

THE EFFECTS OF FEED DUST ON THE INTAKE AND ACCEPTABILITY
OF PELLETTED DIETS BY SHEEP

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"Feed dust" is defined by the stock-feed industry as all of the material resulting from the disintegration of pelleted feed not sufficiently durable to withstand handling. It is widely claimed in the livestock export industry that sheep find "feed dust" less acceptable than unbroken pellets, waste more and eat less of it. A preliminary investigation of these claims is reported.

In three experiments, Merino wethers (new source/experiment) were randomly allocated within liveweight strata to groups of three and fed pelleted diets either unbroken (control) or hammermilled through a 15mm screen (milled). The pellets tested were unused diets from previous lot-feeding experiments. Ad libitum intake was recorded over days 1-4 in Experiments 1 and 2 and on day 1 of Experiment 3. Meal size in the first hour of feeding following a 22 hour fast was recorded on day 8 of restricted feeding (1.0kg feed/head) in Experiments 2 and 3. In Experiment 1, each diet was also offered to sheep in both forms in a free choice paired feeding test conducted over two days.

Table 1 Mean intakes of control (unbroken) and milled diets by sheep

Description of diet	Ad libitum intake		Meal size	
	Control	Milled	Control	Milled
	(kg/day)		(kg)	
Experiment 1 (5 replicates/treatment)				
1. 25% barley ^A , 68% hay	1.33	1.33		
2. 50% barley, 43% hay	1.10	1.24		
Experiment 2 (4 replicates/treatment)				
1. 92% hay, 10mm screen ^B	2.08	2.01	0.65 ^a	0.60 ^b
2. 92% hay, 6mm screen	1.98	2.06	0.64 ^a	0.57 ^b
3. 92% hay, 2.4mm screen	1.95	2.03	0.65 ^a	0.53 ^b
Experiment 3 (6 replicates/treatment)				
1. 46% barley ^A , 30% rice hulls	1.55	1.62	0.83	0.82

Means with different superscripts differ significantly ($P < 0.05$).

^ABarley was coarsely rolled prior to pelleting. ^BScreen size used to mill hay prior to pelleting.

Re-milling of the pellets did not reduce feed intake in any of the experiments; it reduced initial meal size following fasting by around 10% ($P < 0.05$) in Experiment 2 but had no effect in Experiment 3. Sheep showed a slight preference for the re-milled feed in Experiment 1 (Table 1). No residues were left when the feeds were offered at 1000g/head. In Exp 1 (choice), 61.3 and 69.8% respectively of the total intake of sheep fed diets 1 and 2 consisted of milled pellets. These results indicate that pellet disintegration resulting in "feed dust" does not necessarily have an adverse effect on feed intake, but it is stressed that the wider application of these results is not known. Further research needs to be directed to pellets containing dustier (i.e. powdery) ingredients than used here, such as finely ground cereal grains and dusty by-products.

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