



Fact sheet – Sanitation of Viscera Tables using Steam

Date of issue: XX XX XX

Introduction

A large quantity of water is used in the routine cleaning and sanitation of moving-top viscera tables. The quantity reported varies widely, but can amount to between 500 – 600 litres/head processed.

The cleaning and sanitation of moving-top viscera tables usually involves the following steps:

- Pans (or slats) are flushed with cold water sprays at the far end of the table to remove tissues, blood and other fluids;
- Pans (or slats) are sanitised with $\geq 82^{\circ}\text{C}$ hot water at the near end of the table to reduce the microbial load on the surface of the pans (or slats) and then rinsed with cold water to cool the pans (or slats) prior to accepting the internal organs and intestines.

Steam has been used as a cleaning agent in the meat industry for over fifty years. Cleaning equipment with pressurised steam enables impact temperatures of 100°C or greater to be achieved.

AMPC undertook a project, A.ENV.0136 Steam Sterilization of Viscera Trays, which involved a trial and evaluation of the use of food contact grade steam as a replacement for hot water ($\geq 82^{\circ}\text{C}$) for the continuous sanitation of large and small stock viscera tables during routine slaughter operations.

The following considerations were taken into account during the planning of trial:

- The effectiveness of the initial cold water rinse in removing tissues and fluids prior to steam sanitation in order to counter “burn-on” from the application of the steam;
- The effectiveness of the second cold water rinse in removing heat from the trays and

slates from the anticipated high temperature of the metal following steam sanitation;

- Controls for the venting of the steam during application to ensure it is not a potential hazard.

Outcomes

Steam temperatures at the nozzle release point ranged from $75 - 90^{\circ}\text{C}$, but dropped rapidly to around 30°C at a distance of 120 mm from the release. It was deemed that this outcome was an inadequate alternative to current requirement for 82°C hot water.

As a consequence, an adjustment was made to the delivery mechanism and a second trial was undertaken using a steam bath design instead of the steam injection system. The trial found that this approach consistently maintained a temperature of 82.8°C within the bath.

It should be noted that organoleptic and microbiological assessments made throughout the trial indicated that the performance outcomes are at least equivalent to those achieved through the conventional 82°C hot water sanitation system. Condensation was not identified as an issue in either of the two approaches described above.

The project demonstrated that total costs for viscera table water (large and small stock) could be reduced by approximately 60% through the application of steam technology. The challenges relate particularly to the engineering processes and design in delivering a practical outcome.

A copy of the final report for ‘A.ENV.0136 Steam Sterilization of Viscera Trays’ can be found in the ‘reports library’ on the AMPC website, or by contacting the AMPC office on T:02 8908 5500 or E:info@ampc.com.au.