

## MEASUREMENT OF TEMPERAMENT/FEARFULNESS OF LAMBS WITHOUT THE USE OF SPECIALIST EQUIPMENT

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Temperament scoring and flight speed have been used in cattle as a predictor of growth (Graham *et al.* 2001) and meat quality (Voisinet *et al.* 1997), and it is possible that similar relationships may exist for sheep. Several tests utilising specialist equipment such as a flight speed recorder, an isolation box (Blache and Ferguson 2005) or specially contrived situations (Murphy 1999) have been developed to assess temperament or fearfulness in sheep. Commercially, it would be useful to develop a measure that can be recorded during routine management activities and does not use specialist equipment. This paper describes an objective measurement, recorded while weighing prime lambs, that may be a repeatable measure of temperament or fearfulness.

Poll Dorset x Merino first cross lambs (n=224; 214-258 days of age) and Poll Dorset x Border Leicester x Merino second cross lambs (n=66; 158-194 days of age) born in 2004 were weighed in a crate with solid sides and a partially enclosed top and an outwardly opening door (0.8 m high x 1.12 m long, and 0.4 m wide at top, 0.28 m wide at base). The time taken for the animal to become stationary while being weighed was recorded with a hand held stop watch (Settling Time). "Stationary" was defined as feet not moving and no significant movement of the head or body for a period of 5 seconds. A cut-off point of 120 seconds was used as the upper limit for an animal to become stationary and non-stationary sheep were released at that time. This procedure was repeated the following day, although liveweights were not recorded on the second occasion. The effect of day and genotype of lamb on Settling Time was analysed by Proc Mixed (SAS v8.0). Data for Settling Time were log transformed for analysis and results presented are back transformed least square means. A Pearson correlation coefficient was used to assess the repeatability of Settling Time for individual lambs on the 2 days.

First cross lambs settled significantly faster than the second cross lambs (P<0.0001) and both breed crosses settled faster on the second day of assessment than on the first day (P< 0.0001; Table 1). There was also a significant correlation between Settling Time measured on sequential days (r=0.394; P<0.0001) but there was a wide variation around the line of best fit (Figure 1).

**Table 1. Settling Time in seconds of first and second cross lambs measured on 2 consecutive days**

Day no.	Settling Time		
	1	2	SE
First Cross	22.9	17.1	1.04
Second Cross	31.3	23.8	1.09

Settling Time varied widely between individual lambs and with breed crosses, suggesting that it is worth scrutinising more closely as an indicator of fearfulness. However, the wide variation in individual times that animals took to settle across days indicates that it may not be sufficiently accurate. As there was a significant decline in mean Settling Time between day 1 and day 2, it may be that

the poor repeatability was due to differences in habituation to handling and the test should be re-evaluated in animals handled a number of times before testing or alternatively with a number of days between tests. Therefore, further analysis is required to determine whether Settling Time is a useful measure of fearfulness/temperament and also if it is related to other production traits

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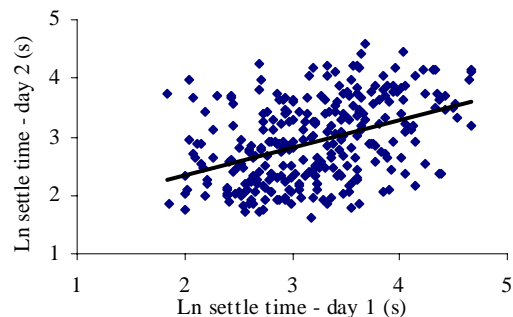
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**Figure 1. Relationship between settling time (ln transformed) of first and second cross lambs measured on 2 consecutive days (day 1 and day 2.)**