Industry's view on the relevance of potential risk factors on farms with good or poor welfare

Natarsha Williams and coauthors: Hemsworth L., Chaplin S., Shephard R., and Fisher A.

This is an invited presentation, based on the published paper '*Are there risk factors commonly observed on Australian farms where the welfare of livestock is poor?'* (2024, Williams, N., Hemsworth, L., Chaplin, S., Shephard, R. and Fisher, A. Animal Welfare, Sep. 16;33:e34). This study aimed to ask industry what factors they thought might be more commonly observed on farms where the welfare of the livestock is poor compared to farms where the welfare is good. This study was part of a PhD that was focused on developing an animal welfare risk assessment tool (AWRAT) that could be used to identify situations where livestock are at risk of poor welfare, in extensive farming systems in Victoria, Australia.

Veterinarians, stock agents, farm consultants, extension and animal welfare officers were asked to rate the likelihood of observing 99 factors about the farm, farmer, animals, management/husbandry and nutrition on a sliding scale for either farms with high (HLWF) or low (LLWF) livestock welfare based on their likely experience. Sixty-five percent of the 141 responses were for LLWF.

Each response on the sliding scale was converted to a number from 0-100 by the survey platform. A Krukal-Wallis test was used to compare the individual ratings for each factor between HLWF and LLWF surveys. Six percent of the factors did not have significantly different ratings ($p \leq 0.05$) for HLWF and LLWF and were considered not suitable for identifying properties where livestock were at risk of poor welfare.

The median rating for each factor was calculated for the HLWF and LLWF surveys. For LLWF surveys, 50 factors had median ratings outside the key range (<26 or >74) and were considered not to be potential risk factors for the AWRAT. Further risk factors were discarded if they were: difficult to verify, ambiguous, only applicable to some farming systems, very similar to other factors, correlated to another variable or rated significantly differently between participants from different industries, or the north and south of Australia (as defined by this study).

A final list of 18 risk factors was identified, with nine being about nutrition, including its quantity, adequacy, suitability, and management, and access to pasture and supplementation. Three factors were about infrastructure relating to fencing, water and feed facilities. Other factors included timely treatment and euthanasia of sick and injured animals, management of males, increased mortalities and removing dead animals from paddocks.

These factors have also been reported to be observed on farms where there was poor livestock welfare, either in the scientific literature, or in a review of almost 40 years of animal welfare investigation notes from Agriculture Victoria, undertaken as part of the same PhD (Analysis of livestock welfare investigations in extensive farming systems in Victoria, Australia. (2024, Williams N., Hemsworth L., Chaplin S., Shephard R. and Fisher A. Australian Veterinary Journal 102{9}).

In a subsequent study, '*Can an animal welfare risk assessment tool identify livestock at risk of poor welfare outcomes?'* (2024, Williams N., Chaplin S., Hemsworth L., Shephard R. and Fisher A. Animal Welfare, Sep. 16;33:e32), the AWRAT was used to assess farms after visits for animal welfare and non-animal welfare related reasons. Results indicated that the AWRAT was a good

predictor of farms where livestock were at risk of poor welfare. Further work is required including a longitudinal study of incidents of poor animal welfare and reoffending over time.