



Milk production, feed sorting behaviour and social interactions in the feeding area in cows fed TMR or compact TMR

CONCLUSIONS

Feeding mid-lactation dairy cows a compact TMR resulted in:

- · Fewer aggressive interactions in the feeding area
- Decreased level of sorting behaviours
- · Equal milk yield and milk composition
- ... compared with feeding a traditional TMR

COMPACT TMR

To make a compact TMR water is added to the concentrate for a soaking process. Forage is added and the TMR is mixed for about 30-40 minutes. The idea with soaking the concentrate is to make the small starchy particles stick better to the longer forage particles in the mix. The aim with feeding the compact TMR is to make it harder for the cows to sort certain particles out of the mix.



When cows can sort the diet, aggressive interactions may increase.

Compact TMR



Traditional TMR

A compact TMR has a dry matter content of around 37 % and the composition is more homogenous compared with a traditional TMR.

SORTING BEHAVIOUR

Feeding a compact TMR resulted in less sorting behavior compared with a traditional TMR. Mean distribution of particle sizes (in fresh weight at feeding) >19 mm, 8 to19 mm, and <8 mm were in %: 6, 64 and 30 in compact TMR and 31, 34 and 34 in traditional TMR.

Feed sorting behaviours in lactating dairy cows fed a compact TMR or a traditional TMR at a feed bunk. Presented as LSmeans and standard error of the mean (SEM)					
Number of sorting behaviours per hour	Compact TMR	Traditional TMR	SEM	P-value	
Total	16.9	42.6	4.74	0.002	

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Digging	6.8	23.4	3.13	0.003
Eating from underneath	1.0	10.1	1.13	< 0.00



When sorting occurs low ranked cows may have to wait and thus get a less nutrient dense diet.

AGGRESSIVE INTERACTIONS

The number of aggressive interactions at the feed bunk where fewer when the cows where fed a compact TMR compared with a traditional TMR.

Number of aggressive interactions in lactating dairy cows fed a compact TMR or a traditional TMR at a feed bunk. Presented as LSmeans and standard error of the mean (SEM)

Compact TMR	Traditional TMR	SEM	P-value
8.5	14.8	1.25	0.004
2.0	3.9	0.58	0.041
2.5	5.6	0.60	0.003
	Compact TMR 8.5 2.0 2.5	Compact TMRTraditional TMR8.514.82.03.92.55.6	Compact TMR Traditional TMR SEM 8.5 14.8 1.25 2.0 3.9 0.58 2.5 5.6 0.60

MILK PRODUCTION

There were no differences in milk production or milk composition between treatments.

Daily milk yield, energy corrected milk yield (ECM) and milk composition in cows fed a compact TMR or a traditional TMR at a feed bunk. Presented as LSmeans and standard error of the mean (SEM)

	Compact TMR	Traditional TMR	SEM	P-value
/lilk yield, kg	32.9	33.4	0.78	0.10
CM*, kg	31.4	31.8	0.82	0.47
at (%)	3.69	3.66	0.08	0.72
Protein (%)	3.36	3.39	0.04	0.56
actose (%)	4.44	4.50	0.04	0.24

PRACTICAL IMPLICATIONS

The reduced sorting behaviours in cows fed the compact TMR possibly resulted in a feed composition that remained even over time. Therefore, it could be speculated that the cows were less prone to compete for new feed and thereby the number of aggressive interactions became fewer. Feeding a compact TMR seems to give the cows equal conditions to eat a well balanced diet and it is possible that it may improve the welfare, especially for low ranked cows.

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