

FAILURE OF ELECTRICAL PROMPTING TO IMPROVE SHEEP MOVEMENT IN SINGLE FILE RACES

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Many handling procedures require sheep to be delivered one at a time for treatment. This is usually achieved by running sheep in single file through a race. A consistent problem with such races is that sheep often fail to move forward voluntarily. Some farmers have attempted to overcome this problem by adapting electric fence units so that an electric shock can be applied to sheep that fail to move forward. Inconclusive results from these attempts indicated that careful and controlled testing of this concept was required (McCutchan and Freeman 1991).

We evaluated the effect of a mild electrical stimulus as a prompt for sheep movement in a single file race. The most effective delivery method was found to be to the hock region of a sheep through a movable, spring-mounted insulated arm with a metal strip on its leading edge. The arm was positioned 200 mm above floor level at either the start, middle or end of a 4.5 m race. Groups of 20 adult Merino wethers were run through the race in 20 trials. For 10 trials the metal strip was electrified by connection to a 4.5 nF capacitor charged to 3 kV, giving a stored energy of about 0.02 J. This produced a mild shock, sufficient to surprise the sheep, but not to cause pain, and was equivalent to about 1% of the stored energy used in commercial electric fence energisers. In 10 control trials the metal strip was unelectrified. Sheep left the race individually through a sliding exit gate which was opened quietly every 20 s.

Sheep movement was not influenced by the electrical stimulus. Comparisons between the electrified and unelectrified treatments showed no significant differences (all $P > 0.05$) in the mean number of sheep exiting the race directly (16.4 v. 16.2), reversing backwards along the race (2.1 v. 1.6), or requiring human force to move forwards (2.3 v. 3.5). Of the 38 sheep that received shocks (Table 1), 29% responded by moving forwards, 13% did not or could not move, and 58% were forced backwards or moved backwards.

Table 1. Responses of sheep receiving shocks in a single file race

Behaviour	Number of observations	Percentage of total
Sheep moved forward into vacant space	8	21.1
Sheep sat on bar, then moved forward	3	7.9
Sheep unable to move, blocked by other sheep	4	10.5
Sheep did not move	1	2.6
Sheep forced backwards by sheep in front	15	39.5
Sheep sat on bar, then moved backwards	1	2.6
Sheep reversed backwards	6	15.8
Total	38	100.0

The application of an electrical stimulus did not enhance sheep flow in the single file race. Sheep responded to the stimulus in an inconsistent and unpredictable manner. We conclude that electrical prompting is of no value in improving sheep delivery to a treatment point in single file races.

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