

1 **Udder health of dairy cows with an extended voluntary waiting period from calving until the first insemination**

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5 SUPPLEMENTARY FILE

Table S1. Variables regarding udder health for all cows with a voluntary waiting period from calving until the first insemination of 50, 125, or 200 days (VWP-50, VWP-125, or VWP-200) in the complete lactation.

	VWP				Parity			<i>P</i> -value ¹		
	VWP50	VWP125	VWP200	SEM	1	≥2	SEM	VWP	Par	VWPxPar
Cows, n	54	49	51		41	113				
Average SCC ² within full lactation	4.34	4.44	4.31	0.07	3.88	4.84	0.06	0.26	<0.01	0.04
Average SCC ² corrected for milk yield	4.31	4.35	4.16	0.06	3.69	4.85	0.06	0.05	<0.01	0.07
Elevations of SCC (% of cows)	77.1	67.2	75.6	9.4	65.9	80.8	7.6	0.50	0.05	0.38
Elevations of SCC (n cases/ affected cow)	2.0	2.4	2.1	0.3	1.5	2.8	0.3	0.48	<0.01	0.35
Elevations of SCC (n, per lactation)	1.6	1.7	1.6	0.2	1.1	2.7	0.2	0.96	<0.01	0.21
Elevations of SCC (n, per cow per year)	1.7	1.3	1.1	0.2	0.9	2.0	0.2	0.90	<0.01	0.13
Clinical mastitis (% of cows)	19.8	24.3	22.1	10.0	9.6	34.6	8.1	0.89	<0.01	0.96
Clinical mastitis (n cases/ affected cow)	1.3	1.5	1.4	0.2	1.1	1.7	0.2	0.66	<0.01	0.95
Clinical mastitis (n, per lactation)	0.2	0.3	0.3	0.6	0.1	0.8	0.6	0.44	<0.01	0.71

¹VWP = voluntary waiting period; Par = parity class (Parity = 1 and parity ≥2); VWP×Par = interaction of VWP with parity.

²Somatic cell count (×10³ cells/mL) is shown and analyzed as the natural logarithm of SCC.

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7 **Table S2.** Dry-off antibiotic use and mastitis occurrence per cow per year of cows with a voluntary waiting period after calving until the first insemination of
 8 50, 125, or 200 days (VWP-50, VWP-125, or VWP-200).

	Primiparous			Multiparous			<i>P</i> -value		
	VWP50	VWP125	VWP200	VWP50	VWP125	VWP200	VWP	Par	VWP×Par
Cows, n	13	14	8	34	27	29			
Dry-off antibiotic use (%) ¹	15 (2/13)	0 (0/14)	13 (1/8)	68 (23/34)	56 (15/27)	52 (15/29)	0.17	<0.01	0.24
Dry-off antibiotic use per cow per year ²	0.15	0	0.09	0.65 ^a	0.45 ^{ab}	0.37 ^b	0.01	<0.01	<0.01
Cows, n	14	15	12	40	34	39			
Mastitis (%) ³	7 (1/14)	7 (1/15)	0 (0/12)	31 (14/40)	29 (10/26)	31 (12/39)	0.89	<0.01	0.96
Mastitis per cow per year ²	0.08	0.06	0	0.52	0.60	0.44	0.75	<0.01	0.12

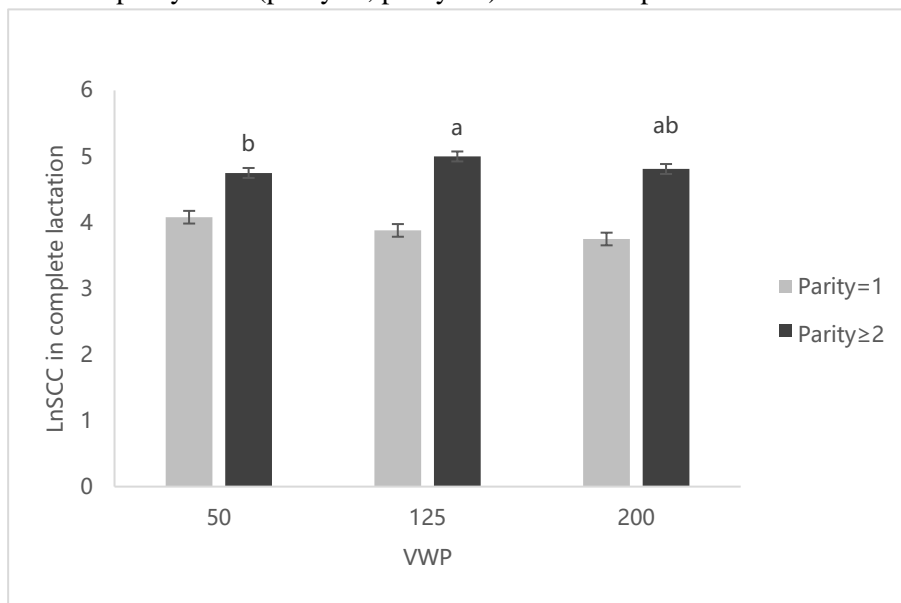
9 ¹P-values for % of cases are derived from the GLIMMIX model and repeated from table 3

10 ²P-values for incidence of dry-off antibiotics and mastitis per year are based on three independent non-parametric comparisons, of parity class, treatment
 11 group, and the 6 parity*treatment groups. Letters indicate the difference between treatment groups of the same parity based on Wilcoxon multiple
 12 comparisons after the Kruskal-Wallis test.

13 ³P-values for % of cases are derived from the GLIMMIX model and repeated from table 2

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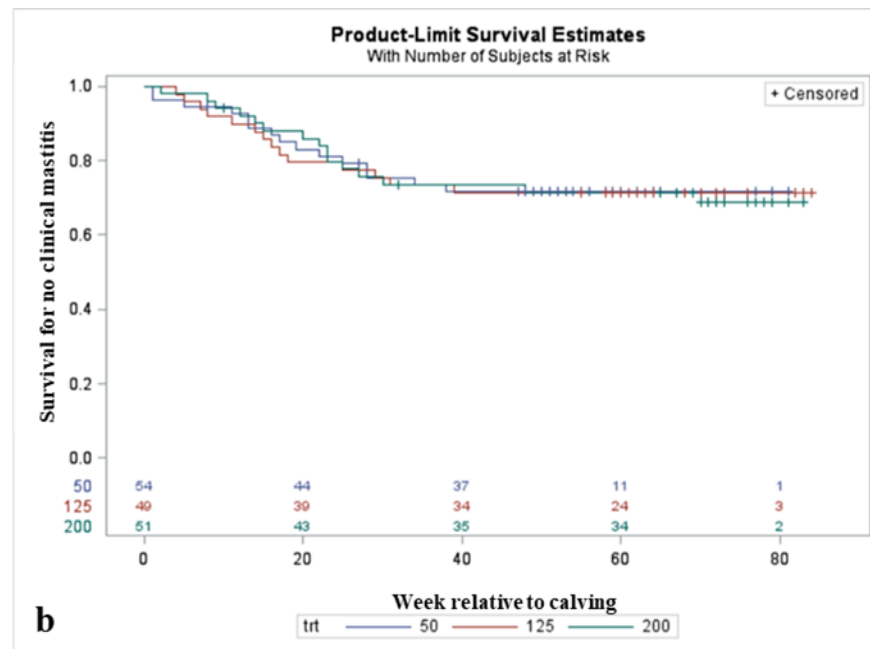
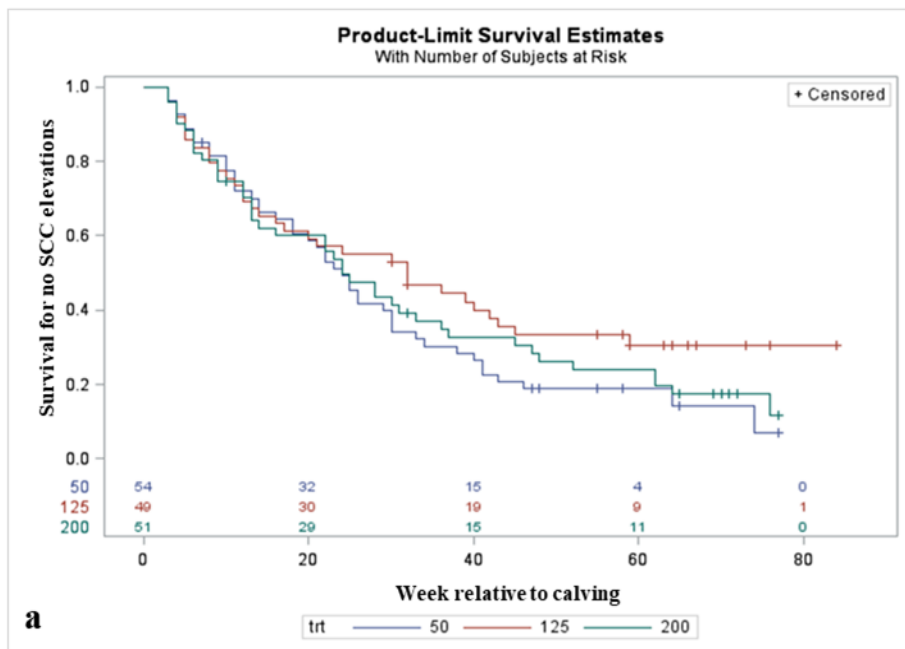
15 **Figure S1.** Somatic cell count (SCC; expressed as the natural logarithm of SCC) in cows with a 50 d, 125 d, and 200 d voluntary waiting period (VWP) and
16 different parity class (parity=1; parity \geq 2) in first complete lactation. Values represent LSMEANS \pm SEM.



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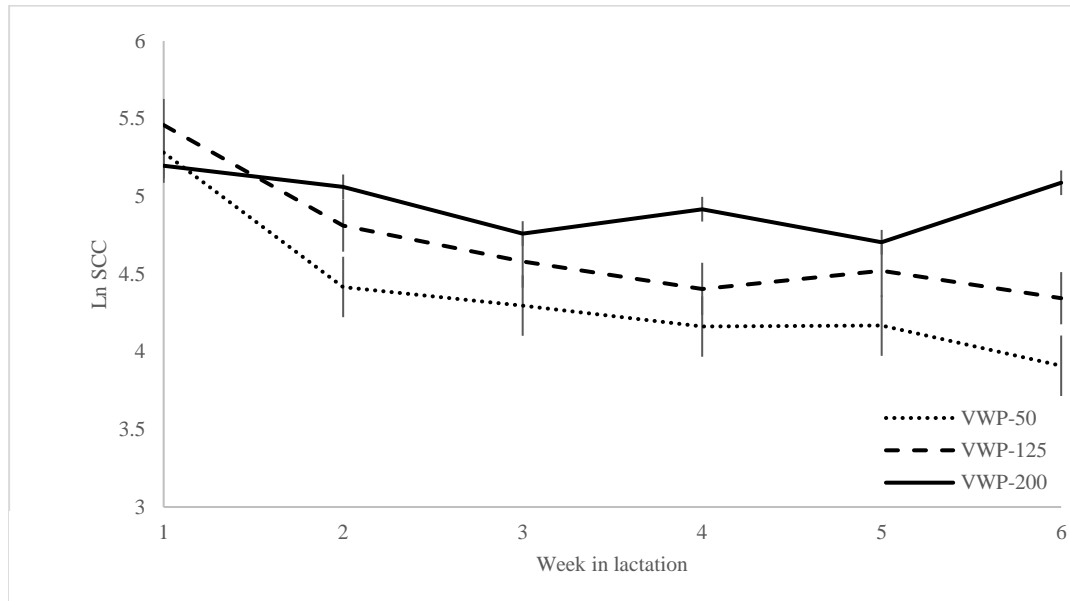
29 **Figure S2.** a-b: Kaplan-Meier survival curves showing (a) the time of survival for no elevation (i.e. SCC \geq 200,000 cells/mL after two previous weeks
 30 SCC < 200,000 cells/mL), and (b) the time of survival for no case of clinical mastitis in the first full lactation for cows with a 50 d, 125 d, and 200 d voluntary
 31 waiting period (VWP-50, VWP-125, and VWP-200, respectively).



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34 **Figure S3.** Development of somatic cell count (SCC; expressed as the natural logarithm of SCC) in cows with a 50 d, 125 d, and 200 d voluntary waiting
35 period (VWP-50, VWP-125, and VWP-200, respectively) in the first 6 weeks in subsequent lactation (b). Values represent LSMEANS±SEM.

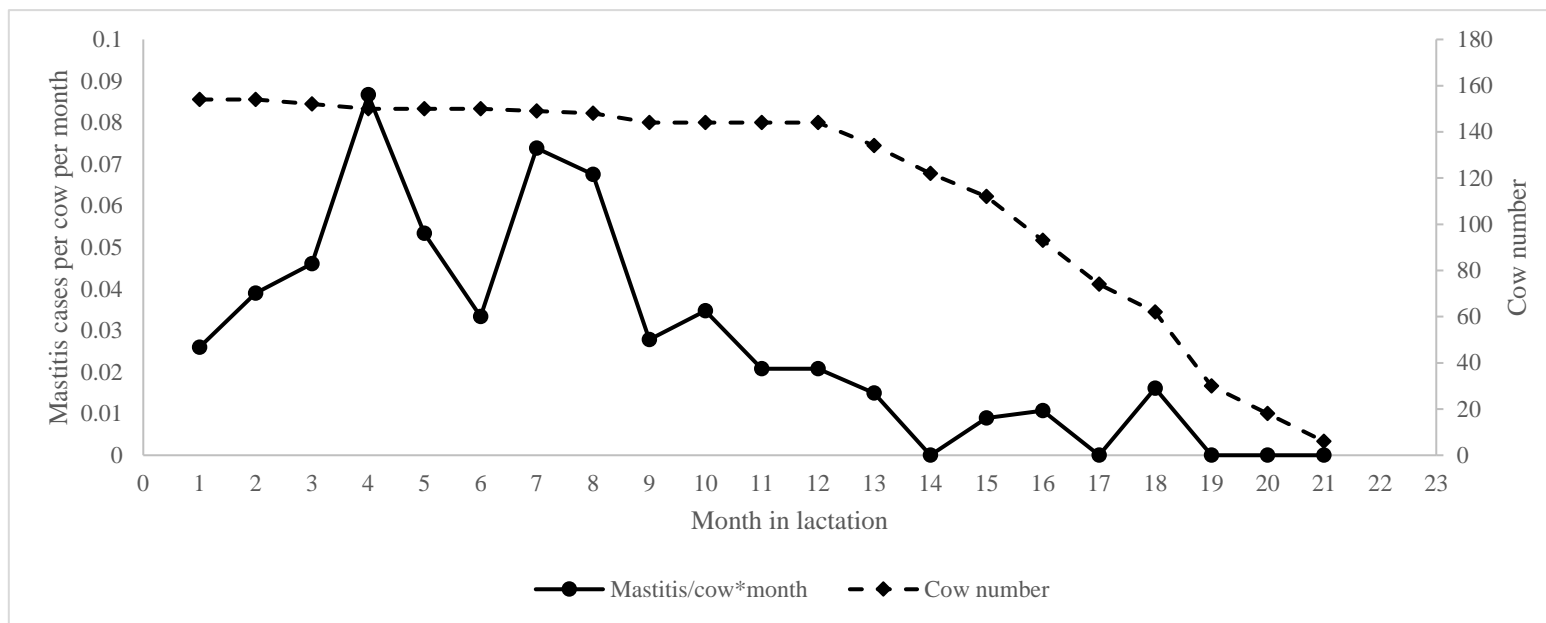


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39 **Figure S4:** Mastitis incidence per cow per month and number of cows in lactation.



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