

Table S1. Reproductive parameters and culling rate of control (group C) and lame cows with two presynchronization protocols (groups LC and LP).

Variable	Group					
	C	LC	LP	<i>p</i> -Value	LC + LP	<i>p</i> -Value
				C vs LC vs LP		C vs LC + LP
n	27	26	26		52	
Non-cycling (%)	11.1 ^{a,1}	38.5 ^b	34.6 ^b	0.05	36.5 ²	0.02
Presynchronization success (%)	81.5	65.4	76.9	0.38	71.2	0.32
Synchronization success (%)	92.6	84.6	92.3	0.65	88.5	0.71
Ovulation (%)	81.5	80.8	76.9	0.91	78.9	0.78
Non-cycling Ovulated (%)	100	70	77.7	0.55	73.7	0.44
FSCR (%)	37.0	26.9	16.0	0.23	21.6	0.14
Pregnant by 200d (%)	88.9	70.8	87.5	0.18	79.2	0.29
AIs/pregnancy (mean ± SE)	3.1 ± 0.4	2.8 ± 0.5	3.0 ± 0.5	0.87	2.9 ± 0.3	0.75
Days open (median)	123	114	111	0.95	112	0.94
Culled (%)	0 ^{a,1}	23.1 ^b	19.2 ^b	0.03	21.2 ²	0.01

^{a,b} Different letters denote statistical differences between the groups Control, Lame Control and Lame Progesterone ($p < 0.05$);

^{1,2} Different numbers denote statistical differences between the groups Control and all Lame (LC + LP) ($p < 0.05$)

Table S2. Reproductive parameters and culling rate of cows with elevated β -hydroxybutyric acid (BHBA+) and non-esterified fatty acids (NEFA+) during the study period.

Variable	Group					
	BHBA-	BHBA+	<i>p</i> -Value BHBA	NEFA-	NEFA+	<i>p</i> -Value NEFA
n	72	7		43	36	
Non-cycling (%)	27.8	28.6	0.96	27.9	27.8	0.99
Presynchronization success (%)	73.6	85.7	0.48	72.1	77.8	0.56
Synchronization success (%)	90.3	85.7	0.70	88.4	91.7	0.63
Ovulation (%)	79.2	85.7	0.68	79.1	80.6	0.87
Non-cycling Ovulated (%)	80.0	50.0	0.41	83.3	70.0	0.62
FSCR (%)	26.8	28.6	0.91	27.9	25.7	0.83
Pregnant by 200d (%)	83.8	71.4	0.60	82.9	82.4	0.95
AIs/pregnancy (mean \pm SE)	2.9 \pm 0.3	3.6 \pm 1.1	0.53	3.2 \pm 0.4	2.7 \pm 0.4	0.44
Days open (median)	112	134	0.40	115	109	0.76
Culled (%)	15.3	0	0.58	14.0	13.9	0.99

Table S3. Reproductive parameters and culling rate of cows with moderate or marked lameness and with lesions due to claw horn disruptions (CHDL) or infectious diseases (ID).

Variable	Group			Group		
	MODERATE	MARKED	<i>p</i> -Value	CHDL	ID	<i>p</i> -Value
n	16	36		37	15	
Non-cycling (%)	25.0	41.7	0.25	40.5	26.7	0.35
Presynchronization success (%)	75.0	69.4	0.68	64.9	86.7	0.12
Synchronization success (%)	93.8	86.1	0.65	83.8	100	0.10
Ovulation (%)	81.3	77.8	1.0	73.0	93.3	0.10
Non-cycling Ovulated (%)	75.0	73.3	1.0	66.7	100.0	0.53
FSCR (%)	25.0	20.0	0.72	13.9 ¹	40.0 ²	0.04
Pregnant by 200d (%)	81.3	78.1	1.0	73.5	92.9	0.13
AIs/pregnancy (mean ± SE)	3.0 ± 0.5	2.8 ± 0.5	0.38	3.0 ± 0.4	2.6 ± 0.6	0.40
Days open (median)	115	111	0.84	114	110	0.33
Culled (%)	0 ^a	30.6 ^b	0.01	21.6	20.0	0.90

^{a, b} Different letters denote statistical differences between the groups of moderate and severe lameness ($p < 0.05$)

^{1, 2} Different numbers denote statistical differences between the groups with Claw Horn Disruption Lesions (CHDL) and Infectious Diseases (ID) ($p < 0.05$)