1   **Supplementary table 1s.** List of analyses carried out for each type of sample, with relative test method

2

SAMPLE	ANALYSIS	TEST METHOD
Raw milk	Colony count at 30°C	UNI EN ISO 4833-1: 2013
	Salmonella spp.	ISO 6579:2002/Cor 1: 2004
	Listeria monocytogenes	UNI EN ISO 11290-1: 2005
	Campylobacter spp.	UNI EN ISO 10272-1: 2006
	Coagulase positive Staphylococci	ISO 6888-2: 1999/ Amd 1:2003
	pH, dry matter, fat, protein, lactose, ash	AOAC, 2004
Pasteurized milk	Colony count at 30°C	UNI EN ISO 4833-1: 2013
	Salmonella spp.	ISO 6579:2002/Cor 1: 2004
	Listeria monocytogenes	UNI EN ISO 11290-1: 2005
	Campylobacter spp.	UNI EN ISO 10272-1: 2006
	Coagulase positive Staphylococci	ISO 6888-2: 1999/ Amd 1:2003
	Enterobacteriaceae	ISO 21528-2: 2004a
	pH, dry matter, fat, protein, lactose, ash	AOAC, 2004
Stored pasteurized milk (refrigerated and frozen)	Colony count at 30°C	UNI EN ISO 4833-1: 2013
	Enterobacteriaceae	ISO 21528-2: 2004
	pH, dry matter, fat, protein, lactose, ash	AOAC, 2004
	Analysis of the fatty acid profile	Milk fat extraction (Rose-Gottlieb's method, AOAC, 1990); fatty acid methylation (Christie, 1982) and analysis by gaschromatography (conditions reported by Martini et al., 2015).

3

4   Association of Official Analytical Chemists (AOAC) 1990 Official Methods of Analysis, 15th edition. AOAC, Washington, DC, USA

5   Association of Official Analytical Chemists (AOAC) 2004 Official methods of analysis, 17th edition, AOAC, Arlington, VA, USAISO (International

6   Organization for Standardization) 1999 Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive

7   staphylococci (*Staphylococcus aureus* and other species) - Part 2: Technique using rabbit plasma fibrinogen agar medium. ISO 6888-2:1999/Amd.

8   1:2003. ISO, Geneva, Switzerland

9   Christie WW 1982. A simple procedure of rapid transmethylation of glycerolipids and cholesteryl esters. Journal of Lipid Research 23 1072–1075

10   ISO (International Organization for Standardization) 2002 Microbiology of food and animal feeding stuffs - Horizontal method for the detection of

11   *Salmonella* spp.. ISO 6579:2002/Cor 1: 2004. ISO, Geneva, Switzerland

12   ISO (International Organization for Standardization) 2004a Microbiology of food and animal feeding stuffs — Horizontal methods for the detection

13   and enumeration of *Enterobacteriaceae* — Part 2: Colony-count method. ISO 21528–2:2004. ISO, Geneva, Switzerland

14   ISO (International Organization for Standardization) 2005 Microbiology of food and animal feeding stuffs - Horizontal method for the detection and

15   enumeration of *Listeria monocytogenes* - Part 1: Detection Method. UNI EN ISO 11290-1: 2005. ISO, Geneva, Switzerland

16   ISO (International Organization for Standardization) 2006 Microbiology of food and animal feeding stuffs - Horizontal method for detection and

17   enumeration of *Campylobacter* spp. - Part 1: Detection method. UNI EN ISO 10272-1: 2006. ISO, Geneva, Switzerland

18   ISO (International Organization for Standardization) 2007 Microbiology of food and animal feeding stuffs – General requirements and guidance for

19   microbiological examinations. ISO 7218:2007. ISO, Geneva, Switzerland

20   ISO (International Organization for Standardization) 2013 Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of

21   microorganisms – Part 1: Colony-count at 30°C by the pour plate technique. UNI EN ISO 4833-1:2013. ISO, Geneva, Switzerland

22   Martini M, Altomonte I, Manica E & Salari F 2015 Changes in donkey milk lipids in relation to season and lactation. Journal of Food Composition and

23   Analysis 41 30-34

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28 **Supplementary table 2s.** Fatty acid composition (g/ 100g of total fatty acids) of pasteurized donkey milk stored for 21 days and 90 days, respectively.

29

| | Pasteurized donkey milk | | | | | Pasteurized donkey milk | | | | | | |
| Fatty acid methyl ester | Stored at +3°C(±2°C) | | | | | Stored at -20°C (±5°C) | | | | | | |
	D 1[1]	D 7	D 14	D 21	SEM	D 1	D 7	D 14	D 21	D 30	D 90	SEM
4:0	0.10	0.09	0.10	0.08	0.040	0.10	0.10	0.09	0.11	0.11	0.17	0.040
6:0	0.20	0.18	0.20	0.13	0.043	0.20B	0.16B	0.16B	0.19B	0.17B	0.31A	0.043
8:0	4.17	4.05	3.87	3.92	0.229	4.17	3.95	4.07	4.10	4.05	4.28	0.229
10:0	10.18	10.04	9.73	9.92	0.677	10.18	10.10	10.13	10.12	9.96	10.41	0.677
11:0	1.33	1.34	1.33	1.45	0.121	1.33	1.36	1.56	1.39	1.33	1.31	0.121
12:0	9.59	9.45	9.34	9.32	0.789	9.59	9.69	9.50	9.41	9.41	9.77	0.789
13:0	0.06	0.05	0.05	0.05	0.025	0.06	0.07	0.06	0.06	0.05	0.07	0.025
14:0	7.32	7.35	7.40	7.28	0.505	7.32B	7.45B	7.30B	7.30B	7.29B	7.67A	0.505
14:1	0.36	0.33	0.35	0.33	0.027	0.36B	0.33B	0.33B	0.34B	0.36B	0.39A	0.027
15:0	0.40	0.41	0.46	0.48	0.046	0.40	0.49	0.43	0.45	0.40	0.41	0.046
15:1	0.19	0.20	0.20	0.20	0.030	0.19	0.18	0.19	0.18	0.19	0.18	0.030
16:0	21.15	21.18	21.42	21.40	0.319	21.15	21.36	21.18	21.19	21.36	21.34	0.319
16:1	3.04	2.85	2.78	2.80	0.155	3.04	2.88	2.91	2.81	2.90	2.62	0.155
17:0	0.22	0.25	0.27	0.23	0.040	0.22	0.24	0.25	0.27	0.21	0.28	0.040
17:1	0.46	0.42	0.44	0.45	0.038	0.46	0.48	0.45	0.43	0.42	0.41	0.038
18:0	1.83	1.82	1.88	1.84	0.182	1.83	1.93	1.71	1.89	1.75	2.01	0.182
t9-18:1	0.04	0.04	0.03	0.03	0.009	0.04	0.03	0.04	0.04	0.04	0.03	0.009
t11-18:1	0.01	0.02	0.01	0.01	0.010	0.01b	0.01b	0.02b	0.01b	0.02b	0.03a	0.010
c9-18:1	16.99	16.83	16.68	17.25	1.080	16.99	16.80	17.11	16.91	17.32	15.97	1.080
c11-18:1	0.89	0.84	0.82	0.88	0.081	0.89	0.89	0.82	0.82	0.87	0.84	0.081
t9,12-18:2	0.04	0.05	0.04	0.07	0.040	0.04	0.05	0.04	0.07	0.06	0.03	0.040
c9,12-18:2	13.01	12.88	13.02	13.15	1.426	13.01a	12.83a	12.80a	13.12a	13.20a	11.83b	1.426
18:3n-3	7.10	7.80	8.36	7.25	0.749	7.10	7.31	7.37	7.51	7.42	7.74	0.749
18:3n-6	0.04	0.05	0.06	0.06	0.013	0.04	0.06	0.05	0.06	0.05	0.05	0.013

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20:0	0.02	0.03	0.03	0.03	0.014	0.02	0.03	0.03	0.02	0.04	0.02	0.014
c9, t11-18:2	0.02	0.01	0.02	0.03	0.013	0.02	0.02	0.01	0.02	0.03	0.02	0.013
20:1	0.19	0.22	0.19	0.19	0.043	0.19	0.18	0.18	0.19	0.19	0.22	0.043
21:0	0.29	0.33	0.20	0.22	0.093	0.29b	0.22b	0.20b	0.20b	0.20b	0.39a	0.093
20:2	0.02	0.01	0.01	0.01	0.008	0.02	0.01	0.01	0.01	0.01	0.03	0.008
20:3n-3	0.24	0.27	0.17	0.18	0.073	0.24b	0.16b	0.18b	0.17b	0.16b	0.34a	0.073
20:3n-6	0.05	0.05	0.07	0.06	0.026	0.05	0.05	0.06	0.06	0.04	0.06	0.026
22:0	0.02	0.03	0.02	0.02	0.014	0.02	0.02	0.03	0.03	0.02	0.04	0.014
22:1	0.04	0.02	0.05	0.04	0.021	0.04	0.02	0.06	0.04	0.05	0.03	0.021
20:4n-6	0.08	0.05	0.05	0.05	0.017	0.08	0.06	0.07	0.06	0.05	0.06	0.017
23:0	0.02	0.02	0.01	0.01	0.007	0.02	0.01	0.03	0.01	0.03	0.01	0.007
22:2	0.02	0.01	0.01	0.02	0.010	0.02	0.01	0.02	0.01	0.01	0.02	0.010
20:5	0.12	0.13	0.06	0.08	0.116	0.12	0.10	0.07	0.07	0.06	0.17	0.116
24:0	0.07	0.08	0.06	0.13	0.051	0.07	0.09	0.08	0.11	0.07	0.10	0.051
24:1	0.03	0.02	0.05	0.09	0.040	0.03	0.07	0.07	0.03	0.03	0.02	0.040
22:5	0.04	0.04	0.04	0.07	0.019	0.04	0.04	0.07	0.05	0.06	0.05	0.019
22:6	0.05	0.03	0.03	0.05	0.022	0.05	0.05	0.04	0.03	0.02	0.05	0.022
SCFA ($\leq$C10)[2]	14.24	14.37	13.91	14.04	0.920	14.24	14.30	14.45	14.53	14.28	14.75	0.920
MCFA($\geq$C11$\leq$C17)[3]	43.10	43.84	44.03	43.98	1.551	43.10	44.52	44.15	43.82	43.92	44.68	1.551
LCFA($\geq$C18)[4]	42.65	41.79	42.06	41.97	2.388	41.62	41.18	41.40	41.64	41.80	40.57	2.388
SFA[5]	55.55	56.74	56.38	56.52	2.575	56.65	57.24	56.80	56.84	56.44	58.04	2.575
MUFA[6]	22.21	21.78	21.59	22.27	1.141	22.17	21.88	22.20	21.86	22.37	21.99	1.141
PUFA[7]	21.08	21.48	22.04	21.22	0.487	21.18	20.88	21.00	21.30	21.19	19.96	0.487
UFA[8]/SFA	0.79	0.78	0.79	0.80	0.030	0.10	0.10	0.09	0.11	0.11	0.17	0.040
n-3/n-6	0.59	0.64	0.64	0.57	0.060	0.20B	0.16B	0.16B	0.19B	0.17B	0.31A	0.043

30   A,B: $P \leq 0.01$; a,b: $P \leq 0.05$

31   [1] D1, 7, 14, 21, 30, 90=number of days of storage

32   [2]SCFA (Short Chain Fatty Acids): ($\leq$ C10); [3]MCFA (Medium Chain Fatty Acids): ($\geq$C11$\leq$C17); [4]LCFA (Long Chain Fatty Acids): ($\geq$C18); [5]SFA

33   (Satured Fatty Acids);[6]MUFA (Monounsatured Fatty Acids); [7]PUFA (Polyunsatured Fatty Acids); [8]UFA (Unsaturated Fatty Acids)

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Fig 1. Sampling and analyses carried out for each type of sample

Raw donkey milk

Raw donkey milk +3°C

Colony count at 30°C
Salmonella spp.
Listeria monocytogenes
Campylobacter spp.
Coagulase positive Staphylococci
pH, dry matter, fat, protein, lactose, ash

Raw donkey milk

Holder type Pasteurization (65°C for 30 minutes)

Pasteurized donkey milk

Colony count at 30°C
Salmonella spp.
Listeria monocytogenes
Campylobacter spp.
Coagulase positive Staphylococci
Enterobacteriaceae
pH, dry matter, fat, protein, lactose, ash

Refrigerated aliquots (+3°C±2°C)

Freezed aliquots

Day 21
Day 14
Day 7
Day 1
Pasteurized donkey milk

Colony count at 30°C
Enterobacteriaceae
pH, dry matter, fat, protein, lactose, ash
Fatty acid profile

Day 90
Day 30
Day 21
Day 14
Day 7
Day 1
Pasteurized donkey milk

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