

## **Can Merino sheep be trained to respond to visual or auditory cues?**

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Over many years there has been limited success in encouraging sheep to use shelter. The aim of this study was to determine if sheep could be trained to a visual and/or auditory cue to attract them to shelter. Forty-four fine wool Merino ewes were obtained at eight months of age. The ewes were gentled and introduced to lupin grain prior to randomly dividing them into four groups (n=11): auditory, visual, visual+auditory and control (not trained). The ewes were acclimatized to training procedures by introducing them to the training area as a group and as individual confidence grew the number of animals were reduced until the ewes were comfortable to be in the arena by themselves. Animals were trained in a 23.9 x 21.5 meter square outdoor arena to approach either the auditory, visual or visual+auditory stimulus for a food reward. After eight days of individual training the ewes were tested in a 'T' shaped maze without a food reward. The proportion of correct T-maze choices for each group was: auditory 36% ( $\pm$  SEM 0.08), visual 41% ( $\pm$  SEM 0.04) and visual+auditory 58% ( $\pm$  SEM 0.04). The mean decision time in the T-maze was: auditory 40 seconds, visual 36 seconds and visual+auditory 29 seconds. The ewes learned to approach the stimulus within 5-6 trials and demonstrated long-term (reference) memory retention for over 100 days without reinforcement. Training significantly improved animal ability to choose the stimulus. The controls received no training and made no choice during the 60 second T-maze test. The time taken by the trained animals to make a choice decreased as their proportion of correct choices increased ( $p < 0.01$ ,  $R^2 = 0.75$ ) suggesting memory assurance in making the choice. This study indicates sheep can be trained to approach a visual/auditory stimulus that could potentially be used to attract them to shelter.

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