AMPC
AUSTRALIAN MEAT PROCESSOR CORPORATION

Study on Offal Sortation and Transportation Systems

2021-1278 Study on Offal Sortation and Transportation Systems

Project Code	Prepared by	Date Submitted
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Project Description

Current practices of offal handling within the red meat industry in Australia, vary in technology and methodology from site to site whereas other sectors of the red meat processing, such as carcass deboning and carton handling, have the benefit of a variety of commercialised solutions.

Investigations have been conducted to deduce common issues found in offal handling areas of red meat processing plants and recommend potential solutions to optimising offal sortation and transportation with current and potential technologies in the future.

Project Content

The objectives of the Study of Offal Sortation and Transportation Systems project are:

- Educate AMPC, processors, and providers of possible use-cases of findings and concepts applicable for offal sortation and transportation.
- Ascertain the readiness level of the red meat industry to adopt and leverage solutions.
- Document possible solution use cases that can be applied readily or require further specialised study on to be implemented effectively in the future.
- Develop concept solutions for the industry.

The focus of the Study on Offal Sortation and Transportation Systems has been undertaken to determine methods to replace or improve on the current offal sortation procedures and alleviate the common issues faced by the red meat industry by exploring technical and methodical solutions with account for the challenges and restrictions of its implementation with the current nature of the offal handling process.

The project was taken in 5 different sets of tasks. These are:

1. Conduct initial research to provide more insights on commercialised, documented, or experimental solutions;
2. Conduct physical site studies of two red meat sites, alongside with to gather data and understand common issues faced within the industry;
3. Evaluate findings found in site investigations;
4. Formulate potential solutions that can be adapted within the industry to improve on current practices, and
5. Evaluate solutions and provide recommendations based on assessments.

Upon completion of these assessment, appropriate solutions have be identified according to current economic and technological limitations, and future opportunities of developing and implementing.

Project Outcome

With the investigations conducted in the two red meat sites, the main issues were found to be:

- Occupational health and safety with frequent handling heavy products;
- Staff shortages and short staff retention;
- Lack of space;
- Accessibility of offal collection points, and
- Cross contamination concerns with operators handling both red and green offal.

The study of the findings resulted in several potential solutions to counteract these issues. The project looked into solutions that can be complemented a functional system. These systems are graded against the issues that were found during the site investigations with a variety of analysis and criteria. These systems are:

- **Revamped Offal Handling** – Alters the current process of offal sortation to separate the red and green offal handling in a compact manner and streamline the process of handling acceptable and rejected offal to reduce the workload of operators
- **Chute System** – Alternative system that allows separation of two products to reduce workload on sortation. This can be used to complement the current offal transportation system to separate red and green offal or to handle separation of acceptable and rejected offal
- **Vision Robotic Automation** – Automated process that utilises vision system to grade and sort offal into respective channels
- **Vacuum Transfer** – Attachment that can be used to transport specific offal parts through a vacuum channel system.

Benefit for Industry

Currently, the offal sortation and transportation system on most red meat processing sites are nearly identical and have remained unchanged throughout several years. As most resources are utilised into other processing areas, the technology remains underdeveloped. This study will promote the development of alternative offal sortation and transportation systems, and in turn, benefits the industry with improving the throughputs of offal products and alleviate bottlenecks of the process.

The potential solutions presented also aim to alleviate the ongoing issues of the current system and the industry, such as staff shortages, cross-contamination of products, occupational health and safety, accessibility, and more.

The study also explores the common and major issues of the current offal sortation and transportation system that is widely utilised in most red meat processing plants, promoting the awareness of these issues to the industry and acting as key points for future development of offal sortation and transportation methods.