

Progressive Dairy Operators British Columbia Study Tour Report



August 21 – 23, 2012

Report by
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ONTARIO PROGRESSIVE DAIRY OPERATORS

www.pdo-ontario.ca

Study Tour to British Columbia

August 21 to 23, 2012

The Fraser Valley area of British Columbia is one of the most intense dairy areas in Canada. The Progressive Dairy Operators (PDO) organized a three day study tour to the Abbotsford area of the Fraser Valley in August of 2012. 90 dairy producers and agri-business people (Figure 1) from eight different provinces attended the tour. The group visited 15 different dairy farms, and a berry farm.



Figure 1 PDO Study Group

The Abbotsford area is unique because it is an intensely urban area, and intense agricultural area as well. It is a prime dairy and poultry area as well as a prime blueberry and raspberry area. Berry crops are high return cash crops which have raised land values to \$50,000 to \$60,000 per acre. This makes it very difficult for dairy producers to compete for forage land. The Fraser Valley also receives between 60 to 72" of rain per year. This is almost twice what we receive in Ontario. This changes the types of forages that can be grown, but also increases the number of crops per year when combined with the mild weather.

It was also very interesting to see the large livestock and poultry operations co-existing with the expansion of urban areas. There is no Minimum Distance Separation (MDS) formula or similar formula used in BC as there are in Ontario. This has resulted in many situations where there are large livestock and poultry operations and large estate lots within close proximity of each other. There are complaints about spreading odours and barn odours, but the general public seem to be more understanding and accepting of agriculture than is often the case in Ontario. Producers have also come up with creative ways of working with their urban neighbours.

Highlights of the PDO Study Tour to BC

There were a number of interesting things that the group learned and saw:

Dairy – General

Largest dairy farm in Canada

We had the opportunity to visit the largest dairy farm in Canada, milking 3,300 cows. They also had a show barn where they keep their special cows at another location

Very expensive land

With the price of land being so high, many producers choose to remodel facilities instead of building new at another location on their farm

Bakerview Eco Dairy

This is a 50 cow demonstration herd located on the edge of Abbotsford. It serves as a dairy education centre for the general public, and it is also a research barn for the Artex Stabling Company. It serves to teach the public about modern dairy housing, how the cows are cared for, feeding, robotic milking and energy generation from a small anaerobic digester.

Cow Comfort

Stall designs

We saw several different stall designs that producers were trying with the goal of improving cow comfort. We saw one barn using the “Greenfreestall” in a group. Another dairy was using a flexible stall divider (Figure 2) similar to the “Greenfreestall” and having good initial success. The other dairy was a test barn for Artex stabling and are trying a number of different designs.



Figure 2 Flexible stall divider



Figure 3 Automatic bedding delivery system

Automatic bedding delivery

The group saw two unique automatic bedding delivery methods. The one consisted of a flex auger conveyor with long down spouts (Figure 3). This allowed for some bedding storage in the down spouts as well as storage capacity in the front of the stalls. The other system used a belt conveyor to dump bedding in the front of the stalls. In both cases the bedding was stored at the front of the stalls and pulled back as needed.



Figure 4 Compost bedding from drum composter

Bedding composters

Several operations were using composted bedding from “drum composters” (Figure 4). When managed properly they were quite pleased with the results. The bedding needs to be dry enough so that it doesn’t continue to heat in the stalls, but moist enough that it doesn’t blow around.

Calf Housing

Calf hutches under a roof because of rainfall

We visited several dairies with calves housed in hutches, but the hutches were then covered with a roof structure to protect the calves and operators from the high rainfall (Figure 5). There are similar systems in Ontario, but here we have added curtain side walls for protection from winter winds.



Figure 5 Calf hutches under roof



Figure 6 Positive pressure air tube ventilation

Positive pressure air tube (PPAT) ventilation systems

The group also visited several dairies with the calves housed inside. Two of these dairies were using PPAT ventilation systems (Figure 6). This is becoming more common, and producing very good results. In a PPAT system fresh air is introduced into the room using a fan to pressurize a duct with holes to distribute the air evenly. The duct is usually a flexible plastic tube, or bag or it can be a rigid plastic tube with holes drilled in it.



Figure 7 Feed stalls

Feed Management

Feed stalls

The group saw feed stalls used at the demonstration barn to keep cows from being disturbed by scraper or each other (Figure 7)

Covered horizontal silos

Many of the horizontal silos were covered because of the high rainfall amounts (Figure 8).

“Lego” concrete blocks for horizontal silos

We saw several dairies with horizontal silos constructed out of large concrete “Lego” blocks. Left over concrete is often poured into large (2’ x 2’ x 4’) blocks in Ontario to be used for a variety of applications, but the blocks the group saw in BC had a much better interlocking system (Figure 9).



Figure 8 Covered horizontal silo



Figure 9 "Lego" concrete blocks for silo

Milking Management

Two farms doing "no prep"

Two of the dairies visited were not using any "prep" at all before attaching the milkers. This is contrary to most accepted practices, yet these producers were receiving good results.



Figure 10 Automatic foot wash

Foot wash

The group saw a unique "foot wash" system at the one dairy. A pipe system was designed to spray water on the cows hooves to clean them before the cows entered the parlour (Figure 10).

Standard Operating Systems (SOP)

Several producers had SOP displayed in different areas of the barn. As dairies become larger and use more labour from off the farm it becomes necessary to provide good skills training. As much as possible these producers had SOP written out for different

management procedures. Workers would be trained in these SOP's and they were readily available for reference, either in a binder, or displayed.

Robotic milking

The group visited a number of dairies that were using robotic milking. There are many competing jobs in the Fraser Valley, and robotic milking becomes more attractive when good workers are difficult to hire or wages increase.



Figure 11 Roofed rectangular manure storage

Manure Management

Rectangular manure storages

We saw a number of rectangular concrete manure storages. Although more expensive to build than round concrete manure storages, the rectangular ones can be roofed.

Roofed storages

We saw roofed rectangular manure storages (Figure 11) on many dairy farms, because of the high rainfall

amounts. Producers did not want to lose storage capacity and they did not want to spread the extra liquid from the rainfall.

Earthen Manure Storages

The group saw a number of earthen manure storages. Some of them seemed to be constructed in a fairly sandy soil. In Ontario there is a minimum clay content to provide a seal to control leachate

Limited nutrient management requirements

Currently BC does not have nutrient management regulations like we do in Ontario. This is something that is being investigated for the future. Consequently they are using much higher spreading rates for manure, and they are still using high trajectory guns to spread manure.

Hydraulic scrapers

Hydraulic scrapers were quite popular in BC. They have the advantage of using little power and can be operated in different length alleys or odd numbered alleys. They are not as popular in Ontario as they do not operate well in freezing conditions or when dry manure builds up on the shuttle.



Figure 12 6" dia. tube under scraper

Tube scraper

We saw two types of tube scrapers being used for manure removal from the barns. Tube scrapers are becoming more popular. They consist of a channel (18" x 18" or 18" dia.) under the alley floor. A "V" shaped alley scraper is used to draw the manure to the centre and then the manure drops through a slot into the tube and is pushed through the tube to one end.

With the tube scraper system, there is not a big wave of manure being pushed through the barn. Cows that are in the alley when the scraper passes do not get as dirty.

The second version that the group saw was a scraper with a 6" dia. Pipe underneath (Figure 12). This was used for draining liquid only.

AD system

The Eco Dairy had a unique anaerobic digester that was a plug and play unit that could be scaled up for larger operations.

Separation

Many of the dairies were using some form of manure separation system. They varied from settling lanes (Figure 13) for sand separation to screw press separation (Figure 14) for the drum composters. Drum separators and static screen separators were used as well. Separation was common to remove the solids from the manure, so that the liquid could be spray irrigated

Compost bedding systems

Several operations were using composted bedding from "drum composters". Similar to Ontario, solids were separated from the manure with a screw press and then they were composted in a drum composter over a period of two to three days.



Figure 13 Sand settling lane



Figure 14 Screw press for separating manure solids

Ventilation

Restricted at many locations

Many operations were working with less than ideal conditions for natural ventilation. Dairy facilities were built quite close together, and sometimes there was very little wind exposure for any of the barns



Figure 15 Over-shot ridge ventilation

Over-shot roof ventilation

Most natural ventilation systems were quite similar to Ontario, with the exception of the over-shot ridge roof vent (Figure 15). This type of ridge vent was quite popular in BC. It appears occasionally in Ontario, but is not as popular. It is a relatively simple addition in construction, and allows for an adjustable curtain to be used to regulate the ventilation exhaust.

Construction

More wood used than Ontario

The ready access to a number of wood products makes them more popular than Ontario. At one dairy we saw 10" x 10" Douglas fir posts being used. This size is not readily available in Ontario.

Plywood sheathing on roofs

Plywood was used for roof sheathing as opposed to purlins. It was also used to provide some minimum R factor.

No roof insulation

The Fraser Valley has a milder climate, so little roof insulation was used.

Other

Boot wash

The producer at one dairy we visited had built a unique boot wash that the cows wouldn't bother, and it kept the manure in the pen area and not the alleys.

Summary of Farms Visited on Study Tour

Tuesday August 21

Gifford Acres - Allan Mulder and son in law Curtis DeLange

5391 Glenmore Road, Matsqui

Al's Phone: 604-854-3316 cell – 604-302-4382 ad.mulder@yahoo.com

Curtis Phone: 604-819-3123 rooke118@hotmail.com



Cow Information

- 92 cows milking

Milking System

- 2 – Lely A4 Robotic Milkers

Milking Barn

- 6 row centre drive through - 2011
- Mattresses with sawdust bedding

Calf Management

- Calves in hutches
- Interesting milk caddy

Feed System

- Horizontal silos
- TMR mixer
- Juno feed pusher

Manure System

- Hydraulic alley scrapers
- Rectangular manure storage

Vandeburgt Farms – Brian & Ken Vandeburgt

9466 Catherwood Road, Dewdney

Phone: 604-820 -3432 (Brian) 604-217-7760 (Brian's cell) vandeburgt.farms@gmail.com



Cow Information

- 350 cows milking

Milking System

- DeLaval double 12 herringbone parlour

Milking Barn

- New barn and parlour in 2004
- Freestalls have Animats with sawdust bedding

Calf Management

- 80 calf hutches under roof
- Golf cart with milk caddy

Feed System

- Covered horizontal silos and some uncovered as well
- Loewen TMR mixer

Manure System

- Hydraulic alley scrapers to flush flume transfer
- Manure is separated with a screw press. Solids are stacked and liquids go to a lined earthen manure storage
- Slurrystore back up for freezing weather
- Liquids are applied to field with a dragline system

Marlena Farms - Fred and Evelyn Vermeer, Jeremy,
38170 Hawkins Pickle Road, Dewdney
Phone: 604-826-3612 evermeer@xplornet.com



Cow Information

- 210 cows milking
 - 100 cows on special Omega program
 - 170 fed regular ration

Milking System

- 6 – Lely A3 robotic milkers

Milking Barn

- 6 rows with perimeter drive throughs
- Waterbeds

Calf Management

- Calf hutches under roof

Feed System

- Horizontal silos
- TMR mixer
- Juno feed pusher

Manure System

- Norbco tube scraper

Other

- Building new addition

UBC Research Farm - Manager Nelson Dinn,

607-796-8410 nelson.dinn@ubc.ca

6947 Lougheed Highway, Agassiz

Anne Marie De Passillé, Telephone: 1-604-796-1733 depassilleam@agr.gc.ca ,

Jeffrey P. Rushen, Telephone: 1-604-796-1723, RushenJ@agr.gc.ca ; jeffrushen@gmail.com

Cow Information

- 230 cows milking



Milking System

- Double 12 parallel parlour

Milking Barn

- Divided into free stall groups of 12 to 24 cows for research
- Sand bedding

Calf Management

- New calf research barn
- Individual and group housing

Feed System

- Use of Insentec feed monitoring in some pens

Manure System

- Old sand separation system

The Farm House Cheese Factory and Store George and Debra Boyes

5634 McCallum Road Agassiz BC

Phone: (604) 796-8741 info@farmhousecheeses.com



- Cheese plant and store
- Destination spot
- 5 full time and 2 part time employees plus owners
- 32 milk cows
- 100 goats
- 6 beef cows
- Sell from store and Farmer's Market

Fraserdijk Farms - Adrian and Carina Treur,

724 Tuyttens Road, Agassiz

Phone: 604- 791-0024

actreur@caylix.com



Cow Information

- 80 cows total

Milking System

- Single Lely A4 robotic milker

Milking Barn

- Compost bedding pack barn built in 2011

Calf Management

- In existing barn

Feed System

- Bunker silos

Manure System

- Compost bedding pack barn with slated floor next to feed manger

Wednesday August 22

Dickland Farms - George & Aron Dick,

41984 Sinclair Road, Chilliwack

Phone: 604-823-6437 George Cell – 604-864-7346 jmdick@telus.net



(rigid tubes)

Feed System

- Horizontal silos
- TMR mixer
- Juno feed pusher

Manure System

- Alley scrapers
- Covered rectangular manure storage
- Doda screw press with Exact Systems drum composter

Cow Information

- 280 cows total

Milking System

- 5 - Lely A4 robotic milkers

Milking Barn

- 6 row free stall
- Some groups using shavings and some composted bedding

Calf Management

- Individual pens with PPAT ventilation system

Kloot Farms - Alfred Kloot,

46847 Prairie Central Road Chilliwack

Phone: 604-792-5849 klootfarms@shaw.ca



Cow Information

- Milking 300 cows

Milking System

- 50 stall DeLaval rotary
- 8 stall hospital parlor

Milking Barn

- 6 rows of stalls in 3 tail-to-tail 2 row sections
- Animattress
- One pen with Greenfreestalls for close up dry cows

Calf Management

- Hutches under roof

Feed System

- Horizontal silos
- Loewen TMR mixer

Manure System

- Hydraulic alley scrapers to end of barn dropping into under barn storage

Lunch in Chilliwack Mandarin Garden,
45295 Luckakuck Way, Chilliwack,
Phone: 604-858-9836

Gracemar - Wally and Margaret Ten Brinke, John and Laura Kampman,
47640 Yale Road East, Chilliwack, V2P 7P1

Phone: 604-792-8208 (Wally) or 604-702-4456 (John)

cowsinpajamas@gmail.com



Cow Information

- 700 milking at this location
- 250 milking in Armstrong 3 ½ hours away

Milking System

- Double 16 Germania herringbone parlour

Milking Barn

- 4 row and 6 row sand barns with sand bedding

Calf Management

- Calf barn with individual pens and rigid PPAT ventilation system

Feed System

- Horizontal silos
- Lucknow TMR mixer

Manure System

- Flush manure system to sand settling lane
- Static screen solids separator after the sand settling lane
- Liquid goes to 2 clay lined lagoons
- High trajectory gun used to spread liquids

Walrose Farms - Neil Stam,

48181 Rose Road Chilliwack BC V2P 6H5

Phone: 604-792-4182, 604-316-4182 (cell) castam@caylix.com

Cow Information

- 70 cow milking herd



Milking System

- 2 DeLaval VMS robotic milkers
- Access via tunnel

Milking Barn

- 4 row free stall barn with perimeter feeding
- Automatic bedding delivery system with flex auger delivery system
- Ventec circulation fans with misting system

Calf Management

- Calves in hutches

Feed System

- Horizontal silo under roof

Manure System

- JOZ alley scraper with 6” drainage pipe underneath the floor

Corner’s Pride Farms - Bernie VanDerMuelen ,

Address: 10484 McGrath Road Chilliwack BC V0X 1X2

604-794-7735 Kathy Amyotte is office manager. cpfoffice@uniserve.com



Cow Information

- 1600 milking cows

Milking System

- Double 25 Westward parlou

Milking Barn

- 5 barns holding milking herd
- Sand bedding

Feed System

- Horizontal silos constructed of concrete “Lego” blocks

Manure System

- Flush manure system to sand settling lane
- Solids are then separated with a drum separator
- Liquids stored in earthen storage

Group Dinner and Marketing Discussion with Tom Hoogendoorn BC Board member,

7062 Whelpton Road Agassiz BC V0M 1A2

Phone: 604-796-2773. cell is 604-316-2420

thoogendoorn@milk-bc.com

- Description of BC marketing system and associated challenges
- Comparison with Ontario marketing system

Thursday August 23

Chilliwack Cattle Company - Ken and Jeff Kooyman,
47749 Prairie Central Road Chilliwack BC V2P 6H3
Phone: 604-795-5267 (Ken), 604-316-2622 (Jeff) office@kooymangroup.ca

Cow Information



- 3,300 cows milking

Milking System

- 72 stall rotary parlour

Milking Barn

- Main barn is 475 ft long and 280 feet wide
- Inside layout is a 6 row barn on each side with its own drive through, and a center drive through with a 2 row head to head section on one side and bedding pack on the other
- Stalls bedded with compost

Feed System

- Horizontal silos

Manure System

- Slatted floor barn
- EYS screw press with Dairy Tech Bedding Master drum composter
- Liquids transferred to earthen storage

Other

- Show cow barn at other location

Cedarbrink Farms - Alfred and Cora Van Den Brink,
50761 Castleman Road Chilliwack BC
Mailing Address: 50761 Castleman Road Rosedale BC V0X 1X2
Phone: 604-794-7416 or 604-793-8681 (Alfred's cell) cedarbrink@telus.net



Cow Information

- 380 cows milking

Milking System

- 32 stall Westfalia rotary parlour

Milking Barn

- 360 stalls in new 6 row barn with centre drive through
- Fabric covered roof
- Flexible stall dividers
- Compost used for bedding

Calf Management

- Calves in hutches

Feed System

- Horizontal silos

Manure System

- Alley scrapers to EYS screw separator to Bedding Master drum composter

Other

- Interesting foot wash



Birchwood Dairy

1154 Fadden Road Abbotsford, BC,

Phone: (604) 857-1315

birchwooddairy@shawbiz.ca

- Ice cream stop
- Retail store for ice cream and other dairy products plus fresh fruits and vegetables

Bakerview EcoDairy- Bill Vanderkooi

1356 Sumas Way Abbotsford BC V2S 8H2

Phone: 604 557 1486

Bill@nutrivagroup.com (Bill) 604-557-5481

Ingrid@nutrivagroup.com (Ingrid Epp)

604.870.1000 m 604.644.6806 toll free 1.800.668.1911 johnd@artexbarnsolutions.com John

De Jonge



Cow Information

- 46 cows milking

Milking System

- Single DeLaval VMS robotic milker

Milking Barn

- Two row head-to-head barn with mattresses and sawdust
- Automatic bedding delivery
- Rubber floors

Feed System

- Feed stalls

Manure System

- Alley scrapers to anaerobic digester

Other

- Demonstration and research barn open to public

Krause Berry Farm

6179 248th Street Langley BC V4W 1C3

Phone: (604) 856-5757

info@krauseberryfarms.com



- Blueberries and raspberries
- 200 acres
- Destination stop with “pick your own”, store, pie patio and soon to have a small winery