

# Organic dairy farmers put more emphasis on production traits than conventional farmers

Nordic workshop in dairy cattle genetics and genomics

*M. Slagboom, M. Kargo, D. Edwards, A.C. Sørensen, J. R. Thomasen and L. Hjortø*

Undersøgelsen er en del af Organic RDD 2-projektet SOBcows

STØTTET AF  
**promilleafgiftsfonden**  
for landbrug



# Farmer preferences

- Economic models don't account for everything
  - Organic principles
- Create ownership
  - Ensure the breeding goal reflects farmers' requirements

# Farmer preferences

**Weight in breeding goal = Economic value + Farmer preferences**



**Economic model (Simherd)**



**The farmer survey**

# Aim

- To characterize preferences of Danish dairy farmers for improvements in breeding goal traits
  - Investigate the presence of heterogeneity in farmers' preferences by means of a cluster analysis
  - Associate these clusters with herd characteristics and production system (organic or conventional)

# The survey

1000minds®

## Preferences survey

Please reveal your preferences by answering the following questions.

Question # 1

**Which of these two alternatives do you prefer?**

(given they're identical in all other respects)

Milk production

**+38 kg ECM per 305 days lactation**

Mastitis

**As in your herd today**

this one

OR

Milk production

**As in your herd today**

Mastitis

**5.3 less cases per 100 cows**

this one

they are equal

[skip this question for now »](#)

0% complete

Larger font for questions (easier to read)

# The survey

- Improvements are economically equal
- Based on economic weights of simulation study for an organic system

Trait	Holstein	
Feed efficiency	+0.010	kg ECM per feed unit
Milk production	+38	kg ECM per 305 days lactation
Cow fertility	+39	Pregnancies per 100 inseminations
Heifer fertility	+11	Pregnancies per 100 inseminations
Calving difficulty	-8.2	Cases per 100 cows
Mastitis	-5.3	Cases per 100 cows
Other diseases	-10.1	Cases per 100 cows
Hoof and leg diseases	-13.5	Cases per 100 cows
Calf mortality	-12	Dead heifer calves per 100 cows
Cow mortality	-1.8	Cases per 100 cows years

# Response

- Trait rankings per farmer (1 highest - 10 lowest)
- Number of respondents

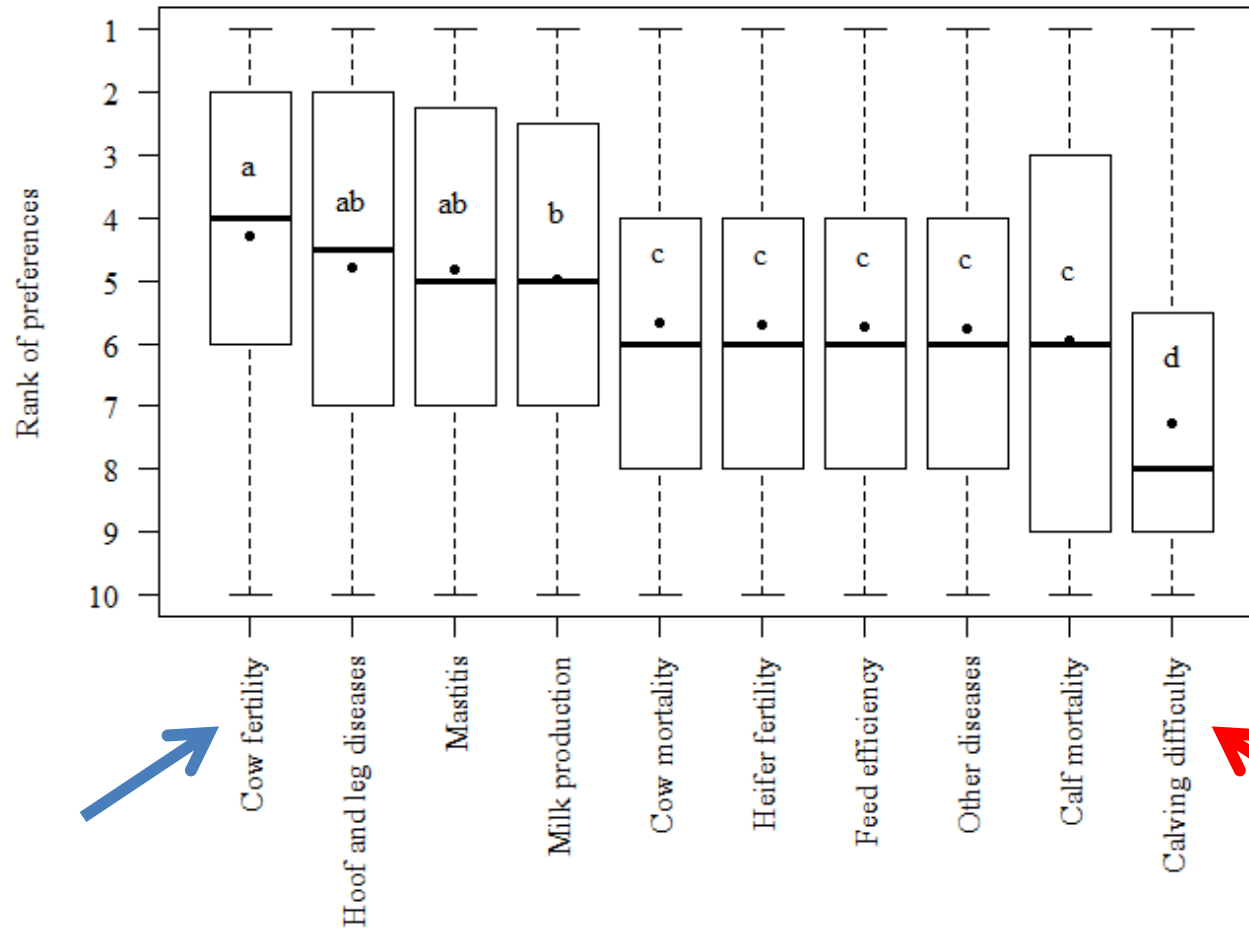
Herds	Holstein	RDM	Jersey
Organic (48%)	106	29	27
Conventional (13%)	290	58	49
Total (16%)	396	87	76

# Holstein





# Trait preferences



# Clusters

- Cluster 1: Health and fertility
- Cluster 2: Production and udder health
- Cluster 3: Survival
- Cluster 4: Production and fertility

# Organic vs conventional

- Higher percentage of organic farmers in production-based clusters

	Health and fertility	Production and udder health	Survival	Fertility and Production	P-value
Organic	19%	28%	19%	38%	0.004

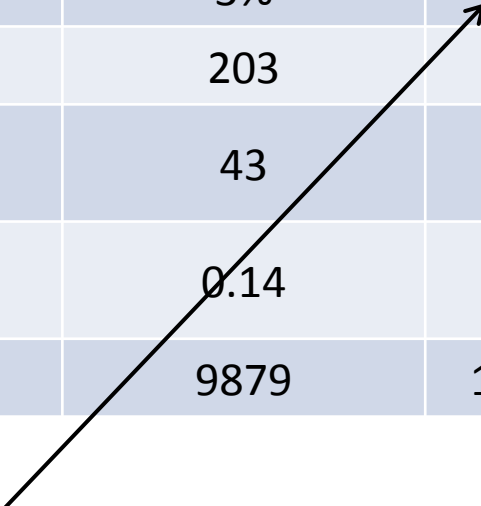
Ranked production traits the lowest

Ranked production traits the highest

# Differences in herd characteristics

	Health and fertility	Production and udder health	Survival	Fertility and Production	P-value
Dead cows	3%	3%	6%	3%	<0.001
Cell count	185	203	208	198	0.013
Conception rate	43	43	44	40	0.036
Hoof and leg diseases	0.21	0.14	0.16	0.15	0.014
ECM	10389	9879	10132	10043	0.047

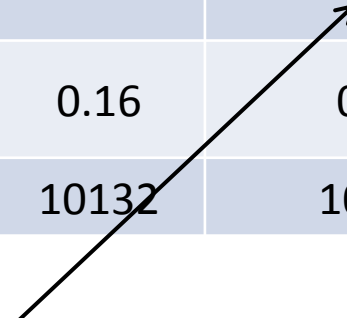
Ranked mortality traits the highest



# Differences in herd characteristics

	Health and fertility	Production and udder health	Survival	Fertility and Production	P-value
Dead cows	3%	3%	6%	3%	<0.001
Cell count	185	203	208	198	0.013
Conception rate	43	43	44	40	0.036
Hoof and leg diseases	0.21	0.14	0.16	0.15	0.014
ECM	10389	9879	10132	10043	0.047

Ranked cow and heifer fertility the highest



# Differences in herd characteristics

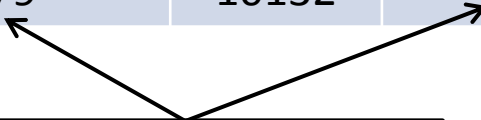
	Health and fertility	Production and udder health	Survival	Fertility and Production	P-value
Dead cows	3%	3%	6%	3%	<0.001
Cell count	185	203	208	198	0.013
Conception rate	43	43	44	40	0.036
Hoof and leg diseases	0.21	0.14	0.16	0.15	0.014
ECM	10389	9879	10132	10043	0.047

Ranked hoof and leg diseases the highest

# Differences in herd characteristics

	Health and fertility	Production and udder health	Survival	Fertility and Production	P-value
Dead cows	3%	3%	6%	3%	<0.001
Cell count	185	203	208	198	0.013
Conception rate	43	43	44	40	0.036
Hoof and leg diseases	0.21	0.14	0.16	0.15	0.014
ECM	10389	9879	10132	10043	0.047

Ranked production traits the highest



# Differences in herd characteristics

	Health and fertility	Production and udder health	Survival	Fertility and Production	P-value
Dead cows	3%	3%	6%	3%	<0.001
Cell count	185	203	208	198	0.013
Conception rate	43	43	44	40	0.036
Hoof and leg diseases	0.21	0.14	0.16	0.15	0.014
ECM	10389	9879	10132	10043	0.047

- Farmer want what they don't have?



# Conventional farmers

- Cluster 1: Health
- Cluster 2: Survival
  - Comparable to cluster 3 of all farmers together
- Cluster 3: Production and fertility
  - Comparable to cluster 4 of all farmers together
- Differences in herd characteristics
  - Percentage of dead cows

# Organic farmers

- Production traits ranked higher
- Cluster 1: Robustness
- Cluster 2: Production and udder health
  - Comparable to cluster 2 of all farmers together
- Cluster 3: Production and fertility
  - Comparable to cluster 4 of all farmers together
- No differences in herd characteristics

# Conclusions

- Heterogeneity exists within farmers' preferences
  - Clear groups of farmers found
- Some herd characteristics can be linked to farmer groups
  - Farmer want to improve what they don't have
- Production system can be linked to farmer groups
  - Organic farmers more emphasis on production traits

# Implications

- Multiple selection indices
  - Increases ownership
  - Martin-Collado *et al.*, 2015

# Questions?

