

Supplementary material

Table S1. Chemical composition of individual feed offered at No. 1 Dairy (once-a-day milking) during the sampling season in early, mid, and late lactations in the 2020-2021 milking season.

Lactation stage	Early					Mid			Late			
Item	Pasture	Herb-mix crop ¹	Maize silage	DDG ²	Tapioca	Pasture	Herb-mix crop	Pasture	Herb-mix crop	Tapioca	Corn gluten feed pallets	Lucerne baleage
CP ³ % of DM	23.1	18.0	9.0	31.9	5.2	20.4	16.9	23.0	20.4	4.6	17.2	30.7
NDF ⁴ % of DM	40.3	33.2	47.2	43.2	29.1	41.2	30.9	50.3	36.0	27.0	31.4	40.1
ADF ⁵ % of DM	21.2	21.2	33.6	9.6	21.6	20.9	18.8	27.2	21.2	23.3	19.8	32.3
Lipid % of DM	4.4	3.7	3.3	8.31	0.1	4.6	4.9	4.9	4.5	-	6.2	5.0
SSS ⁶ % of DM	13.4	13.1	28.3	12.8	40.7	15.1	11.1	9.8	5.6	35.4	7.0	1.0
ME ⁷ MJ ME/kg DM	13.0	11.9	9.8	7.9	11.3	11.8	13.0	9.3	10.8	10.8	7.8	10.9

¹ Herb-mix comprises chicory (*Cichorium intybus*), plantain (*Plantago lanceolata*), and red clover (*Trifolium pratense*); ² Dried distillers grain.

³ CP= crude protein; ⁴ NDF= neutral detergent fibre; ⁵ ADF= acid detergent fibre; ⁶ SSS= soluble sugars and starch; ⁷ ME= metabolisable energy; Baleage is dried forage, developed from the process of bailing the forage.

Table S2. Chemical composition individual feed offered at No. 4 Dairy (twice-a-day milking) during the sampling season in early, mid, and late lactations in the 2020-2021 milking season.

Lactation stage	Early				Mid				Late				
Item	Pasture	Hay	Maize silage	Soy meal	Pasture	Grass baleage	Maize	DDG ¹	Pasture	Straw	Grass baleage	Corn gluten feed pallet	Maize silage
CP ² % of DM	22.4	13.0	6.7	35.2	23.1	9.7	7.7	17.5	30.4	2.7	15.9	17.1	6.7
NDF ³ % of DM	43.0	66.2	51.8	21.0	44.7	62.7	38.3	30.1	44.9	86.4	46.3	35.9	47.4
ADF ⁴ % of DM	21.0	39.1	20.6	13.0	21.3	37.0	29.7	18.6	20.1	54.8	29.6	21.1	29.8
Lipid % of DM	5.0	0.8	3.3	1.4	4.1	2.3	3.9	6.2	5.9	1.0	4.0	5.7	3.2
SSS ⁵ % of DM	14.1	2.2	40.5	-	12.4	13.6	38.2	4.7	8.4	3.5	4.7	2.0	32.9
ME ⁶ MJ ME/kg DM	11.4	7.3	11.3	12.8	11.0	8.0	10.2	7.6	10.9	3.5	12.4	7.2	10.2

¹ Dried distillers grain.

² CP= crude protein; ³ NDF= neutral detergent fibre; ⁴ ADF= acid detergent fibre; ⁵ SSS= soluble sugars and starch; ⁶ ME= metabolisable energy; Baleage is dried forage, developed from the process of bailing the forage.

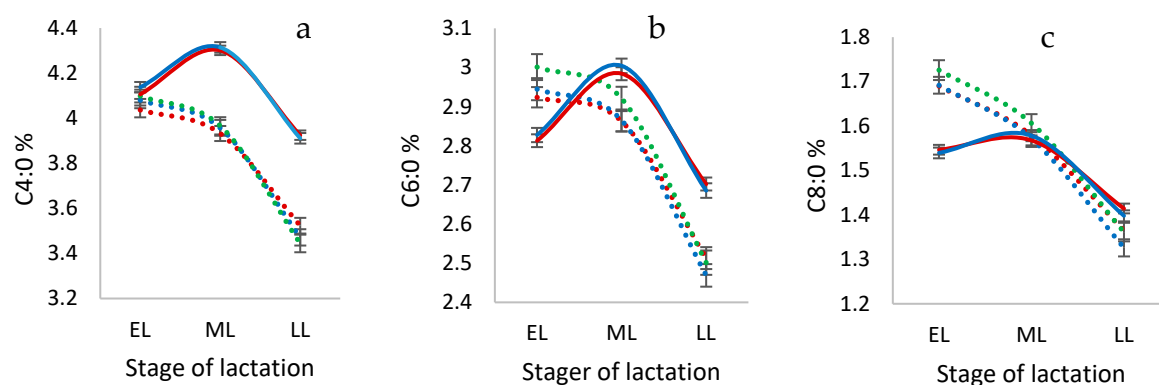


Figure S1. Concentrations of (a) C4:0, (b) C6:0 and (c) C8:0 in milk from Holstein-Friesian (....), Holstein-Friesian × Jersey (....) and Jersey (....) cows milked OAD and Holstein-Friesian (—) and Holstein-Friesian × Jersey (—) cows milked TAD during the production season 2020-2021. EL = early lactation (<90 days); ML = mid lactation (90-180 days); LL= late lactation (>180 days). The vertical bars show standard errors.

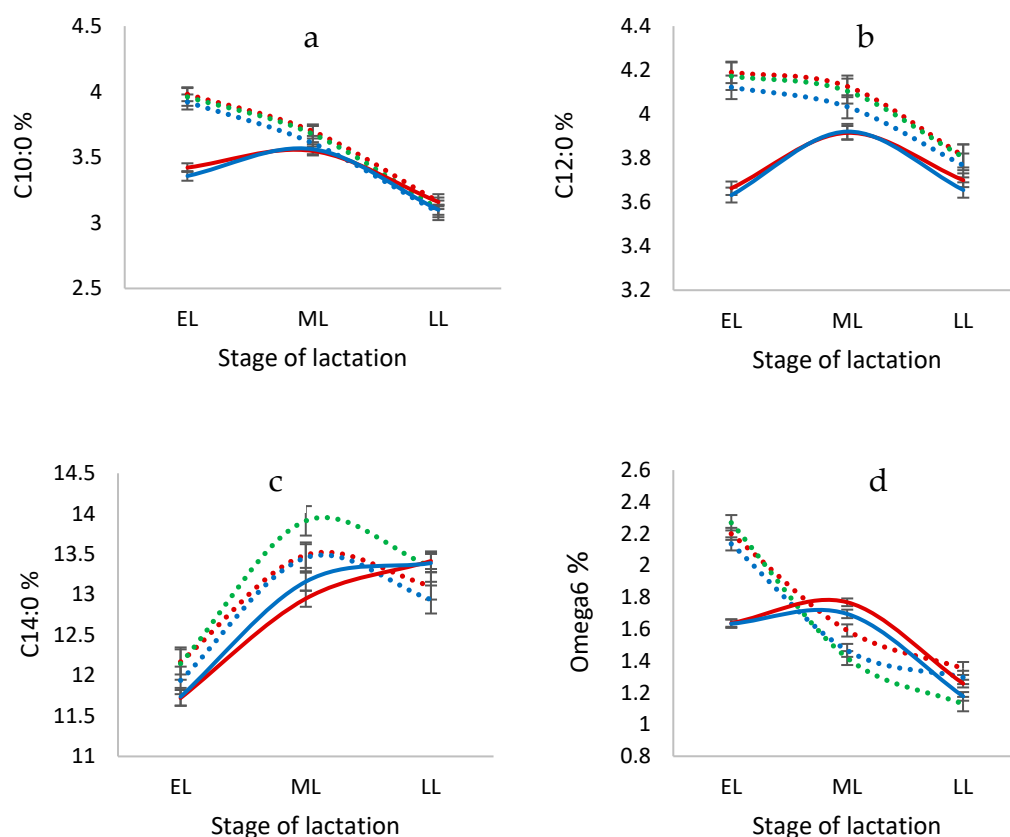


Figure S2. Concentrations of (a) C10:0, (b) C12:0 and (c) C14:0 (d) omega6 in milk from Holstein-Friesian (....), Holstein-Friesian × Jersey (....) and Jersey (....) cows milked OAD and Holstein-Friesian (—) and Holstein-Friesian × Jersey (—) cows milked TAD during the production season 2020-2021. EL = early lactation (<90 days); ML = mid lactation (90-180 days); LL= late lactation (>180 days). The vertical bars show standard errors.