

**Supplementary Table 1.** Herd characteristics, facilities, and general management for six herds participating in the experiment

	Herd					
	A	B	C	D	E	F
Milking cows	2,425	1,761	1,481	2,575	1,320	1,329
Heifer rearing	Off-site	Off- and on-site	On-site	Off-site	On-site	Off and on-site
Age at first calving (mo.)	21.7± 1.1	22.2 ± 1.1	23.0 ± 0.9	22.5 ± 1.2	21.7 ± 0.9	24.5 ± 1.6
Facilities for lactating cows						
No. stall rows per pen	3	3	3	3	2	3 or 4
Stall bedding type	Sand	Dry manure solids	Sand or sawdust	Dry manure solids bedded mattress	Sand bedded mattress	Water mattress with fiber paper
Heat abatement (fans and sprinklers)	Yes	Yes	Yes	Yes	Yes	Yes
Reproductive management						
Primary estrus detection method <sup>1</sup>	Visual	AEDS	Visual	Visual	Visual	AEDS
Estrus detection aid <sup>1</sup>	-	-	AEDS	AEDS	-	-
Confirmation of pregnancy (d after AI)	63 ± 3	59 ± 3	59 ± 3	63 ± 3	69 ± 3	63 ± 3
Milk production (kg)						
All cows average daily milk production (kg)	39.0	41	40	39	38	40
M305 <sup>2</sup> cows enrolled (n)	9,835 (538)	10,167 (533)	10,094 (354)	9,470 (544)	9,966 (396)	9,696 (351)
M120 <sup>3</sup> cows enrolled (n)	4,023 (294)	4,415 (413)	4,123 (344)	4,043 (150)	4,264 (342)	4,093 (277)

<sup>1</sup>AEDS = automated estrus detection system.<sup>2</sup>M305 = predicted milk production for 305 d of lactation.<sup>3</sup>M120 = Cumulative milk production up to 120 d of lactation. 30 d average based on monthly milk test data.