

Reducing stress of dairy cows and farmers to improve resiliency and welfare

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What is resiliency?

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*“An ability to recover from or adjust easily to misfortune or **change**”*

(Merriam-Webster dictionary)

What is resiliency in the dairy industry?

What is resiliency in the dairy industry?

- One that recovers from, or adapts to, changes in...
 - Economic conditions
 - Inflation
 - Social conditions
 - Food safety, animal welfare
 - Environmental conditions
 - Climate

How is Canada working towards a more resilient dairy sector?

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- Proactive approaches to address these conditions

Example...proAction assurance program



To offer the best milk every day, Canadian dairy farmers have excellent standards and practices. Dairy Farmers of Canada and members initiated the development of proAction to show how farmers responsibly produce milk. With proAction, farmers offer proof to customers that they work to ensure milk quality and safety, and to continually improve animal health and welfare as well as environmental stewardship.

How is Canada working towards a more resilient dairy sector?

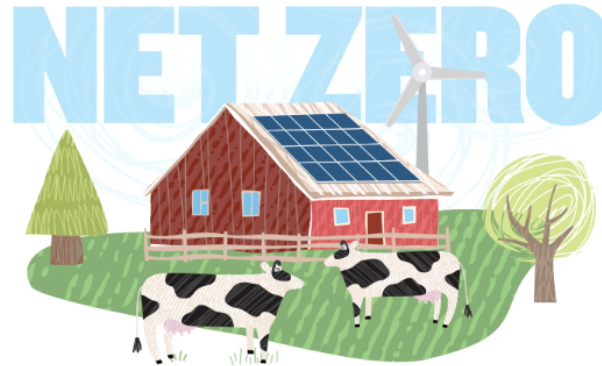
- Proactive approaches to address these conditions
- Setting goals and targets

Example...targeting to be net zero by 2050



Dairy Net Zero by 2050

Dairy Farmers of Canada has committed the dairy farm sector to reaching net-zero greenhouse gas emissions by the year 2050.

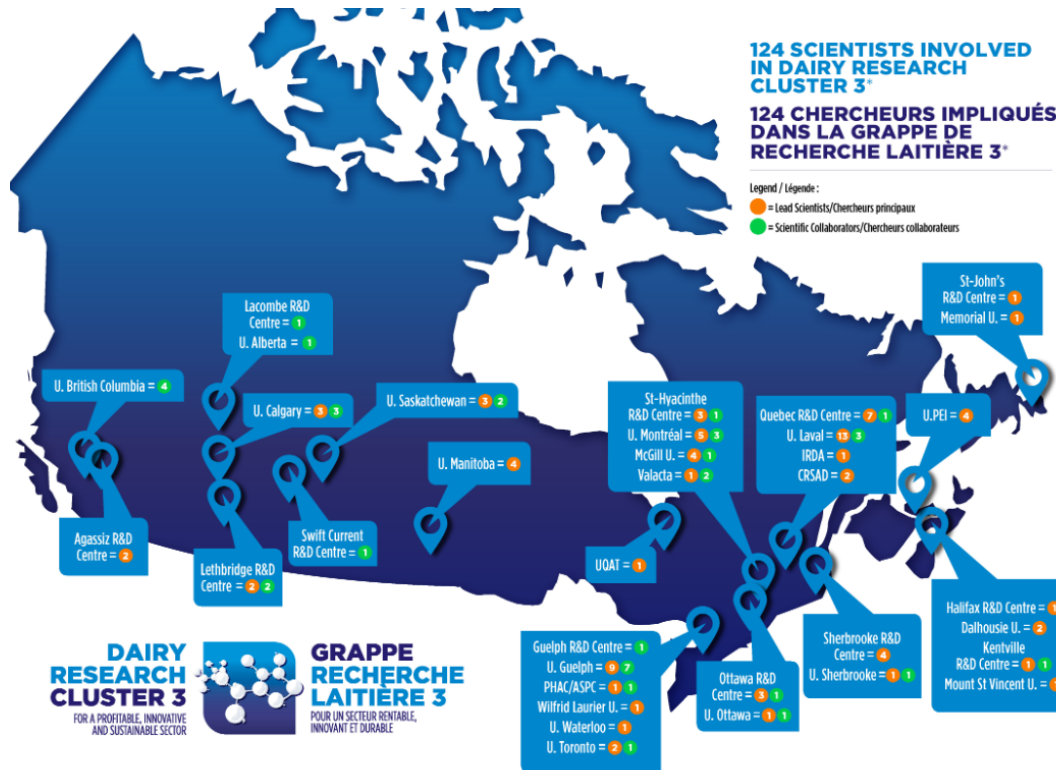


What does 'net zero' really mean? Net-zero emissions for dairy farms means reaching a balance between greenhouse gas (GHG) emissions from farms and GHG removed from the atmosphere. To get there, farmers make efforts to reduce emissions as much as possible, and act to sequester carbon in their landscape to offset the remainder. [Learn more](#)

How is Canada working towards a more resilient dairy sector?

- Proactive approaches to address these conditions
- Setting targets
- Investing in research to address conditions and meet targets

Example...funding research programs to address various issues facing the industry



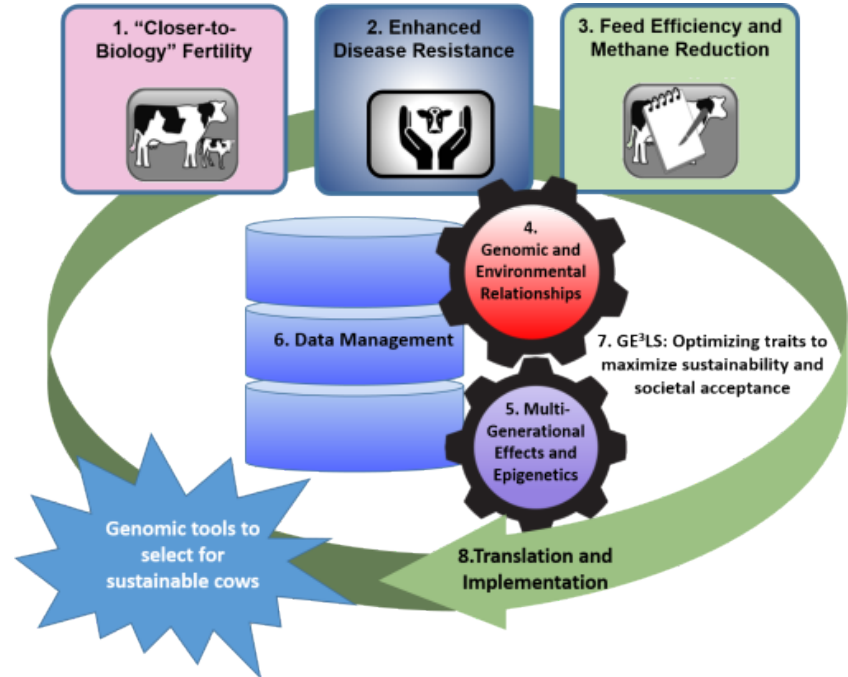
DAIRY RESEARCH CLUSTER 3
 FOR A PROFITABLE, INNOVATIVE AND SUSTAINABLE SECTOR



GRAPPE RECHERCHE LAITIÈRE 3
 POUR UN SECTEUR RENTABLE, INNOVANT ET DURABLE



Example...funding research programs to address various issues facing the industry



Despite being proactive and many successes...there are still challenges...

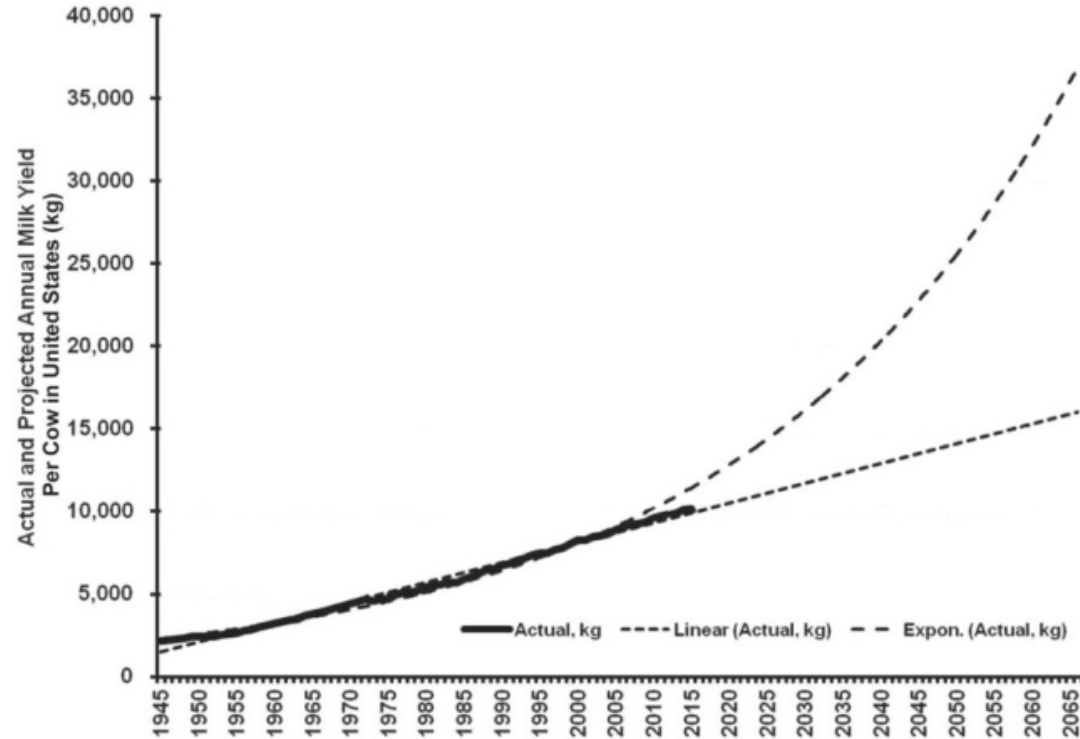
Despite being proactive and many successes...there are still challenges...

- Stress...

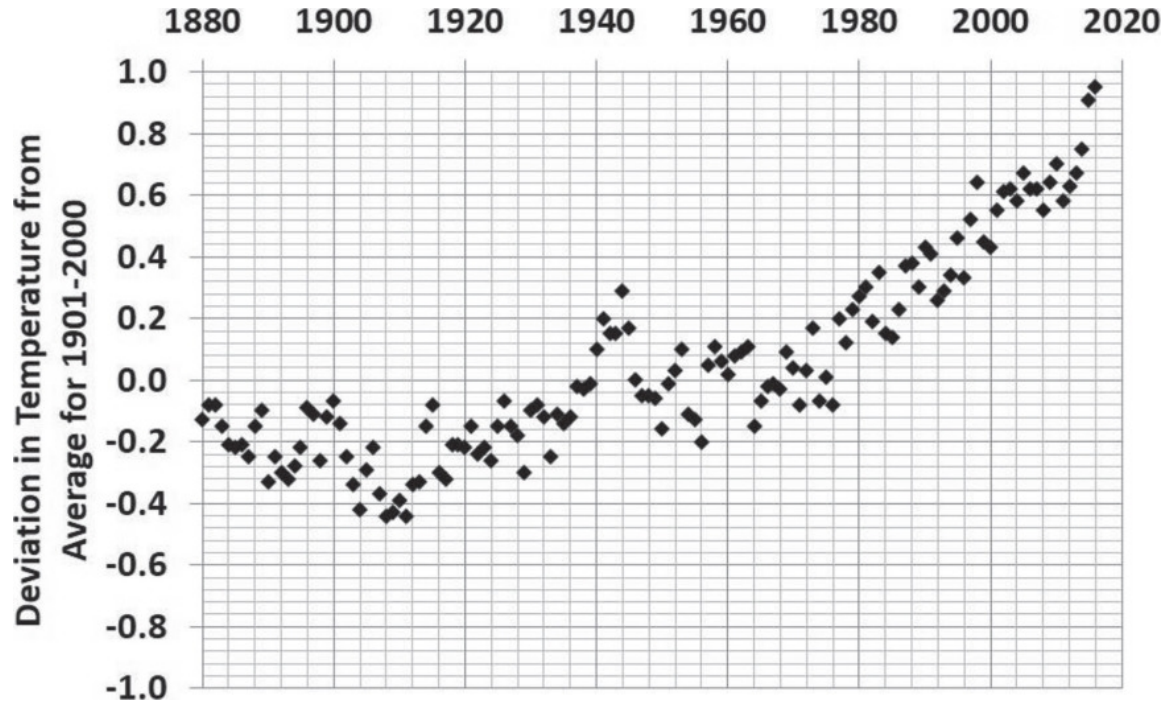
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- Stress...
 - Cows

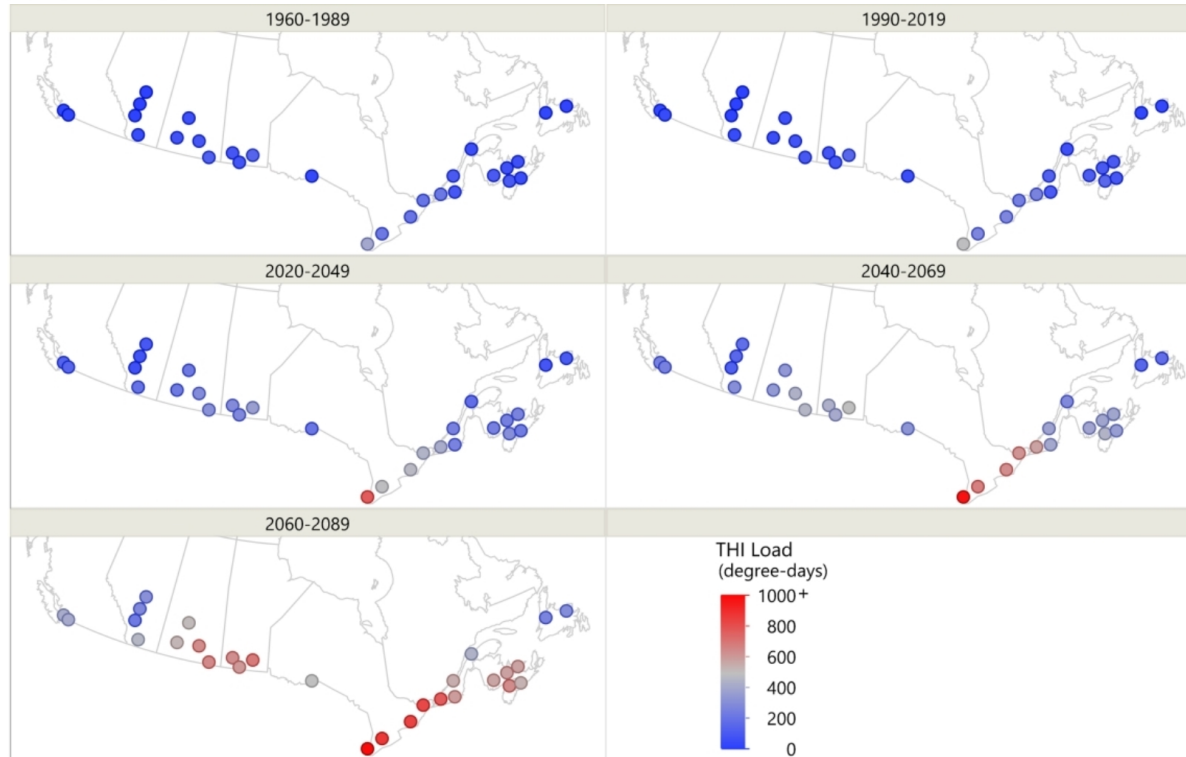
Forecasted change in milk yield of US dairy cows



Trends in global temperature...

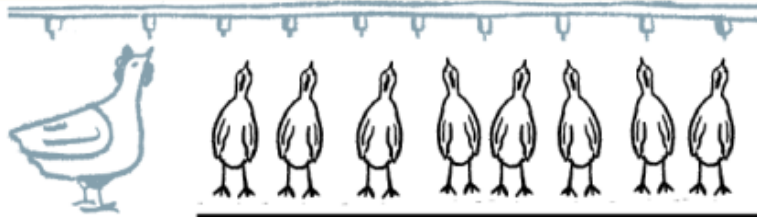


Projected risk of heat stress for Canadian dairy cattle...

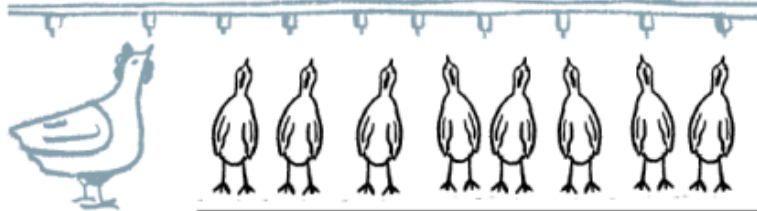


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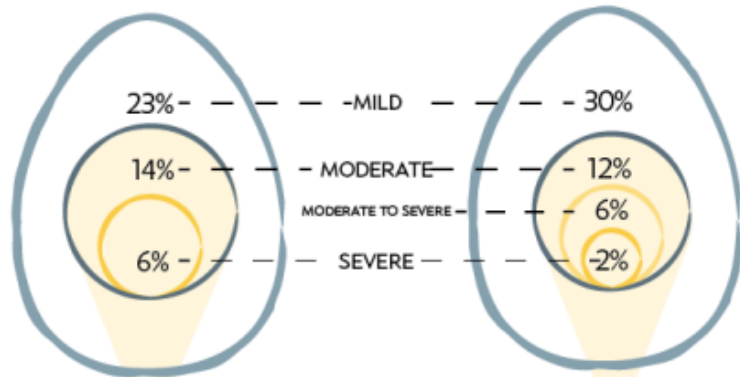
- Stress...
 - Cows
 - Farmers



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20% MODERATE TO SEVERE
ANXIETY
 DISORDERS

SIGNIFICANTLY HIGHER

20% MODERATE TO SEVERE
DEPRESSIVE
 DISORDERS

SIGNIFICANTLY LOWER

15% — THAN THE CANADIAN GENERAL POPULATION DURING COVID-19 — **26%**

- - **SUICIDE IDEATION** IS OVER **2X HIGHER** IN FARMERS THAN THE GENERAL POPULATION:

APPROX.

1 IN 4 CANADIAN FARMERS

FELT THEIR LIFE WAS NOT WORTH LIVING,
WISHED THEY WERE DEAD, OR THOUGHT OF
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FARMERS HAD SIGNIFICANTLY **HIGHER** SCORES ON ALL 3 SUBSCALES OF THE MASLACH BURNOUT INVENTORY COMPARED TO POPULATION NORMS.



HIGH EXHAUSTION & CYNICISM ARE 2 OF THE 3 COMPONENTS OF

BURNOUT.



76% OF FARMERS WERE CLASSIFIED AS EXPERIENCING MODERATE OR HIGH **PERCEIVED STRESS**

What are sources of stress for our farmers?

What are sources of stress for our farmers?

- Really heavy workload and work hours - being 'tied' to the farm
- Public mistrust of farmers and the food they grow
- Financial stress
- Environment challenges
- Perceived lack of support from family and industry
- Labour shortages and high employee turnover

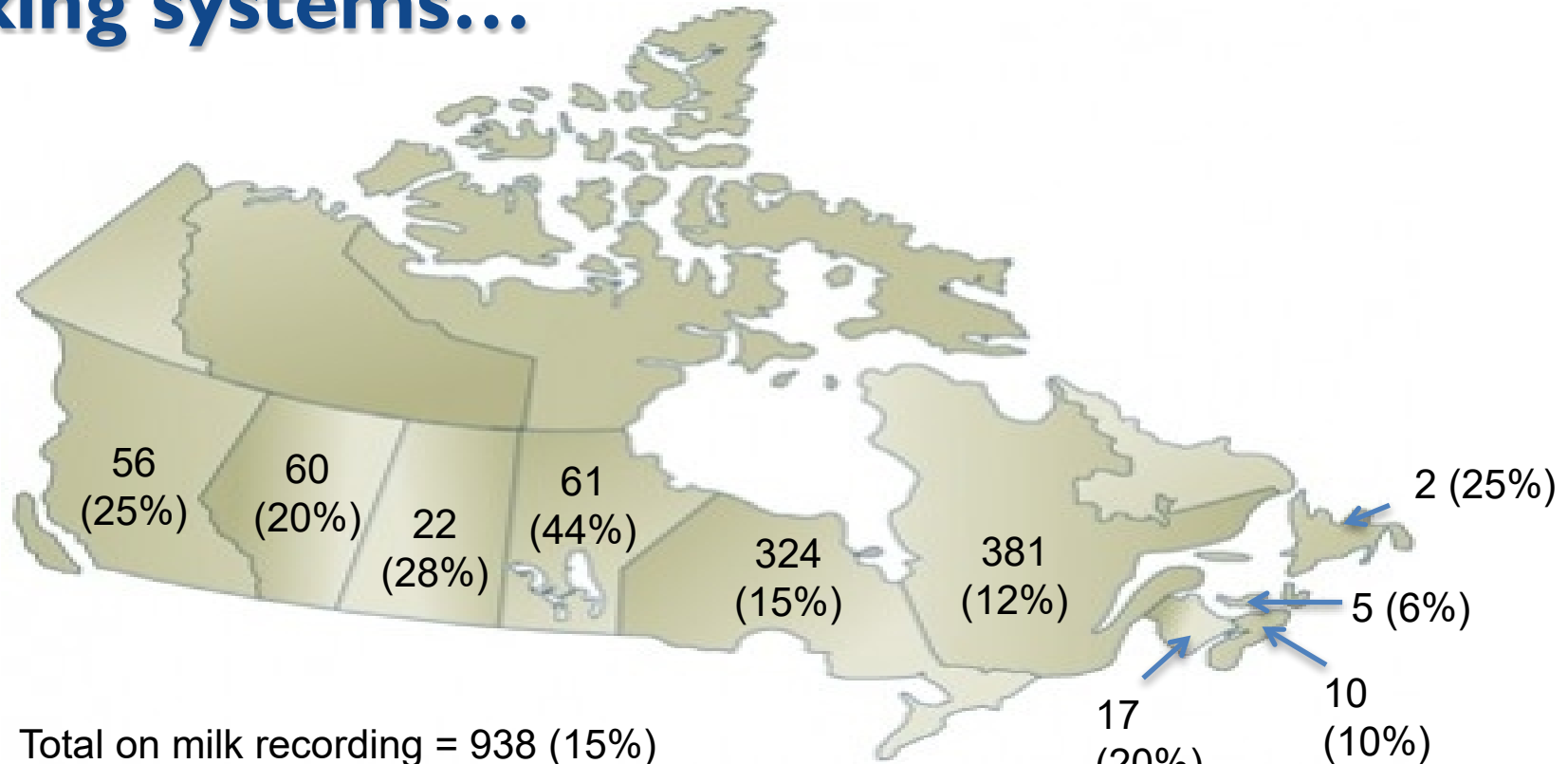
Jones-Bitton et al. 2019. Int J Environ Res Public Health 16:5074.

Hagen et al. 2021. Int J Environ Res Public Health. 18:7366.

What are Canadian dairy farmers doing to counteract these issues?



Rapid adoption of automated (robotic) milking systems...



Total on milk recording = 938 (15%)

Estimated total = ~2,000 (~20%)

Source: Lactanet, 2021

Recent survey of Canadian automated milking producers (n=217)...

- Perceived improvements after transition on a scale of 1 (strongly disagree) to 5 (strongly agree)

Robotic milking has...	Improved profitability	Met my expectations	Improved my quality of life
Average score	3.8	4.4	4.5

Recent survey of Canadian automated milking producers (n=217)...

- Most common improvements to quality of life:
 - increased flexibility with time,
 - work being less physical on their body,
 - easier employee management,
 - improved herd health and better herd management

Survey on mental health of Canadian AMS farmers...

- Compared to the results of another study on farmer mental health (Jones-Bitton et al., 2019), the surveyed dairy farmers with AMS were slightly less stressed than the average Canadian farmer

Quote from my colleague:

I sent my brother, who is a dairy farmer with robotic milkers, the article about quality of life for farmers and cows with technology.

*Although he does feel there are significant benefits in terms of milk production, calmness of cows, and herd health, the life-style value is huge. He says **"whenever someone asks me if robots pay, I always tell them...who cares."***

Survey on mental health of Canadian AMS farmers...

- Farmers who also adopted automated feeding technology (as opposed to manual feeding) had:

- ↓ Stress
- ↓ Anxiety
- ↓ Depression
- ↑ Resiliency



Survey on mental health of Canadian AMS farmers...

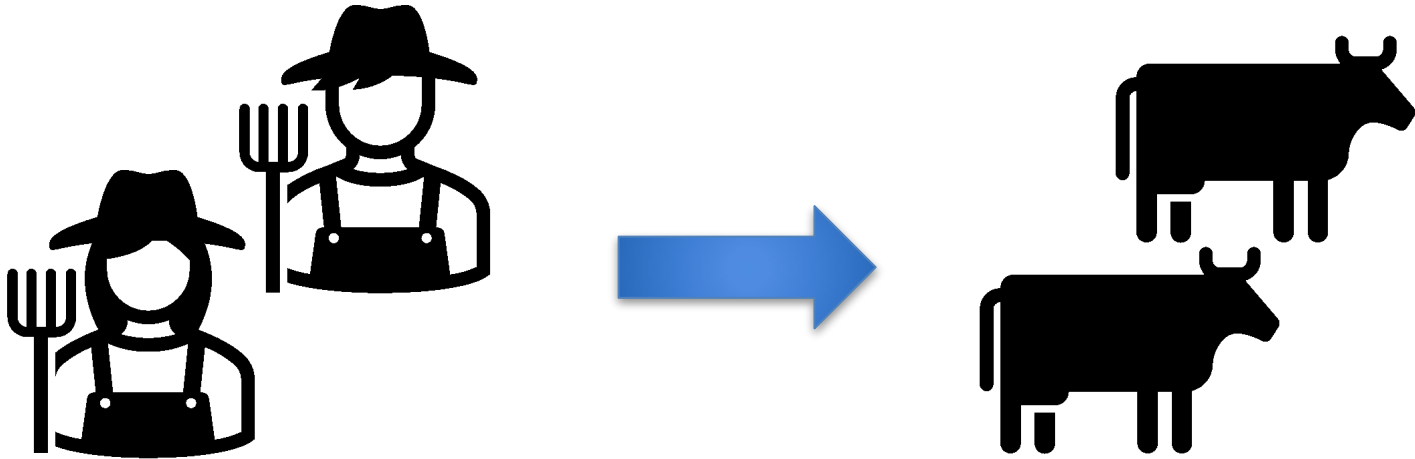
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- Additive benefits of technology adoption?

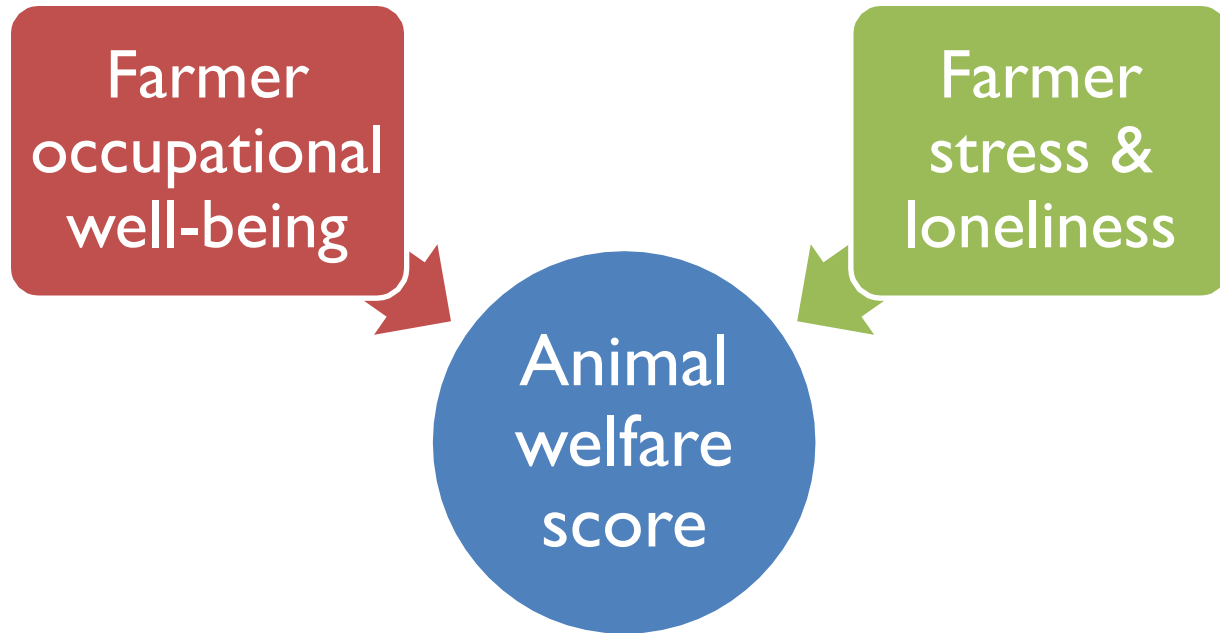
The well-being of farmers links back to the well-being of the animals in their care...



On swine and dairy farms in Norway...

- According to farmers, taking care of their own well-being ranked as the most important way to improve animal welfare, but it was the most difficult action to put into practice (*Kaupinnen et al., 2010*)
- Pig farmers who felt that taking care of their own well-being was relatively easy also had more weaned piglets for first parity sows (*Kaupinnen et al. 2012*)

On dairy farms in Norway...



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Average score	3.8	4.4	4.5	4.5

Survey on mental health of Canadian AMS farmers...

- Farmer mental health was generally better with...
 - ↓ Lameness prevalence in their cows

Take home messages:

- Canadian dairy industry is working to be more resilient
 - Challenges still remain
- Focus needs to be on reducing stress and improving welfare, both of cows and those who take care of them
 - Evidence of technology having some benefit

Thanks to our funders:



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Questions???



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