BUFFERS IN PELLETED DIETS FOR EXPORT LIVE WETHERS

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Dietary limestone and sodium bicarbonate have beneficial effects on sheep being adapted to high grain diets (Ha et al 1983) and both of these compounds are commonly included in the moderate grain pelleted diets fed to export wethers during sea shipment. These practices were evaluated in circumstances mimicking those found in the export industry.

Five pelleted diets, each replicated four times and consisting of 60% wheat and nil, 2 and 4% CaC03 and 1.5 and 3.0% NaHC03 were fed at 900 g/head daily and residues removed, to 20 groups of 18 export type Merino wethers. The sheep were introduced stepwise to the diets, replacing 1 kg hay, over 5 days in outdoor yards and then transferred indoors (day 1) for 20 days of feeding. The indoor pens contained 0.33 m^2 floor area and 6 cm trough length/head. Feeding behaviour was recorded over 24 hours at 6 minute intervals (10 minutes outdoors) each week.

TABLE 1 Deaths, mean liveweight change, mean feed dry matter intake (DMI) during days l-7 indoors and non feeders during outdoor adaptation and during week 3 indoors of sheep fed pelleted diets with buffers

Diet	Deaths	Mean liveweight change (kg)	Mean DMI: days 1–7 indoors (kg/day)	Non-feeders Outdoors	Non-feeders Indoors (Week 3)
1. Control	1	-5.23a	0.365a	2	7
2. 2% $CaCO_3$	1	-4.41ab	0.490a	0	4
3. 4% $CaCO_3$	1	-4.25ab	0.482a	1	3
4. 1.5% $NaHCO_3$	1	-3.68bc	0.487a	2	5
5. 3.0% $NaHCO_3$	0	-2.71c	0.683b	4	2

Values in columns with different letters differ significantly, ($P<0.05$).

Sodium bicarbonate reduced liveweight loss while limestone had no effect. Intake of pellets fell dramatically during the initial days of indoor feeding (Table 1) and digestive disturbances appeared to contribute to this effect. Sheep fed 3% NaHC03 and control diets resumed their full appetites on days 7 and 15 respectively. Other groups were intermediate.

Of 9 sheep (2.5%) that did not eat at all and 37 sheep (10.1%) that ate poorly (1 or 2 meals only) while outdoors, only 1 and 4 of these respectively did not resume eating once moved indoors. Conversely of 10 sheep that did not eat during indoor feeding, only 1 did not eat and 2 ate only 1 or 2 meals during outdoors adaptation. This suggests there may be little value in attempting to remove non-feeding sheep based on performance during outdoor adaptation periods of less than one week.

It is concluded that sodium bicarbonate may have a role in the feeding of export live sheep where pelleted moderate grain diets are being used.

HA, J.K., EMERICK, R.J. and EMBRY, L.B. (1983). J. Anim. Sci. 56: 698.

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