

**Submission to the Technical Reference
Panel for the review of the Heat Stress
Risk Assessment for the export of
sheep to the Middle East**

Technical Reference Panel
Heat Stress Risk Assessment Review
Department of Agriculture and Water Resources
GPO Box 858
Canberra ACT 2601

1 March 2019

To Whom It May Concern

WoolProducers Australia welcomes the opportunity to provide a submission to the Technical Reference Panel's (TRP) review of the current Heat Stress Risk Assessment (HSRA) model.

WoolProducers is the national peak industry body representing and promoting the needs of Australia's woolgrowers. Our membership covers the industry's commercial, superfine and stud breeding sectors. WoolProducers is nationally representative through our state farming organisation members and three democratically elected independent directors. WoolProducers work includes the provision of advice to AHA, state and federal governments on behalf of the wool industry through representation on national animal health and welfare committees. WoolProducers works closely with the Department of Agriculture and Water Resources on key issues such as animal health and welfare, biosecurity, pest management control, natural resource management, drought preparedness, emergency animal disease outbreak preparedness and industry development, including research and trade.

WoolProducers continues to support the live export of sheep contingent on adherence to animal welfare standards underpinned by science.

The live sheep export trade is worth \$250 million annually to Australia¹. Approximately 2 million sheep used to be exported annually, however in November 2018 (following the end of the temporary sheep export cessation), only 126,000 sheep were exported. Key export destinations include Kuwait, Qatar, the United Arab Emirates, Oman, Jordan and Israel².

The Centre for International Economics reported in 2014 that if the live export trade was to close, woolgrowers would be impacted because average saleyard prices would fall by:

- \$4.07 per head or 4.5 per cent for lambs, and
- \$13.20 per head or 24.4 per cent for older sheep³.

Further, the result of lower prices would impact woolgrowers by:

- Reducing their total receipts and the profitability of wool and sheep relative to other enterprises.
- Lower prices would cause woolgrowers to have to adjust their production decisions.
- The national sheep flock would decline by 3.5 per cent (compared to the 2011-12 sheep flock), equating to a 2 million head decrease in sheep numbers.

¹ ALEC, *Economic Impact*, www.auslivestockexport.com (accessed online 25 February)

² MLA, *Sheep exports and the live trade cessation*, 2018, www.mla.com.au (accessed online 25 February)

³ Centre for International Economics, 2014, *Contribution of live exports to the Australian wool industry*, Canberra

- The national wool clip would decrease in line with the fall in the national flock number, by 2.3 per cent or 7.9 million kilograms greasy basis.
- The eastern and western market indicators would increase by 1.49 per cent or 17.9 cents per kilogram clean basis, as a result of decreased national wool production.

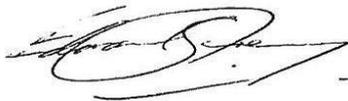
Overall, these results would cause a reduction of the gross value of production of woolgrowers, which would equate to a loss of \$39 million nationally in the medium term of between three to five years.

WoolProducers has engaged with the Sheep Producers Australia-led Coalition for Live Exports, which appointed a Technical Advisory Group (TAG) to scientifically review the recommendations made by the TRP on their assessment of heat stress risk for sheep exported to the Middle East. The TRP's recommendations were released in December 2018.

Animal welfare has been the primary consideration in the recommendations made by WoolProducers. The recommendations made by the TAG have been scrutinised by WoolProducers to ensure that our submission is based on scientific evidence that shows the trade of live sheep to the Middle East can continue. Of most importance is the finding by the TAG that the 98 percentile WBT upper limit used in the HSRA model is consistent with current science and does not achieve the desired welfare outcomes. As such, our recommendations are based on suggestions from the TAG that will ensure sheep travelling by boat to the Middle East will experience acceptable environmental conditions that diminish the risk of heat stress.

Our submission refers to the recommendations of the McCarthy report being considered by the TRP. Should you wish to discuss our submission further, please contact WoolProducers Australia CEO, Ms. Jo Hall [REDACTED].

Yours Sincerely,



Edward Storey
President
WoolProducers Australia

Recommendation 3: Heat Stress Risk Assessment

WoolProducers supports recommendation 3 of the McCarthy review, that industry should move from a risk assessment based on mortality to a risk assessment based on animal welfare. However, our support extends only as far as to ensure that the risk of heat stress is able to be predicted accurately.

There is insufficient evidence that the risk of heat stress on ship has been accurately predicted by the modelling presented in HSRA Report throughout a 12-month period:

- Environmental data used for the 98 percentile WBT in the modelling appears to have been collected by volunteers on ships that are not necessarily live export vessels. Data from actual live export voyages would be better and may now be available from independent observer records.
- Environmental data comparing animal observations (respiratory rate, temperature, behaviour) taken concomitantly to temperature records on board ships has not been presented in support of HSRA. Hence, the findings in animal house experiments about the relationships between environmental and physiological parameters and subsequently the model outputs have not been corroborated or tested with on board ship information. Model testing is a standard part of modelling. Whilst the statement is made on page 19 that recent monitoring corroborates the use of 28°C WBT, no data is presented to prove this.
- Voyage data that exists from recent independent observer reports could form the basis of verifying animal house data with ship board data. This data has been collected at considerable cost to the industry.
- Some case studies, particularly those presented by the Australian Veterinary Association, describe voyages that have had high mortalities. Without a comparison to conditions on low risk voyages, the interpretation of the role of environmental conditions in such studies may be skewed to the worst-case scenario.
- Consistent with the modelling, industry experience suggests that the value of 28°C for WBT can be experienced throughout the year, particularly when vessels cross the equator. On some voyages where this has occurred mortalities have been low. Examination of ship board records could assist in determining whether such voyages were compliant with the 98-percentile risk, and to better predict when periods of high risk occurs.
- There is no apparent input for the length of time the WBT exceeds the threshold value or for periods of respite after such an event. The 98-percentile value may do this by default but is unlikely to predict whether temperature values occur contiguously or not.
- The assessments of risk appear to take into account probability only and not the consequence of a high temperature event. More importantly the probability doesn't appear to have been adjusted to accommodate the change in consequence. Poor welfare as an important but lower consequence than mortality. If the consequence has been reduced the probability might also be increased with no change in the "risk".
- Animal predisposition to mortality has been shown to depend on property of origin. The potential to use this information for animal welfare is unclear but could be investigated.

Recommendation 4: Base stocking densities

WoolProducers supports recommendation 4 as it relates to the effect of stocking density on the generation of heat by the number of sheep on board a vessel.

- The reduction in the base stocking density (17.5%) will compliment other changes made to prevent mortality events.

- Some issues with stocking rate in the past have been associated with overloading. Better enforcement of regulations with a reliable head count should again assist with this recommendation and prevent mortality and welfare.

Recommendation 5: Future refinements of the HSRA model

WoolProducers supports refinement of the HSRA model relative to the diurnal and daily variations in deck WBT data, on the premise of the trade continuing. The current risk assessment could make the trade untenable for May to September. Alternatively, the approach would be to continue the trade outside the summer months (June to August) as per the voluntary moratorium introduced by industry. Incremental improvements to animal welfare would be mandated as measurement technologies and protocols become available to do this. Implementation of the current TRP approach would jeopardise this alternative approach. There could be no opportunity to refine the model if, in the interim, the trade was terminated by default as a result of the risk assessment modelling. Ships would be diverted to other markets and in the longer-term, the trade would diminish as these markets close.

Recommendation 7: Measurement and recording of conditions

Standardising the design of measuring equipment and associated measurement and recording protocols is vital.

Recommendation 8: Other on-board factors

Changes to how voyages are monitored and evaluated will increase the variability in predictive results as databases are developed and refined. The TAG identified ship and ventilation design is a major factor to be considered. Verified standards and protocols are needed to make the development of predictive models workable.

Moving forwards

WoolProducers is supportive of the recommendation of the TAG, which is to implement a best practice approach that is consistent with a mortality risk due to heat stress being zero. This will include:

- No shipping in June, July and August as per the industry led moratorium. However, the moratorium should be reviewed in case conditions over the Middle Eastern summer would allow shipping under the revised HSRA .
- Limiting the use of HSRA to adjustment of stocking rate from the ASEL allometric calculation as appropriate, until the model can be adjusted to a suitable welfare model. Stocking rate be regulated by an independent counting system.
- Offloading protocols be instituted to avoid extended periods in high temperatures for managing vessels waiting for a berth and to avoid multiple ports of discharge.
- Mortality threshold of <0.5%.
- Accreditation of ships for ventilation standards (pen air turnover).
- Revision of the HSRA model used to predict risk and amend acceptable shipping periods (months of the year) once available. The revision should include adjustment to risk probabilities and consequences appropriate for animal welfare outcomes and validation of model outputs with animal data collected on ship.
- Development of standards for measurement instruments and protocols using a proof of concept approach on board ships.
- Mandating compulsory measurement and data reporting once protocols are proven.

