

Supplementary Material

Seroprevalence of *Mycobacterium avium* subsp. *paratuberculosis* in Swiss dairy herds and risk factors for a positive herd status and within-herd prevalence

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1 Supplementary Table S2

Table S2. Results of the univariable logistic regression model assessing possible associations between risk factors and within-herd seroprevalence in 163 Swiss dairy herds (9 seropositive, 154 seronegative); variables with $p < 0.2$ are indicated in bold and were carried forward for the multivariable regression model

Variable	Coefficient	SE ¹	95% CI ²	p value
Presence of other ruminants on the farm				
Yes	0.08	0.14	-0.20-0.36	0.58
(vs. no)				
Presence of pigs on the farm				
≥ 20 pigs	0.01	0.19	-0.37-0.39	0.95
< 20 pigs	-0.21	0.25	-0.71-0.29	0.42
(vs. none)				
Contact with other cows during calving				
Intensive contact (group calving box)	0.03	0.15	-0.25-0.32	0.80
Low contact intensity	-0.003	0.19	-0.38-0.37	0.98
(vs. only individual calving)				
Bedding management for calving				
Same bedding used for several calvings	0.04	0.28	-0.14-0.95	0.41
Pen or stall freshly bedded before each calving	-0.027	0.17	-0.61-0.07	0.26
(vs. change of bedding after each calving)				
Gloves for the care of newborn calves				
Yes	0.2	0.35	-0.49-0.90	0.57
(vs. no)				
Use of the calving pen as sick pen	0.02	0.05	-0.08-0.12	0.68
Always	0.08	0.18	-0.27-0.43	0.65
Often	-0.11	0.23	-0.58-0.35	0.62
Rarely	0.05	0.19	-0.34-0.44	0.80
(vs. never)				
Drinking of colostrum from the dam's udder				
Yes	-0.14	0.13	-0.40-0.12	0.30
(vs. no)				
Housing of the young animals				
Neonates (first 2-3 weeks of life)				

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Group pen (vs. individual hutch)	0.02	0.13	-0.24-0.28	0.89
Pre-weaned calves				
Not on the farm (rearing farm)	0.2	0.49	-0.77-1.18	0.68
Group pen (vs. individual hutch)	-0.02	0.65	-1.28-1.28	1
Post-weaned calves				
Not on the farm (rearing farm) (vs. group pen)	0.11	0.18	-0.24-0.47	0.52
Risk of fecal contamination from the cows to the calves' environment				
Neonates (first 2-3 weeks of life)				
High risk (direct contact in the barn)	-0.25	0.52	-1.27-0.77	0.62
Low risk (indirect contact through equipment and/or boots) (vs. no risk)	-0.39	0.43	-1.24-0.44	0.35
Pre-weaned calves				
High risk (direct contact in the barn)	-0.01	0.47	-0.94-0.92	0.97
Moderate risk (direct contact on pasture)	-0.38	0.6	-1.57-0.8	0.52
Low risk (indirect contact through equipment and/or boots) (vs. no risk)	-0.2	0.35	-0.9-0.49	0.57
Post-weaned calves				
High risk (direct contact in the barn)	<0.001	0.41	-0.81-0.81	1
Moderate risk (direct contact on pasture)	0.21	0.24	-0.26-0.68	0.38
Low risk (indirect contact through equipment and/or boots) (vs. no risk)	0.25	0.27	-0.28-0.79	0.35
Frequency of manure removal				
In the neonates' area				
<1x/day (vs. 1-2x/day)	0.22	0.18	-0.13-0.59	0.22
In the pre-weaned calves' barn				
<1x/day 1-2x/day (vs. >3x/day)	-0.54 -0.77	0.5 0.52	-1.52-0.44 -1.79-0.25	0.28 0.24
In the post-weaned calves' barn				
<1x/day 1-2x/day (vs. >3x/day)	0.02 -0.08	0.25 0.26	-0.46-0.51 -0.59-0.42	0.92 0.74
In the heifers' barn				
<1x/day 1-2x/day (vs. >3x/day)	0.17 0.07	0.22 0.22	-0.26-0.62 -0.36-0.52	0.43 0.72
In the lactating cows' barn				
<1x/day 1-2x/day (vs. >3x/day)	-0.13 0.25	0.25 0.15	-0.64-0.36 -0.04-0.55	0.59 0.10
In the dry cows' barn				
<1x/day 1-2x/day (vs. >3x/day)	0.09 0.07	0.17 0.15	-0.24-0.43 -0.22-0.37	0.58 0.61
Cleaning management in the calf area	0.02	0.06	-0.10-0.14	0.75
In the neonates' area				
No disinfection, cleaning or washing	0.07	0.24	-0.4-0.54	0.77
Cleaning or washing	-0.17	0.33	-0.83-0.48	0.60
Disinfection 1-4x/year (vs. regular disinfection ³)	0.02	0.23	-0.44-0.48	0.93
In the pre-weaned calves' barn				
No disinfection, cleaning or washing	-0.10	0.29	-0.68-0.47	0.73
Cleaning or washing	-0.30	0.67	-1.62-1	0.64
Disinfection 1-4x/year (vs. regular disinfection ³)	-0.19	0.33	-0.84-0.45	0.56

In the post-weaned calves' barn				
No disinfection, cleaning or washing	0.21	0.86	-1.47-1.89	0.81
Cleaning or washing	<0.001	1.21	-2.37-2.37	1
Disinfection 1-4x/year (vs. regular disinfection ³)	<0.001	0.90	-1.77-1.77	1
Milk feeding				
Powdered milk (vs. fresh milk)	-0.63	0.24	-1.10--0.15	0.01
Leftovers from the cows' feed				
Given to post-weaned calves				
Yes (vs. no)	-0.21	0.23	-0.66-0.23	0.35
Given to heifers				
Yes (vs. no)	0.04	0.16	-0.28-0.36	0.81
Possible fecal contamination of the calves' feed with feces of older animals				
Yes (vs. no)	-0.23	0.29	-0.80-0.34	0.43
Possible contamination of the calves' water with feces of older animals				
Yes (vs. no)	-0.20	0.5	-1.17-0.78	0.69
Runoff from the manure pile in the environment				
Yes (vs. no)	0.18	0.15	-0.11-0.46	0.23
Use of manure equipment for feed transport				
Yes (vs. no)	-0.20	0.39	-0.96-0.56	0.60
Use of manure and/or slurry for fertilization				
For pastures, including calf pastures	0.21	0.4	-0.55-0.97	0.60
For cows' and heifers' pastures (vs. for crop land and/or hay meadows)	0.18	0.4	-0.6-0.97	0.64
Heifers sharing alpine pastures with other animal categories from their farm				
Yes (vs. no)	-0.24	0.17	-0.58-0.10	0.17
Lactating cows sharing alpine pastures with other animal categories from their farm				
Yes (vs. no)	-0.2	0.33	-0.85-0.44	0.54
Dry cows sharing alpine pastures with other animal categories from their farm				
Yes (vs. no)	-0.22	0.23	-0.67-0.24	0.35
Occurrence of diseases in calves at the time of farm visit				
Yes (vs. no)	-0.18	0.16	-0.49-0.13	0.25
Occurrence of diseases in heifers at the time of farm visit				
Yes (vs. no)	0.23	0.37	-0.50-0.97	0.53
Occurrence of diseases in lactating cows at the time of farm visit				
Yes (vs. no)	-0.28	0.14	-0.56-0.00	0.05

¹SE: Standard Error

²CI: Confidence Interval

³Regular disinfection: after each use (individual igloo) or each group
See also Tables I and III for definitions of the variables