

# RAW ANIMAL HEALTH



4<sup>th</sup> February 2019

Submitter: Adrian Baker BVSc MACVSc, AAV 745

The live (sheep) trade has responded to community and regulator concerns following recent publicity and obviously needs to continue to do so to re-establish public confidence and 'social licence'. Unfortunately the veracity of claims made during the airing of scenes from the Awassi Express has not been established. It is clear that some of the circumstances were contrived by manipulating the environment (hosing the sheep and manure pad, mischievously moving baby lambs into the footage, possibly modifying ventilation) for the sake of sensation. This does not however diminish the need for the trade to respond to changing community expectations by ensuring livestock are managed to minimise risk of compromised welfare.

The logical first step in ensuring animal welfare is to determine 'acceptable' measurable parameters that unequivocally define welfare for (various classes of) livestock. These parameters have so far remained elusive and this continues to be an obstacle in reaching any consensus between proponents and opponents of the live trade.

A further obstacle is the emotional nature of any debate rather than scientific reasoning. An example is the Australian Veterinary Association's suggestion that it is a logical arbitrator on matters pertaining to the live trade on the basis of its custodianship of veterinary science, focus on animal welfare and the ability of its chosen members to interpret the 'science'. The reality is a strong lobby group in the AVA philosophically opposed to live exports driving their proposed agenda without significant consultation with members who have direct experience with shipping to the Middle East. The AVA's persuasive submissions involve flawed interpretations of research that has itself not been validated in a practical context.

As an individual associated with the sheep industry for over 50 years and involved in the live trade for 30 years I am defensive of the trade and hope Australia will continue to export livestock. I believe we need to remain engaged to lead the way with welfare initiatives that guide improvements in live exports around the world. As an AAV accompanying over 60 voyages to the Middle East I am aware of inadequacies in the ASEL and welcome change. It seems an oversight for people with extensive practical experience to have not been significantly engaged in the various consultation and review processes. People with little or no practical experience of the trade seem to be dominating the discussion.

Hasty reactions and over-reactions without appropriate justification have not achieved productive outcomes during the course of the review processes to date. The already divisive community attitudes towards the live export trade have been further polarised by the shock of dubious publicity. This has driven an accelerated review process that has consequently been haphazard. The various review processes and submissions have failed to propose sound bases for future standards

due to lack of practical validation of previous research and modelling. Page 26 of the Draft Report demonstrates this point; I struggle with the concept that a Panel proposes an HST but questions the basis on which to propose such a threshold. Any welfare initiatives involve welfare implications. We need to ensure that any new standards do in fact deliver the best welfare outcomes (and balance commercial implications and consider international impact).

Justification for recommendations in the HSRA review has been based largely on theoretical evidence rather than practical outcomes. The draft report highlights the need for heat stress and animal welfare to be clearly defined before sound recommendations for management can be determined. There are no universally accepted objective measures of welfare to benchmark standards against. Survival has been rejected as an acceptable measure of welfare but no practicable options are proposed as alternatives. Panting score incorporates a number of components that appear difficult to measure and reconcile in a group situation encompassing 70,000 biologically variable sheep spread across multiple different areas of a ship. We need a validated predictive model and validated objective measures of animal welfare. The panel refers to the “affective state” of the animals but offers no resolution of how to assess “how the animal feels”.

Recommendations 5, 7 & 8 imply the current shortage of knowledge, data and validation on which to base guidelines. The McCarthy Review suffered from the same conundrum. The current report suggests “straightforward means of implementation” of new guidelines but the industry review process continues to build on past research initiatives of questionable current relevance and lacking validation in a practical context. Static land-based facilities do not duplicate the dynamic environment encountered on livestock carriers. Characteristics of exported sheep have changed significantly over several decades; the live sheep trade has become a largely West Australian phenomenon with major changes to pre-shipping preparation. A cynic might also suggest that a common priority of recent research is to determine the need for further research rather than arrive at firm conclusions.

Despite the difficulty of determining a threshold at which welfare is compromised, WBT in the vicinity of an animal is clearly a criterion for predicting the likelihood of heat stress. It is important to make the distinction between heat stress and distress. We anticipate encountering stress in our workplace at some stage and dealing with the associated pressure with hopefully a positive response. It is reasonable to assume that sheep exposed to environmental challenge will likewise respond adequately unless a critical threshold is reached where they are incapable of returning to normal without unacceptable compromise. One problem is determining when animals are responding physiologically to a heat load versus patho-physiologically to heat stress or distress in a given situation. A second problem is predicting the WBT in the vicinity of animals from available information. A third problem is validation of the HSRA model based on animal characteristics, acclimation and source. Choosing risk of exposure to any ambient WBT as the threshold at which a standardised sheep can no longer control core body temperature seems inappropriate since this is only one factor determining the WBT in its vicinity. There appears to have been insufficient data collection to substantiate any threshold or quantify the implications of confounding interactive factors such as ship characteristics, space allowance, class of livestock, capacity for adaptive response, previous length of exposure, degree of acclimation and level of feed intake. There is also variation in figures cited by different meteorological databases in Middle Eastern countries.

Despite the panel’s determination that 28°WBT is an appropriate HST this is not consistent with my personal experience. My opinion from practical experience is a variable indicative heat stress threshold (HST) depending on factors mentioned above. Approximately 31-32°WBT in the vicinity of sheep at ASEL space allowance is consistent with the threshold at which mortality tends to

increase, not from heat stress but from acceleration of decline primarily of sheep failing to eat. The adoption of 28°WBT as HST based on conformity with a HSRA model (HotStuff) that has not been adequately validated in practical contexts is contentious.

The northern summer is undeniably a period of risk of reaching HST irrespective of what that threshold might be. However, the duration and nature of the summer remain topics of conjecture. Meteorological records for Bahrain and Muscat indicate June to September at risk of high temperatures (minima > 25°C & maxima > 35°C) and potentially high humidity. Early June and late September are inherently lower risk. May and October are lower risk still of that combination. The suggestion that the northern summer lasts for 6 months makes a folly of any submission that includes it. Figure 2 p21 demonstrates 28°WBT to be an inappropriate HST; April, May, October and November are from practical experience good months to arrive in the Middle East especially with the now increased space allowance.

Increases in space allowances already adopted have fundamentally changed the shipping phase of live exports and likelihood of exposure of livestock to the elusive HST. As stocking density decreases in a given **area**:

- Feed intake decreases (per unit area)
- Water intake decreases
- Heat generation decreases
- Faecal output decreases
- Water output in urine and respiration decreases
- Faecal pad bulk, depth and moisture retention decrease
- Ventilation increases (per head) and effectiveness of ventilation increases
- Air moves more freely between animals and across the manure pad

The impact of these changes needs to be objectively evaluated to determine how space allowance might best be manipulated to ensure minimal risk of livestock being exposed to the HST.

Sheep have a remarkable capacity to adapt to changes in environment including heat. This adaptation can occur not only on land (p16) but also during passage through the moderate conditions routinely encountered through the tropics.

The draft by the Technical Reference Panel poses more questions than it presents answers and the proposed HST is questionable. The Panel itself questions “The validity of input values, including pen air turnover (PAT) and animal-based parameters that are entered into a HSRA calculation in order to solve the mortality or heat stress risk probability equation”. Any interventions to amend current standards need to be informed by good science. There are obviously huge gaps in the existing science and we are currently heavily reliant on opinions derived from research of questionable relevance. The live sheep trade is a dynamic biological system and changes need to be validated in that context.

There has been a number of voyages accompanied by Independent Observers but, to my knowledge, limited release of their reports or the data harvested during their experience. This means little opportunity from the investment for interactive discussion of potential options for managing welfare at a time when this is critical to the future trade.

Heat events are ultimately not ‘normal’. Pockets of coincident high temperature and extreme humidity in the Middle East are unusual weather events similar to those in other parts of the world especially Australia. We anticipate and manage bushfires, torrential rain, floods, catastrophic winds, heatwaves and cold snaps but cannot completely prevent damage or loss.