

## Optimising Canadian Dairy Farm Biosecurity

Leveraging Lessons Learned from the Canadian Johne's Disease Initiatives (CJDI: 2006 – 2013)

### Past Progress

Since the 2006 launch of the Canadian Voluntary Johne's Disease Prevention and Control Program and CJDI in 2009 by DFC and CCA, very significant improvement in Canadian Johne's Disease (JD) awareness and regional/provincial program control (see Table 1) has resulted. The positive collaborative team approach by milk producers, herd veterinarians, academia, and government has enabled the development of an excellent disease risk mitigation and control model. Several research projects have been conducted to solve 'bottle-necks' in the program. It is important to capture lessons learned and build momentum in the transition to farm dairy biosecurity program implementation, an important component of Dairy Farmers of Canada's *proAction Initiative*.

**Table 1: Regional – Provincial JD Initiatives (Programs)**

| Region-Province | Program     | Cash expended  | % Public funding | % Industry funding |
|-----------------|-------------|----------------|------------------|--------------------|
| Atlantic        | 2011 - 2014 | \$ 1 M         | 75               | 25                 |
| Quebec          | 2007 – 2014 | \$ 1.6 M       | 80               | 20                 |
| Ontario         | 2010 – 2013 | \$ 2.44 M      | 12               | 88                 |
| Manitoba*       | 2010 – 2011 | \$ 100 K       | 100              | 0                  |
| Saskatchewan    | 2012 – 2013 | \$ 125 K       | 87               | 13                 |
| Alberta         | 2010 – 2013 | \$ 1.04 M      | 64               | 36                 |
| BC              | 2009 – 2012 | \$ 250 K       | 100              | 0                  |
| <b>CANADA</b>   | 2007-2014   | <b>\$6.6 M</b> | <b>52**</b>      | <b>48**</b>        |

(\* estimated, \*\* weighted)

JD control programs have reached over 4,700 (>35%) Canadian dairy farms and >60% of the dairy veterinarians (see Table 2). Priority on-farm JD risk areas were identified (calving, baby calf, and cattle additions) and resultant positive herd management changes were implemented to reduce JD risks.

**Table 2: Impact of Regional – Provincial JD Programs**

| Program       | Participating Farms # (%) | Trained dairy veterinarians # (%) | JD awareness change                     | Herd risk change over time (RAMP score out of 300)      |
|---------------|---------------------------|-----------------------------------|---|---|
| Atlantic      | 459 (69)                  | 49 (60)                           | Med to High                             | + Herds improved 19 points<br>- Herds improved 6 points |
| Quebec        | 1362 (22)                 | 161 (47*)                         | Low to Med                              | NA  |
| Ontario       | 2339 (58)                 | 246 (>95)                         | Positive motivation in focus farm study | Herds improved 8 points                                 |
| Manitoba**    | ~200 (57)                 | ~20                               | NA                                      | NA  |
| Saskatchewan  | 20 (12)                   | ~10                               | NA                                      | NA  |
| Alberta       | 350 (61)                  | 78 (95)                           | Med to Hi                               | Herds improved 16 points                                |
| BC            | 30 (6)                    | 11 (50)                           | Low to Med                              | NA  |
| <b>CANADA</b> | <b>4,759 (&gt;35)</b>     | <b>575 (&gt;60)</b>               | <b>Positive impact</b>                  | <b>Reduced risks in herds</b>                           |

(# number, \* 95% if include indirect training, \*\* estimated, NA not available, ~ approximate)

## Lessons Learned

1. Program evaluations determined the extreme importance of a national standardised, simplified, prioritised 'Risk Assessment and Management Plan' (RAMP) process to enable the producer and trained herd veterinarian to effectively change management to control JD. JD program enrolment value was also demonstrated (e.g. ON DHI Dairy Comp 305 records indicated superior economic contributions from MAP-negative animals) and will be critical for on-going farmer engagement in programs. The involvement and training of veterinarians to deliver RAMP were critically important.
2. Private practitioners were instrumental in recruiting participants/adding credibility. RAMP facilitated discussions between the producer and herd veterinarian about areas of the farm (eg calf pens and calving area) frequently overlooked. Deficiencies were often easily corrected, representing a strategic control of contagious diseases transmitted fecal-orally, including calf diarrhea. The JD control programs provided very effective examples of implementation of targeted biosecurity on dairies across Canada.
3. Provincial programs used differing on-farm JD sampling/testing techniques. Discussions among researchers, veterinarians, and producers, led to a better understanding of limitations and resulted in further collaborative research evaluating tests/test strategies. Probably the biggest lesson learned by most dairy producers is that exposure risk control is more important than testing and culling test-positive cows.
4. The industry must continue to try to eliminate the movement of MAP-infected cows from one herd (or region) to another and the spread of JD. With enforcement of movement restriction now limited to Québec, it is important to continue educating producers who purchase replacements to check source herd health status (i.e. buyer beware).
5. Canadian JD programs voluntarily attracted up to 70% producer participation. How do we reach the balance, perhaps including problem herds? Enrolment was boosted because these programs were producer initiated and industry led. However we need to continuously find new ways to keep the program prominent in the minds of producers and to show program value to not only maintain enrolment but also to bring the sceptics and late adopters on board. Important new extension outreach techniques and farm focus research have been enabled by the JD initiatives.
6. There is a need for a national infectious disease herd status program. It is important that a herd status for a certain disease in one province means the same as in another province. The leaders of the provincial JD Initiatives have started discussions to make this happen for JD, but it is important that the same will happen for the other infectious diseases that will be included in a national biosecurity effort. A status program must be national in scope and needs to be developed by farmers for farmers. Leadership from national organizations such as DFC and the national breed associations is needed to move this forward.
7. Canada's significant advances related to the control of JD over the past 7 years have primarily resulted from the coordination of integral research – education – program development activities by enthusiastic JD control champions from industry, academia, and the provinces. The CJDI Technical Committee<sup>1</sup> has enabled this forum and national coordination of JD Program components (research, farm, and laboratory) and standardised approaches for JD program planning/delivery at annual MAP Research - Program Meetings since 2008.

## Building on Johnes - Transitioning to Canadian Biosecurity Initiatives

Applying successful methods and leveraging the JD Initiative lessons learned will optimize the launch of Canadian dairy farm biosecurity. The CJDI Technical Committee enabled the positive integration of current science into practical field application and the resultant delivery of effective, standardized provincial/regional JD control programs. With strong leadership from industry, all veterinary schools, provincial programs, and CFIA, significant Canadian JD progress was achieved in a modest timeframe. The Technical Committee strongly supports Dairy Farmers of Canada's *proAction* and the Biosecurity initiative.

Following DFC consideration of this CJDI evaluation report, the Technical Committee<sup>1</sup> invites DFC representatives involved with CJDI and biosecurity (Rejean Bouchard, Ron Versteeg, David Murray, Therese Beaulieu, et cetera) to a tele-conference call (Dec 2013 – Jan 2014) to consider:

- evaluation of JD initiatives/lessons learned and recommendations from the MAP Program meeting, Oct 2013
- JD program features, methods, and components applicable to biosecurity implementation
- potential fit with Biosecurity for Canadian Dairy Farms: National Standard, the *proAction* Initiative, National Technology and Knowledge Transfer Program for Dairy Producers, national dairy cohort, et cetera
- and potential relevant roles for the Technical Committee going forward.

Thanks for this consideration and on behalf of the CJDI Technical Committee,

Ron Barker, Coordinator- CJDI

Ed Empringham, Manager- CJDI

<sup>1</sup> CJDI Technical Committee dairy representatives included Herman Barkema, U of Calgary (co-chair); Shawn McKenna, U of PEI (co-chair); Gilles Fecteau, U de Montréal; David Kelton, U of Guelph; Steve Hendrick, U of Saskatchewan; Rejean Bouchard, DFC; Maria Napke, CFIA; Geneviève Côté, Programme au Québec; Ann Godkin, Ontario Program; Steve Mason, Alberta Program; and Greg Keefe, Atlantic Program.

Annexes:

1. National Voluntary Johnes's Disease Prevention and Control Program (2006):  
<http://www.animalhealth.ca/Document-Item.aspx?id=489> and  
<http://www.animalhealth.ca/Francais/Document-Item.aspx?id=489>
2. CJDI Dairy JD Control Brochure: <http://www.animalhealth.ca/Document-Item.aspx?id=467> and  
<http://www.animalhealth.ca/Francais/Document-Item.aspx?id=467>
3. CJDI Beef JD Control Brochure: <http://www.animalhealth.ca/Document-Item.aspx?id=468> and  
<http://www.animalhealth.ca/Francais/Document-Item.aspx?id=468>
4. Risk Assessment and Management Plan 'RAMP' form (Ontario example):  
<http://www.johnes.ca/pdf%20files/Programs-CattleHealthDeclaration.pdf> and  
<http://www.johnes.ca/pdf%20files/French%20RAMP.pdf>