	Arizona (Phoenix)	22.4%
<u>Pacific Northwest (Seattle)</u>	<u>\$18.64</u>	<u>Pacific Northwest (Seattle)</u>	<u>\$3.17</u>	<u>Pacific Northwest (Seattle)</u>	<u>20.5%</u>
ALL FMMO MARKET AVERAGE	\$20.37	ALL FMMO MARKET AVERAGE	\$3.67	ALL FMMO MARKET AVERAGE	22.2%
California 4b (Includes CY Premium)	\$19.35	California 4b (Includes CY Premium)	\$4.91	California 4b (Includes CY Premium)	34.1%
California Overbase	N/A	California Overbase	N/A	California Overbase	N/A

Includes a protein premium of \$0.05 for every 0.01% increase in protein over the market average.

Prices reflect difference between Jersey price with premiums, and the statistical blend price.

Percent difference in Jersey price with premiums, over the statistical blend price.

<u>ESTIMATED JERSEY MILK COMPOSITION</u>	<u>Jun-18</u>	<u>REGULATED MILK PRICES</u>	<u>Jun-18</u>	<u>AVERAGE JERSEY PRICE ADJUSTMENT PER CWT:</u>	<u>Jun-18</u>
Butterfat	4.82	FMMO Milkfat	\$ 2.6692	FMMO Milkfat Adjustment	\$2.97
TRUE Protein	3.64	FMMO True Protein	\$ 1.7478	FMMO True Protein Adjustment	\$1.02
Other Solids	5.73	FMMO Other Solids	\$ 0.1128	FMMO Other Solids Adjustment	(\$0.01)
Solids Not Fat (SNF)	9.37	CA 4b (Cheese Milk) Milkfat	\$ 2.5708	CA 4b (Cheese Milk) Milkfat	\$3.40
Cheese Yield (90% Fat Recovery, 38% Moisture)	12.58	CA 4b (Cheese Milk) SNF	\$ 0.6246	CA 4b (Cheese Milk) SNF	\$0.43
		CA Overbase Milkfat	N/A	CA Overbase Milkfat	N/A
		CA Overbase SNF	N/A	CA Overbase SNF	N/A
CME Block Cheese Price	\$ 1.56				

NAJ Milk & Component Outlook - 2018 Prices through June

2018 AVERAGE STATISTICAL BLEND PRICE FOR EACH FEDERAL ORDER		2018 MILK VOLUME (Million #)		2018 AVERAGE JERSEY REGULATED BLEND PRICE	
Northeast (Boston)	\$15.67	Northeast (Boston)	13,828	Northeast (Boston)	\$19.60
Appalachian (Charlotte)	\$16.90	Appalachian (Charlotte)	2,932	Appalachian (Charlotte)	\$20.26
Southeast (Atlanta)	\$17.20	Southeast (Atlanta)	2,764	Southeast (Atlanta)	\$20.63
Florida (Tampa)	\$19.03	Florida (Tampa)	1,285	Florida (Tampa)	\$22.39
Mideast (Cleveland)	\$14.83	Mideast (Cleveland)	10,000	Mideast (Cleveland)	\$18.33
Upper Midwest (Chicago)	\$14.55	Upper Midwest (Chicago)	16,654	Upper Midwest (Chicago)	\$18.31
Central (Kansas City)	\$14.54	Central (Kansas City)	8,469	Central (Kansas City)	\$18.30
Southwest (Dallas)	\$15.28	Southwest (Dallas)	6,769	Southwest (Dallas)	\$18.93
Arizona (Phoenix)	\$14.66	Arizona (Phoenix)	2,671	Arizona (Phoenix)	\$17.99
<u>Pacific Northwest (Seattle)</u>	<u>\$14.51</u>	<u>Pacific Northwest (Seattle)</u>	<u>4,201</u>	<u>Pacific Northwest (Seattle)</u>	<u>\$17.71</u>
ALL FMMO MARKET AVERAGE	\$15.72	ALL FMMO MARKET TOTAL	69,574	ALL FMMO MARKET AVERAGE	\$19.25
California 4b (Cheese Milk)	\$13.89			California 4b (Cheese Milk)	\$18.00
California Overbase	\$13.50			California Overbase	\$17.55

Prices reflect Federal Order minimum blend prices for city shown.

Total Grade A milk volume sold under FMMO.

Prices reflect FMMO minimum prices at Jersey component values.

2018 AVERAGE JERSEY BLEND WITH ESTIMATED PROTEIN OR CHEESE YIELD PREMIUMS		2018 AVERAGE DOLLAR DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE		2018 AVERAGE PERCENT DIFFERENCE: JERSEY MILK WITH PREMIUMS VS. STATISTICAL BLEND PRICE	
Northeast (Boston)	\$19.83	Northeast (Boston)	\$4.17	Northeast (Boston)	26.7%
Appalachian (Charlotte) (includes protein prem.)	\$20.60	Appalachian (Charlotte)	\$3.34	Appalachian (Charlotte)	19.4%
Southeast (Atlanta)	\$20.63	Southeast (Atlanta)	\$3.14	Southeast (Atlanta)	18.0%
Florida (Tampa)	\$22.39	Florida (Tampa)	\$3.34	Florida (Tampa)	17.6%
Mideast (Cleveland) (includes protein premium)	\$18.92	Mideast (Cleveland)	\$4.10	Mideast (Cleveland)	27.7%
Upper Midwest (Chicago) (includes cy premium)	\$18.55	Upper Midwest (Chicago)	\$4.00	Upper Midwest (Chicago)	27.5%
Central (Kansas City)	\$18.30	Central (Kansas City)	\$3.78	Central (Kansas City)	26.0%
Southwest (Dallas)	\$18.93	Southwest (Dallas)	\$3.66	Southwest (Dallas)	24.0%
Arizona (Phoenix) (includes protein)	\$18.32	Arizona (Phoenix)	\$3.66	Arizona (Phoenix)	25.0%
<u>Pacific Northwest (Seattle)</u>	<u>\$17.71</u>	<u>Pacific Northwest (Seattle)</u>	<u>\$3.24</u>	<u>Pacific Northwest (Seattle)</u>	<u>22.4%</u>
ALL FMMO MARKET AVERAGE	\$19.42	ALL FMMO MARKET AVERAGE	\$3.64	ALL FMMO MARKET AVERAGE	23.4%
California 4b (Includes CY Premium)	\$19.28	California 4b (Includes CY Premium)	\$5.38	California 4b (Includes CY Premium)	38.7%
California Overbase	\$18.82	California Overbase	\$5.32	California Overbase	39.4%

Includes a protein premium of \$0.05 for every 0.01% increase in protein over the market average.

Prices reflect difference between Jersey price with premiums, and the statistical blend price.

Percent difference in Jersey price with premiums, over the statistical blend price.

ESTIMATED JERSEY MILK COMPOSITION	2018	REGULATED MILK PRICES	2018	AVERAGE JERSEY PRICE ADJUSTMENT PER CWT:	2018
Butterfat	4.98	FMMO Milkfat	\$2.4990	FMMO Milkfat Adjustment	\$2.87
TRUE Protein	3.76	FMMO True Protein	\$1.7473	FMMO True Protein Adjustment	\$1.05
Other Solids	5.73	FMMO Other Solids	\$0.0731	FMMO Other Solids Adjustment	(\$0.00)
Solids Not Fat (SNF)	9.49	CA 4b (Cheese Milk) Milkfat	\$2.4444	CA 4b (Cheese Milk) Milkfat	\$3.62
Cheese Yield (90% Fat Recovery, 38% Moisture)	13.01	CA 4b (Cheese Milk) SNF	\$0.6136	CA 4b (Cheese Milk) SNF	\$0.50
		CA Overbase Milkfat	\$2.4214	CA Overbase Milkfat	\$3.59
		CA Overbase SNF	\$0.5778	CA Overbase SNF	\$0.46