



10 December 2015

P.PIP.0449 Trim Auger Spray E.Coli Intervention Project to Maintain Market Access

Milestone 3 – Validation

1.0 OBJECTIVE

Thomas Foods International (TFI) intended to trial the application of the intervention agent Twin Oxide, to trim product by augering pieces through an incline auger fitted with a series of spray nozzles. If successful, the process would seek eradicate any residual STEC E.coli that may remain after normal trimming and inspection process to safeguard export market access.

The aim was to achieve complete coverage of the trim with Twin Oxide solution by exposing all surfaces of the trim as it is rotated around the central shaft of an auger. Gravity would cause the trim to fall from the sides of the chamber exposing different surfaces to the spray above through each rotation. Furthermore, the investigation would seek to determine if any residual Twin Oxide remains on the product, post treatment.

An auger system was selected for several reasons:

1. Ability to be fully enclosed to enable Twin Oxide fumes to be extracted
2. Product flow rate
3. Product mixing to enable maximum exposure to the spray

2.0 TRIALS & VALIDATION

Prior to commencement of the validation study, TFI trialled the operation of the system to gauge an understanding of Trim and Twin Oxide flows that would be required to operate the system at maximum efficiency. During the trial process, several issues were identified:

- It was difficult to establish an appropriate Twin Oxide flow rate due to variability in trim piece sizes.
- Twin Oxide coverage on larger trim pieces was inconsistent
- Smaller trim pieces would get covered in excess Twin Oxide solution and would discharge the process in a 'wet' state.
- Pieces of trim would 'stick' together resulting in some surfaces not being exposed to the solution.

In order to overcome the issues confronted during the trials, TFI established a list of possible solutions and over a period of several weeks, conducted further trials in an effort to overcome the issues. Trials included:

- Modification to spray nozzle positions and spray pattern in an attempt to achieve greater coverage of product
- Varying auger speed to increase/reduce mixing in an attempt to achieve greater product coverage and reduce 'wetting' effect
- Varying of flow rate of twin oxide solution to achieve greater product coverage without 'wetting' product.

Despite trialling many combination of the above possible solutions, TFI was unable to achieve consistent and suitable product coverage of Twin Oxide solution. Pieces would either have large areas untreated or be completely wet with excess Twin Oxide solution. A contributing factor to these ongoing issues is caused by inconsistent trim piece sizes passing through the system. As the system had to deal with both large and small

trim pieces, it was not possible to find an application rate or nozzle configuration that would give consistent coverage without over applying Twin oxide in an auger configuration.

In late February 2015, it was decided to cease trials of the Twin Oxide Auger without proceeding to the validation study on the basis that the system was not able to achieve a consistent and suitable coverage of Twin Oxide solution on varying trim pieces sizes.

As a result the project should be terminated as it is not commercially viable for TFI.