National Dairy Study 2015
A critical tool in our arsenal for optimal dairy cattle health and management

David Kelton, University of Guelph

Dairy Research Symposium:
Innovate³: PROmoting PROgress to the PROfit of Canadian Dairy

February 5, 2016

Chateau Laurier Hotel, Ottawa, Ontario

Dairy Research for a Healthy World.

Question 1

* Biosecurity is one of the 6 pillars of proAction
* Animal movement among dairy farms is one of the greatest threats to dairy biosecurity
* What proportion of dairy farms in Canada brought at least one dairy animal (cow, heifer, calf or bull) onto the farm in 2014?
  1. <10 %
  2. 10 – 25 %
  3. 25 – 50 %
  4. >50 %

Background

- National Animal Health Monitoring System – USDA
- Benchmark the health and management of the US dairy industry
- 6th dairy cattle study in 2014
- To date – no national benchmarking study in Canada
- Some significant provincial, regional and targeted studies to build upon (PLDC, CBMQRN, CJDI…..)
- Narrow in scope and/or variable in methods (herds, samples, tests….)

Research Objectives

1. Collect baseline data about health, productivity & management
2. Estimate prevalence of diseases of economic and/or zoonotic importance
3. Investigate relationships and regional differences in herd demographics, management and disease
4. Document - uptake of best practises - biosecurity, animal welfare, etc.
5. Produce comparable data collected at the same time to allow comparisons between Canada and U.S.

Methods

Three Stages:

Stage I :Planning stage

- **Needs Assessment** (2014)
- Solicited stakeholder feedback - prioritize main areas
- Consultation - narrow the focus and avoid duplication
- Partner with other Dairy Cluster II projects, if possible

Stage II :Data collection in (2015)

- National Questionnaire (**Phase 1**)
- Regional Farm visits (**Phase 2**)

Stage III :Building the NDS database and making it accessible

- Data analysis/publication of results (2016-17)
- Interactive data portal

Needs Assessment - Management

Occupation	1st priority	2nd priority	3rd priority	4th priority	5th priority
Producers	Animal Welfare	Reproductive Health	Costs of Disease	Cow deaths/ Longevity	Udder Health
Government	Animal Welfare	Antibiotic Use	Reproductive Health	Biosecurity	Food Safety
Other	Animal Welfare	Lameness	Antibiotic Use	Biosecurity	Costs of Disease

Needs Assessment - Disease

Occupation	1st priority	2nd priority	3rd priority	4th priority	5th priority
Producers	Lameness	*S. aureus* Mastitis	Calf Diarrhea	BLV/EBL	Respiratory Disease
Government	Lameness	*E. coli*	Johne's	Calf Diarrhea	BVD
Other	Lameness	Calf Diarrhea	*S. aureus* Mastitis	Respiratory Disease	BVD

Phase 1 - Questionnaire

Questionnaire Content (113 questions - 49 pages)

- Consent to access Milk Board and DHI data
- Herd demographics and farm characteristics
- Biosecurity – attitudes – infectious disease control
- Clinical disease prevalence estimates including lameness
- Calf health and management
- Animal care / welfare
- Udder health and milking hygiene
- Reproductive programs
- Internet and social media use

English and French
Online, Paper or Phone

Phase 1 - Questionnaire

Dairy Farming in Canada 2014

Number of Farms with Milk Shipments: 11,962
Number of Dairy Cows: 959,300
Number of Dairy Heifers: 444,200

Provincial Buy-In

Relationships

Dairy in BC
Farms: 455
Cows: 72,600
Heifers: 34,500

Dairy in AB
Farms: 566
Cows: 80,700
Heifers: 38,700

Dairy in SK
Farms: 166
Cows: 27,400
Heifers: 9,100

Dairy in MB
Farms: 308
Cows: 43,200
Heifers: 19,200

Dairy in ON
Farms: 3,926
Cows: 318,800
Heifers: 163,100

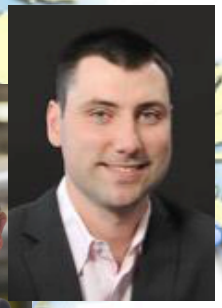
Dairy in QC
Farms: 5,894
Cows: 354,800
Heifers: 151,500

Dairy in NB
Farms: 206
Cows: 18,900
Heifers: 8,800

Dairy in NL
Farms: 32
Cows: 6,000
Heifers: 2,100

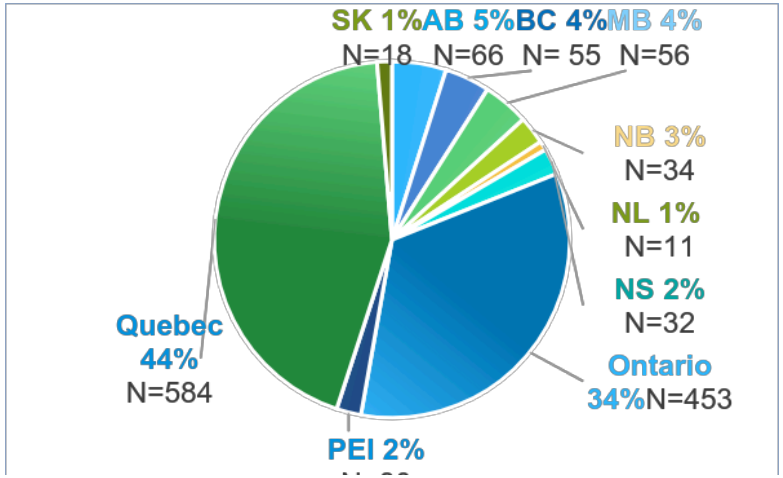
Dairy in PE
180
13,900
7,000

Dairy in NS
229
23,000
Heifers: 10,200



Phase 1 - Questionnaire

- Phase 1 questionnaire sent to all 11,962 licensed dairy farms
- Respondents - **1,342** (mail, online, & phone)
- **11% response rate** – represent ALL 10 Provinces!
- Baseline production and milk quality data for ALL dairy producers in Canada to put our responders / participants into context (unique ID's)



Phase 1 - Questionnaire

Preliminary Results:

- 37 (3%) were certified organic farms
- 85% enrolled in Milk Recording (75% nationally)
- 59% tie-stall; 38% free-stall and 3% packs/other
- 12% of farms used robotic milking systems

Phase 2 – Farm Visits (371)

- 81% of producers in Phase I agreed to participate in farm visits
- Farms were selected based on regional distribution (farms in EVERY province) and to reflect the national enrollment in milk recording
- Farm visit data collection:
  - Validation/verification of Phase I responses
    - Biosecurity practices, Milking procedures (Milking time visit!)
  - Animal care assessment
    - Animal based measures (proAction methods) and facility assessment
  - Biological samples for animal health and public health testing
    - Manure and bulk tank milk

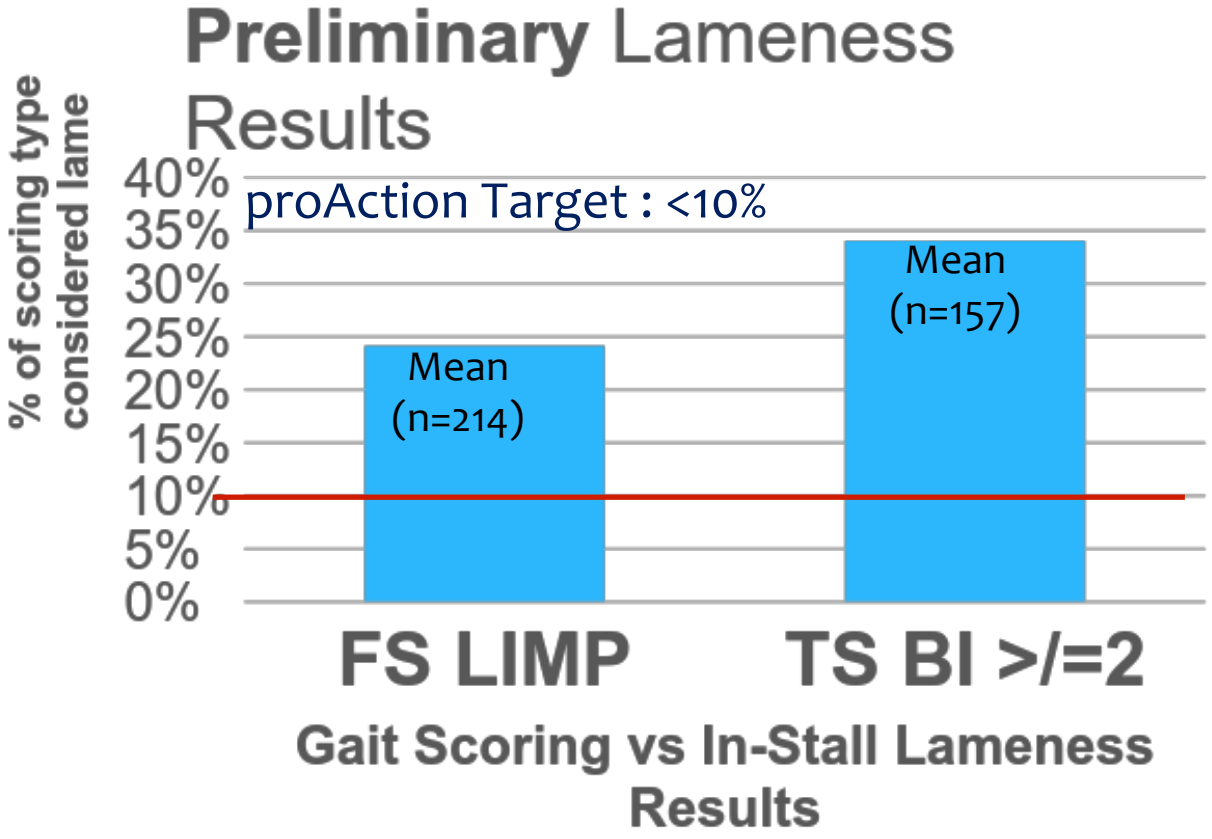
proAction™ Initiative
On-Farm Excellence
Excellence à la ferme

Research Outcomes

Dairy Research for a
Healthy World.

Assessment and interpretation of key welfare issues on Canadian dairy farms

S. Croyle, D. Kelton, S. LeBlanc, D. Khosa, D. Haley



Attitudes and Implementation of Biosecurity Practices by Canadian dairy farmers

A. Rahman, J. Dubuc, D. Kelton, S. Dufour, G Keefe

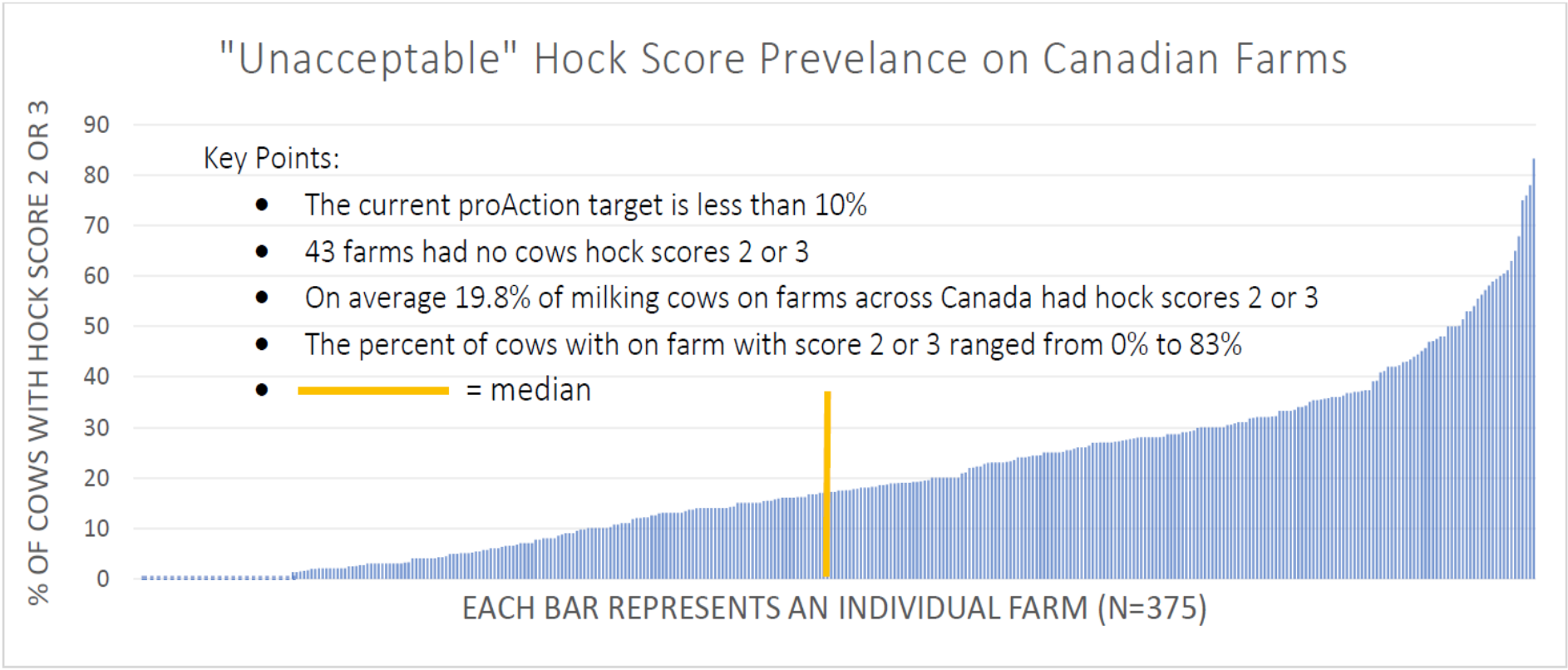
- 47% had purchased at least one dairy animal in 2014
- 27% had cattle temporarily leave the farm and return
- Diseases they have and are working to control:
  - *Staph aureus* mastitis, digital dermatitis, ringworm
- Diseases they don't have and are actively trying to prevent:
  - BVD, Johne's Disease, FAD (FMD)
- 43% participated in a voluntary Johne's control program

Question 2

* How many of the 371 dairy farms visited during the summer of 2015 as part of the Phase 2 of the NDS had NO unacceptable hock scores based on proAction?
  1. None
  2. Less than 10
  3. Between 10 and 50
  4. Between 50 and 100

Question 2

Distribution graph of percentage of unacceptable hock lesions on NDS farms



Collaborators and Students

* **Cathy Bauman** and Clemence Nash (U of Guelph)
* Jason Lombard (USDA NAHMS)
* Herman Barkema (U of Calgary), Fabienne Uehlinger (U of Saskatchewan), Jocelyn Dubuc (U de Montréal), Greg Keefe (U of PEI),

Graduate Students

* Stephanie Croyle
* Emilie Belage
* Ashique Rahman

14 FANTASTIC Summer Students

Acknowledgements

Dairy Farmers of Canada
dairyfarmers.ca
Les Producteurs laitiers du Canada
producteurslaitiers.ca
Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada
Réseau laitier canadien
Canadian Dairy Network
Canadian Dairy Commission
Commission canadienne du lait