

## Cost benefit analysis for combined splitting and spinal cord removal

**Project Report Reference: 2017-1060**

**Date: 29 May 2017**

### **Project Description**

Beef carcass splitting is currently undertaken by trained and experienced saw men, often using splitting saw operated on hydraulic platforms. Due to recent progress in automating other aspects of red meat processing and new ideas surrounding how carcass splitting could be automated, there is renewed interest in the potential economic benefits of automating the process. As well as splitting, it is envisaged that removal of spinal cord material could be included in the automation.

### **Project Content**

Data, information and insights were gathered from site visits to three abattoirs. This included current manning levels and throughput with manual splitting, yield loss due to soft siding, and other benefits, risks and barriers of automating the process. An excel model was used to determine the current costs of splitting and spinal cord removal, and benefits from automating. Consideration was given to different abattoir configuration and throughput.

### **Project Outcome**

The current cost of yield loss (strip loin), as a result of soft siding, was estimated to be \$0.20/head and \$1.8 million/annum for the Australian beef processing industry. However, the major benefit from automating splitting and spinal cord removal was calculated to be labour savings, being \$0.91 - \$1.07/head. The estimated capital ceiling cost for achieving 24 month pay back ranged from \$138,000 - \$1,020,000 depending on system capability and abattoir throughput.

Abattoirs that would have the greatest benefit from automated systems are those:

- planning to increase chain speed and requiring change from one splitting saw to two
- with high throughput.

Requirements of an automated solution would include:

- Suitable sensing technology that allows for accurate splitting
- Ability to suitably split all carcass types



- Ability to operate at chain speeds up to 135 head/hour
- High reliability.

### **Benefit for Industry**

The yield and labour saving benefits of automating carcass splitting and spinal cord removal have been quantified as \$0.55 to \$1.27/head, depending on system capability, and abattoir configuration and throughput. Other potential benefits include space saving and increased consistency in carcass for trimming and boning.

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