



8th September 2015

To: Port Adelaide Monitors

Re: Images of cattle on board and after unloading from MV *Ocean Dover* in Eilat, Israel, August 2015

Comments by Vets Against Live Export Inc.

Thank you for sending us these images.

As you will be well aware heat stress on board live export vessels and after arrival in Middle Eastern ports is a major cause of poor welfare and death in both sheep and cattle.

Exporters are required to submit a Heat Stress Risk Assessment plan for each voyage based on a model which claims to predict the mortality of animals exposed to increasing wet bulb temperatures. This model was commented on in a peer reviewed article which was published in *The Veterinary Journal* (volume 199, pp223-226 [2014]; available through open access). The model was clearly demonstrated to be fundamentally flawed as the temperatures at which sheep and cattle became unable to control their core temperatures were under-estimated.

The experiments by which these critical temperatures were established were conducted at Murdoch University in Western Australia. In those experiments, the temperature at which British breed cattle became unable to maintain normal core temperature was 26 degrees Celsius wet bulb (WBT). The Australian Department of Agriculture claims that the mortality threshold for these animals is 32.5 degrees WBT.

The (we presume dry bulb) temperatures shown in the images are 42.5 degrees Celsius (presumed to be the air temperature on the dockside) and 56.5 degrees Celsius (indicated to be the temperature in the hold of the ship).

The average humidity in Eilat in August is reported to be 24% (see www.eilat.climatemps.com/humidity.php). Thus the corresponding wet bulb temperatures are 34.5 and 25 degrees Celsius respectively (see www.kwangu.com/work/psychrometric.htm for conversion using these parameters). It seems likely that animals exposed to the temperatures recorded in the hold of the ship will have experienced heat stress, as the WBT exceeds the level at which the animals can maintain their core body temperatures, and thereby poor welfare. It is also likely the heat stress would continue under the crowded conditions of onward transport by truck. This is because animals which have been exposed to heat

stress, such as those in the hold of the ship, exhibit an increased susceptibility to a later heat stress exposure.

The cattle shown in the images appear to be of both *Bos Indicus* (Brahman type) and *Bos Taurus* types (British breed for example Hereford and Aberdeen Angus). In the experiments carried out at Murdoch University the British breed animals were found to be more susceptible to heat stress than the Brahman types.

As you point out in your letter those animals which are coated in faeces will probably be less able to dissipate heat and therefore heat stress could be expected to occur at lower temperatures.

It is clear that exporting winter adapted cattle with long coats from Southern Australian ports, including Adelaide, exposes these animals to a high likelihood of heat stress and poor welfare.

VALE does not support live export of animals for slaughter on long haul voyages, including to the Middle East, under any circumstances but as a response to the present situation, where the industry is fully supported and encouraged by the government, we would call for a ban on voyages from the Australian winter to the Middle East summer.

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