Supplemental Table S1. Description of farm traits and lactating cow housing for 21 Vermont organic dairy herds participating in the study.

Parameter	Level of parameter	Categorical descriptors		Continuous descriptors		
		Number	Percentage	Mean	SD	Range
Facility type	Bedded pack	5	23.8			
	Freestall	6	28.6			
	Tiestall	10	47.6			
Bedding type	Bedded pack	5	23.8			
	Sand	1	4.8			
	Wood	15	71.4			
Facility and bedding combination used	Bedded pack	5	23.8			
	Freestall with sand	1	4.8			
	Freestall with wood	5	23.8			
	Tiestall with wood	10	47.6			
County	Addison	2	9.5			
	Caledonia	1	4.8			
	Chittenden	2	9.5			
	Franklin	4	19			
	Lamoille	1	4.8			
	Orange	5	23.8			
	Orleans	4	19			
	Washington	1	4.8			
	Windham	1	4.8			
Predominant breed	Holstein	8	38.1			
	Jersey	10	47.6			
	Other	3	14.3			
Herd size category (no. cows)	30 to 55	6	28.6	64.9	17.1	32-99
	56 to 69	6	28.6			
	70 to 100	9	42.8			
Rolling herd average (pounds)		20		14,163	3,096	(9,000-21,204)

		n	%	Mean	SD	Range
Feed a supplemental source of vit. E and selenium for lactating or dry cows	Yes	12	60			
	No	8	40			
	Was not sure	1				
Air quality (producer-assessed)	Poor/Fair	6	28.6			
	Good	8	38.1			
	Excellent	7	33.3			
Age of housing facility for lactating cows (years)				47	42	2-200
Laying surface	Deep bedded	8	38.1			
	Mattress or concrete	13	61.9			
If facility is freestall:						
Freestall stocking density[1]		6		1.16	0.38	0.84-1.76
If facility is tiestall:						
Trainers in tiestall	Yes	3	30			
	No	7	70			
If facility is bedded pack:						
Cows fed on bedded pack	Yes	3	60			
	No	2	40			
Number of cows on bedded pack		5		52.2	17.1	35-80
Resting area per cow on bedded pack (m^2/cow)		5		8.1	1.7	6.3-10.2
Bedding pack stocking density (percent)[2]		5		1.09	0.23	0.84-1.39

[1] Current number of lactating cows divided by number stalls available in freestall

[2] Stocking density as percentage of ideal stocking density (suggested 9.29 meters sq/cow Holsteins, 7.9 for Jerseys; University of Minnesota; https://extension.umn.edu/dairy-milking-cows/compost-bedded-pack-barns-dairy-cows): i.e., (no. cows x 9.29 m^2)/(no. cows x calculated cow density); a stocking density for a farm of 1.00 would exactly match the suggested stocking density for a bedded pack.

Supplemental Table S2. Description of lactating bedding management for 21 Vermont organic dairy herds participating in the study.

Parameter	Level of parameter	Categorical descriptors		Continuous descriptors		
		Number	Percentage	Mean	SD	Range
If use wood products in bedding:[1]						
If use shavings/sawdust/woodchips for bedding material, moisture-content?	Kiln-dried	8	40			
	Fresh or raw	12	60			
If shavings/sawdust not used immediately, where is it stored?[2]	Outside uncovered	1	5.6			
	Under cover	17	94.4			
If use fiber in bedding:						
What type is it?	Both straw and hay	2	66.7			
	Hay	1	33.3			
Where is it sourced from?	Grown on-farm	1	33.3			
	Purchased	2	66.7			
Is it wrapped or dry?	Wrapped round bales	1	33.3			
	Dry round bales	2	66.7			
Where is it stored?	Outside uncovered	1	33.3			
	Under cover	1	33.3			
	Both	1	33.3			
Bedding conditioner used?	Yes	5				
	No	16				
If facility is freestall or tiestall:						
Frequency of adding new bedding to stalls (times per week)		16		12.2	10	1-28
		16		27.6	13.6	14-56
Depth of bedding in stalls (cm)[3]		15		4.5	3.5	1.3-12.7
How is alleyway cleaned (freestall)?[4]	Continuous automated scraper	2	33.3			
	Skid steer	4	66.7			
Frequency of running gutter cleaner (tiestall)[5]	Once daily	3	30			

	Twice daily	7	70			
If facility is bedded pack:						
Frequency of tilling pack (times per week)[6]		0 (n = 2)				
		3.5 (n = 1				
		14 (n = 2)				
Depth of tilling pack (cm), if tilled:[7]		10.2 (n = 1)				
		23.3 (n = 1)				
		30.5 (n = 1)				
"Attentiveness to bedded pack" score[8]	n = 5 (0.7, 0.9, 0.9, 1.0, 1.0)			0.9	0.12	0.7-1.0
Depth of bedded pack (m)		0.9 (n = 1)				
		1.2 (n = 2)				
		1.5 (n = 1)				
		1.7 (n = 1)				

[1] n = 1 farm used new sand, so was the only one of the 21 farms not using a wood product at all

[2] n = 2 bedded pack farms used fresh woodchips immediately on delivery

[3] n = 15; n =1 deep-bedded sand producer unable to estimate bedding depth in stalls

[4] n = 6 freestalls

[5] n = 10 tiestalls

[6] n = 5 bedded packs

[7] n = 3 bedded packs that tilled surface

[8] Variable created by combining 4 categorical variables from survey into 1 numeric scale (0-1.0). Assigned 0.8 if answered "yes" to "add new bedding to pack daily," and additional 0.1 added if answered "yes" to any of following: monitor pack for temperature, monitor pack for moisture, monitor pack for density.

Supplemental Table S3. Description of mastitis control practices for 21 Vermont organic dairy herds participating in the study.

Parameter	Level of parameter	Number	Percentage
If answer to question, "How do you detect a case of CLINICAL mastitis?" included some sort of clinical sign (abnormal cow/abnormal udder) AND forestripping (check for abnormal milk)	Yes	8	38.1
	No	13	61.9
Clip or flame udders one or more times per lactation	No	16	76.2
	Yes	5	23.8
Trim switches on tails	No	2	9.5
	Yes	19	90.5
Do you keep a record of clinical mastitis events?	Always	8	38.1
	Sometimes	4	19
	Temporarily	3	14.3
	Never	6	28.6
If you do keep a record of clinical mastitis events, how is this done?	Written (paper, whiteboard)	11	26.7
	Software	4	73.3
Routinely perform bacteriological culture of mastitic milk	Always	4	19
	Sometimes	9	42.9
	Never	8	38.1
Routinely perform bacteriological culture of high somatic cell count cows	Always	3	14.3
	Sometimes	6	28.6
	Never	12	57.1
Routinely perform bacteriological culture of fresh cows	Always	0	0
	Sometimes	0	0
	Never	17	81
	Only if there is an issue noticed	4	19
Routinely perform bacteriological culture of cows before dry-off	Always	0	0
	Sometimes	0	0
	Never	17	81
	Only if there is an issue noticed	4	19
Where are cultures from mastitic cows performed?	On-farm or local veterinarian	9	42.9

	Reference lab	5	23.8
	Never culture	7	33.3
Routinely use vaccines for mastitis control	No	17	81
	Yes	4	19
Use any sort of intramammary product at dry-off	No	15	71.4
	Yes	6	28.6
Regular parenteral supplementation of dry cows with selenium and vitamin E	All lactating cows regularly	5	23.8
	Occasionally as needed (sick cow)	5	23.8
	No	11	52.4

Supplemental Table S4. Description of milking hygiene practices for 21 Vermont organic dairy herds participating in the study.

Parameter	Level of parameter	Number	Percentage
Do milkers wear gloves during milking?	Yes, all milkers consistently	11	55
	No, no one does	4	20
	Some milkers or inconsistent use	5	25
Frequency of milking cows	2 times per day	20	95.2
	Automated milking system (AMS)	1	4.8
Type of milking system used (if not AMS)	Parlor	7	35
	Tiestall	13	65
If milk in a parlor:			
Parlor type	Herringbone	3	42.8
	Step-up	2	28.6
	Swing	2	28.6
Are milking units routinely washed/sprayed off between uses?	Yes, routinely between milking individual cows; or occasionally, if the milking unit gets very dirty	5	71.4
	No, only at the completion of milking	2	28.6
Pre-dip teats with a chemical disinfectant	Yes	21	100
Type of pre-dip used	Iodine-based	18	85.7
	Hydrogen peroxide-based	3	41.3
Post-dip teats with a chemical disinfectant	Yes	21	100
Type of post-dip used	Iodine-based	20	95.2
	Chlorhexidine-based	1	4.8
Routinely forestrip as a part of udder prep	Yes	18	85.7
	No	3	14.3
Udders routinely wiped dry with any kind of towel prior to attaching the milking unit	Yes	20	95.2

	No (automated milking system)	1	4.8
If wipe udders dry:			
Paper or cloth towels?	Cloth	3	15
	Paper	17	85
How many cows are wiped with each towel?	One	16	80
	Two; or depends how dirty the udder is	4	20