



Organic Valley/ CROPP Cooperative's Milk Quality Program






ORGANIC VALLEY MILK
FROM YOUR REGION



Organic Valley makes procurement of quality raw milk a high priority. We achieve this goal through a combination of -

- Procurement from member farms
- Education
- Monitoring
- Incentives


Producer raw milk quality -


- Reflects milking practices and herd health
- Can indicate an out of control process or inadequate training
- Increases or reduces profit margin
- Has a major effect on finished product quality, shelf-life and brand acceptance

Key Raw Milk Quality Drivers

- Herd Health
- Milking Practices
- Environment



Herd Health



Focus on prevention

Develop a good nutritional program

Treat problems immediately - don't wait!

Use good dry cow management

- Cows are highly susceptible to infection due to weakened immune systems
- Keep cows in clean, dry environment

Milking Practices

Time of greatest risk for infection

Wash hands or use clean disposable gloves


Use consistently good milking technique

- Forestrip and evaluate
- Predip
- Wipe dry - no wet milking
- Attach milkers within 60 seconds - important
- Post dip - prevent spread of contagious organisms

Herd Milking Order

- Fresh heifers
- Low SCC Cows
- High SCC Cows
- any contagious cows*

* milk using separate equipment




Environment

Biosecurity


- Keep a closed herd to prevent contagions
- Screen new animals prior to integration

Housing

- Clean, dry
- Separate area for sick animals - prevent spread



Equipment

- Regular evaluation and maintenance
- Check system airflow and pulsation

Organic Valley monitors the quality of producer raw milk by testing for the following milk quality test indicators -


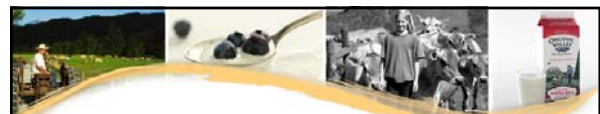
- Bacteria
- Somatic cell count
- Cryoscope
- Sediment

Bacteria Testing

Standard Plate Count(SPC)/Plate Loop Count(PLC)

- Measures the number of bacteria present in (cold) milk in the bulk tank.
- $\leq 3,000$ = excellent, $>25,000$ = needs attention, 100,000 = regulatory maximum
- Poor results are due to dirty or unsanitized equipment, dirty udders, slow cooling, poor milking practices, or (strep) mastitis in herd

Bacteria Testing


Preincubation Count (P.I.C.)


Identifies and measures the presence of psychotrophic bacteria that thrive at refrigeration to room temperatures.

There is no regulatory standard for P.I.C.

$<3,000$ = excellent, 25,000 = needs attention, $>50,000$ = maximum allowed

Poor results are due to dirty cows (udders), worn rubber parts, milkstone buildup, contaminated air system, failure to sanitize







Bacteria Testing

Lab Pasteurization Count (LPC)



- Identifies and measures the presence of thermophilic bacteria that thrive at refrigeration to room temperatures
- There is no regulatory standard
- ≤ 75 = excellent, > 75 = needs attention, > 150 = maximum allowed (no premium)
- Poor results are due to milk contamination from soil, hay or dusty feeds, dirty (milkstone) or unsanitized equipment, dirty udders, very slow cooling

Bacteria Testing



Coliform Count

- Identifies and measures the presence of coliform bacteria indicating milk contamination and good conditions for pathogen growth
- There is no regulatory standard for raw milk for pasteurization
- ≤ 10 = excellent, < 25 = needs attention, > 100 = maximum allowed
- Poor results are due to milk contamination from soil or manure, dirty udders or hands (gloves), worn inflations or pipeline gaskets, contaminated water

Somatic Cell Count (SCC)

- Measure of the number of white blood cells present in milk from mastitis
- Good indicator of udder health and/or presence of infection
- $< 100,000$ = excellent, $> 350,000$ = needs attention, $750,000$ = regulatory maximum
- Poor results due to herd health, failure to screen (forestrip, CMT, DHI) herd, incorrect milking order causing spread of contagious organisms
- Mastitis and high SCC reduces production by as much as 30% volume and costs thousands in lost income annually

Cryoscope

Measure freezing point of milk

$> .540$ = acceptable, $.535$ = needs attention, $\leq .530$ = unacceptable


Caused by added water from poorly sloped pipeline, rinse or "flush" water in milk

Sediment

Measures the amount of foreign material (dirt, hay, etc.) present in milk


1 = acceptable, 2 = needs attention, 3 = unacceptable

Caused by dirty cows (udders), poor or no filtration, reused filters, poor bulk tank seals





Incentive and Corrective Programs

- Quality Premiums and Quality Deductions
- Quality Awards
- Work Improvement Plan (WIP)

Quality Standard for Premiums and Deductions

<u>ATTRIBUTE</u>	<u>HINGE POINT</u>
BACTERIA (SPC/PLC)	$\leq 25,000$
SOMATIC CELL (SCC)	$\leq 350,000$
PREINCUBATION (PIC)	$\leq 50,000$
THERMODURICS (LPC)	≤ 150
COLIFORM COUNT	≤ 100
CRYOSCOPE	$\geq .530$
SEDIMENT	< 3



SCC Premium Chart		SCC Cull Deduction Chart		SPC Quality Payment Chart	
SCC X 1000	Premium	SCC X 1000	Deduction	SPC X 1000	
350	\$0.000	350	\$0.000	0-10	\$0.25 Premium
340	\$0.048	360	(\$0.036)	11-20	\$0.10 Premium
330	\$0.096	370	(\$0.072)	21-30	\$0.00
320	\$0.144	380	(\$0.108)	31-100	(\$0.10) Deduct
310	\$0.192	390	(\$0.144)	100+	(\$0.25) Deduct
300	\$0.240	400	(\$0.180)		
290	\$0.288	410	(\$0.216)		
280	\$0.336	420	(\$0.252)		
270	\$0.384	430	(\$0.288)		
260	\$0.432	440	(\$0.324)		
250	\$0.480	450	(\$0.360)		
240	\$0.528	460	(\$0.396)		
230	\$0.576	470	(\$0.432)		
220	\$0.624	480	(\$0.468)		
210	\$0.672	490	(\$0.504)		
200	\$0.720	500	(\$0.540)		
190	\$0.768	510	(\$0.576)		
180	\$0.816	520	(\$0.612)		
170	\$0.864	530	(\$0.648)		
160	\$0.912	540	(\$0.684)		
150	\$0.960	550	(\$0.720)		
140	\$1.008	560	(\$0.756)		
130	\$1.056	570	(\$0.792)		
120	\$1.104	580	(\$0.828)		
110	\$1.152	590	(\$0.864)		
100	\$1.200	600	(\$0.900)		
90	\$1.248	610	(\$0.936)		
80	\$1.296	620	(\$0.972)		
70	\$1.344	630	(\$1.008)		
60	\$1.392	640	(\$1.044)		
50	\$1.440	650	(\$1.080)		
40	\$1.488	660	(\$1.116)		
30	\$1.536	670	(\$1.152)		
20	\$1.584	680	(\$1.188)		
10	\$1.632	690	(\$1.224)		
0	\$1.680	700	(\$1.260)		

FI Quality Payment Chart	
FI X 1000	
0-15	\$ 50 Premium
16-30	\$ 25 Premium
31-60	\$0.00
61-100	(\$0.25) Deduct
101-200	(\$0.50) Deduct
201-750	(\$1.00) Deduct
>750	(\$2.00) Deduct

LPC Quality Payment Chart	
LPC	
0-75	\$0.40 Premium
76-150	\$0.20 Premium
>150	None

There are currently no deductions.

Milk Quality Award Program

GOLD AWARD

- SCC YEARLY AVERAGE OF 150,000 OR LESS
- SPC YEARLY AVERAGE OF 25,000 OR LESS
- PIC YEARLY AVERAGE OF 30,000 OR LESS

SILVER AWARD

- SCC YEARLY AVERAGE 151,000 TO 200,000
- SPC YEARLY AVERAGE OF 25,000 OR LESS
- PIC YEARLY AVERAGE OF 30,000 OR LESS

Work Improvement Plan

LEVEL ONE - 2 consecutive monthly averages above the "hinge points" receive a warning letter. Producer must take action.

LEVEL TWO - 3 consecutive monthly averages... Producer must submit a written plan detailing improvement steps and results.

LEVEL THREE - 4 consecutive monthly averages... Producer is one month from suspension.

Field representative works with producer.

Dairy Executive Committee (DEC) makes final decision and considers producer response and extenuating circumstances.

Education and Guidance

- Herd Health Workshops
- Milk Quality & Herd Health Bulletins
- Staff Assistance - Raw Milk Specialist
- Field Representatives

Animal Health Committee

- Composed of professionals, staff and producers
- Producer resource
- Johnes & BLV Testing and Education
- Herd Health Bulletins
- Educational Workshops

Dry Cow Management

Dr. Paul Dettloff- DVM

Managing the dry cow starts during the last trimester of lactation. This last trimester is the period when the bovine should be gaining back her body condition after coming off her lactation curve. The last thing anyone wants in a dry off is an animal that is skin and bone. On the flip-side you do not want an animal that is hog fat going into her dry period. The last trimester is when you want to control the grain so you can get her body condition where you want it.

One underlying concept the dairyman must know and be very aware of during the dry period is the two omnipresent dips in immune function that all female herbivores experience. Immunologists uncovered this in the 1980's and it has been a well-kept secret in the dairy industry. The two dips are as follows. At dry off the immune function is lowered by the endocrine system. A tight udder triggers the endocrine system to hormonally switch from a lactating animal. The second bigger and longer drop starts about two weeks before calving and bottoms out at calving. It will take two to three weeks to return to normal. Experts say that in some cows 75% of immune function is shut down.

If possible any stress should be avoided during these two times of lowered immune function. Vaccinations should be avoided during dry off and around freshening. Unfortunately these two time frames have been adopted as times to vaccinate for everything and anything in the dairy world. **Avoid these windows at all costs.**



Producers have the potential to significantly increase profit from good milk quality

To improve the producer should -

- 1) Identify the cause of quality deficiencies
- 2) Correct the deficiencies
- 3) Review processes to determine what allowed the deficiency to occur
- 4) Prioritize and implement improvements to prevent recurrence



QUESTIONS???



Understanding Organics:
Livestock Management and Health Conference
Alfred State College February 14, 2007