

Particle size distribution of forages and mixed rations, and their relationship with ration variability and performance of UK dairy herds

Article

Supplemental Material

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Supplementary Tables

Table S1. Particle size distribution of rations fed as TMR (n = 28) or PMR (n = 22) on 50 dairy herds.

Fractions ¹ (mm)	PS distribution (% DM)		SED	P value
	TMR	PMR		
>60	0.1	0.1	0.08	0.14
44-60	3.8	11.8	2.41	0.002
26.9-44	20.7	32.8	3.99	0.004
19-26.9	3.8	5.1	0.95	0.16
8-19	39.1	29.6	3.57	0.01
4-8	14.1	8.9	1.42	< 0.001
<4	18.4	11.7	2.62	0.014
X _m ²	14.0	26.5	2.98	< 0.001

¹Rations were separated into 7 fractions; >60, 44-60, 26.9-44, 19-26.9, 8-19, 4-8 and <4 mm.

²Geometric mean particle size.

Table S2. Particle size distribution of dried 0hMR (n = 50), 4hMR (n = 50), RefMR (n = 33), grass silage (n = 50) and maize silage (n = 34) on 50 dairy herds.

Fractions ¹ (mm)	Particle size distribution (% DM ± SD)				
	0hMR	4hMR	RefMR	GS	MS
>26.9	16.2 ± 16.31	17.0 ± 16.42	25.6 ± 19.95	45.7 ± 17.83	-
19-26.9	3.5 ± 1.88	3.7 ± 3.06	4.0 ± 2.06	2.9 ± 1.25	4.3 ± 2.17
8-19	38.0 ± 10.03	38.2 ± 9.11	36.4 ± 10.77	34.4 ± 11.79	52.6 ± 10.53
4-8	21.2 ± 6.68	20.4 ± 6.21	18.3 ± 7.23	10.1 ± 4.02	28.8 ± 7.26
<4	21.1 ± 9.24	20.6 ± 9.20	15.8 ± 7.46	6.9 ± 3.61	14.3 ± 6.08
SED	1.53	1.53	1.88	1.41	1.77
P value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

¹Rations were separated into 5 fractions; >26.9, 19-26.9, 8-19, 4-8 and <4 mm.

Table S3. The particle size distribution (%DM) of North American rations.

Fractions (mm)	Sova <i>et al.</i> (2013)	Endres and Espejjo (2010)	DeVries <i>et al.</i> (2011)	Hosseinkhan <i>i et al.</i> (2008)	Miller-Cushon and DeVries (2009)	White <i>et al.</i> (2017)
>19	19.8	10	18.4	18.1	8.8	11.4
8-19	34.3	41.5	33.6	32.3	46.6	31.9
4-8	35.5	47.6	48.0	49.6	44.5	56.7
<4	10.5	-	-	-	-	-