

Project overview

Independent pen air turnover audits for the live export industry

Project code W.LIV.2002

Prepared by The Livestock Export Program (LEP)

Date published March 2021

Published by	LiveCorp	Meat & Livestock Australia Limited
	PO Box 1174	Locked Bag 991
	NORTH SYDNEY NSW 2059	NORTH SYDNEY NSW 2059

In partnership with Stacey Agnew Pty Ltd



Meat & Livestock Australia and LiveCorp acknowledge the provision of funding by the Australian Government and levy payers to support the research and development detailed in this publication.

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Brief summary

The Australian Government Department of Agriculture, Water and the Environment (DAWE) issues permits to export livestock by sea from Australia. For voyages to and through the Middle East, a heat stress risk assessment is required, showing that the livestock can be shipped within acceptable risk parameters for the planned voyage.

One of the HSRA model components is pen air turnover (PAT), a measure of the rate of air moving through livestock pens on export vessels. The ventilation systems are a critical component of animal welfare, providing fresh air and removing heat, moisture and gases such as ammonia produced by the livestock.

From 1 July 2018, DAWE mandated that all vessels requiring a heat stress risk assessment have independently audited ventilation data. As a result, PAT audits were completed on sixteen (16) vessels through this project, at the request of vessel owners and/or agents, between July 2018 and September 2020.

There is no standard ventilation arrangement on the current livestock carrying fleet. Some vessels have open livestock decks, while others are fully enclosed. In most cases, however, fans on the top deck draw in air for distribution through the decks below via various types of ducting. Exhaust air is drawn out by another set of fans or via natural ventilation from the sides of open deck vessels.

One of the complications of measuring effective ventilation is the potential for stale air to be captured by the inlet fans and fed back into the vessel. This is generally a bigger problem when the vessel is stationary or in port; therefore, some vessels are issued with one set of PAT figures for when they are sailing and another for use when in port.

Objectives

The objectives of this project were to:

1. conduct independent audits of the ventilation systems on all livestock export vessels travelling to or through the Middle East to ensure that they meet industry and regulatory requirements
2. provide a framework and specifications for the independent verification of ventilation systems on livestock export vessels
3. provide data that allows faithful assessments of the risk of animals experiencing heat stress during planned voyages on any particular vessel.

Project outcomes

Detailed audits were conducted on 16 vessels with the information used to update the industry's Heat Stress Risk Assessment model.

Benefits to industry

Independent audits of pen air turnover on all livestock export vessels operating out of Australia not only meet regulatory requirements but ensure the industry and community can be confident that shipboard ventilation systems are operating at levels that provide positive animal welfare outcomes.