

Co-product recovery project

Co-product recovery and overall efficiency gain to meet output capacities

Project Code
2022-1052

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Date Submitted
15/06/23

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Project Description

This processing plant is constantly looking for ways to improve the production system and are undergoing an entire company wide innovation program to debottleneck and incorporate innovative ideas to the process (from livestock receivals to cartons leaving the facility), reduce waste leaving the site (including being more resource/ services efficient), and to change the nature of the work to both reduce the per head/ hour labour requirement (as a KPI) and ensure that those resulting jobs are designed in a way to open both a wider physical stature workforce and hours of operations that suit varying employment demographics within the labour draw pool.

This project will enable the processing plant and AMPC to understand which innovations, and how to incorporate them in a de-risked method, into the pending brownfield rebuild of the co-products process, the upgrade of the refrigeration system, carton handling, loadout options and beef hook room modifications.

The processing plant engaged NIRAS as third party consultants to ensure that all current innovation knowledge (and solution providers) are considered into the re-design possibilities as one of the few opportunities in Australia to commence the on-site proof of working and adoption process for these areas of industry innovation.

Project Content

The objectives of the Brownfield Co-product Recovery Project are to:

- Ascertain how a Co-product recovery room design can accommodate innovations in the areas of (1) Co-product recovery, (2) refrigeration capacity review, (3) Beef hook room modification, (4) WHS innovations, (5) material handling, (6) industry 4.0 and (7) other new processing equipment as related to co-product recovery and overall product efficiency.
- Design of Co-product recovery room, carton handling and loading, beef hook room redesign for incorporation and evaluation of either/ or (1) Co-product recovery, (2) refrigeration capacity review, (3) Beef hook room modification, (4) WHS innovations, (5) material handling, (6) industry 4.0 and (7) other new processing equipment as related to co-product recovery and overall product efficiency.

The focus of the project is to determine industry solutions to innovate co-product recovery procedures and alleviate the common issues faced by the red meat industry, through the exploration of relevant technologies and process enhancements, with account for the challenges and spatial restrictions applicable to existing brownfield establishments.

Project Outcome

Through on-site investigations and evaluation of the processing plant's current co-products process, The processing plant and NIRAS have determined the current industry best-practice innovations for co-product recovery enhancements and overall efficiency gains in the areas of:

1. Co-product recovery
2. Refrigeration capacity review
3. Beef hook room modifications
4. WHS innovations
5. Material handling
6. Industry 4.0
7. Other new processing equipment as related to co-product recovery and overall product efficiency

Within each of the above areas, both plant specific and industry level operational concerns have been identified for the processing plant and relevant solutions have been established to innovate the sites co-products process. Based on these solutions, a design for the processing plant has been developed and a mitigation plan outlined to alleviate associated risks to operation, commonly incurred by site works.

Some notable innovations in the areas of co-products optimisation include, the segregation of red and green offal processing, increased paunch table length, diversion of rendering material and truck movements, the introduction of a screw feed conveyor for heads, continuous oven for batch cooking, carton conveying and continuous blast freezing of offal products.

Benefit for Industry

This study identifies the current industry best practise innovations for co-product recovery and provides a de-risk integration strategy to implement these solutions within existing abattoir sites, allowing them to achieve best in class procedures and performance efficiencies. These innovative solutions will address several issues of current concern to the red meat industry, including labour shortages, staff OH&S, double handling of products, product contamination (red and green offal), inefficient product freezing methods and other issues associated with existing establishments.