



final report

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Hardwicks - kosher shearing lamb necks

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Abstract

The body of the final report is contained within this Milestone report, and the technical drawings will be made as an attachment. Overall this project has been successful, and allows for the neck shearing to be done on a far less physically demanding and economical timeframe. The total labour saving was greater than expected, especially when good working dogs are used. It is possible for a single labour unit to run the Neck Shearing area. Central to the successful operation of the Neck Shearing setup is the skill level of the labour unit doing the shearing. Regardless of all the other efficiency gains, if this job is not given a labour unit with adequate skill levels then the rejection rate (at slaughter) will be amplified over the increased numbers.

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1 Background

Harwicks have a requirement to design and build a new system for shearing lamb necks onsite in accordance with Kosher religious requirements. The aim is to

- reduce the volume of rejected lambs, by improving quality of neck shearing and increasing level of hygiene to meet strict Kosher requirements
- reduce the physical labour involved in shearing lambs for kosher slaughter, and therefore reduce the production costs
- increase the Company's capacity for domestic and international kosher contracts/orders.

Kosher rejection rates were consistently high around 75% due to the religious requirement for minimum wool density across the neck and associated hygiene. As a result management and plant technicians discussed possible solutions to mitigate the financial and economic impacts this ongoing issue were having on the business. During these discussions the idea was borne to attempt to install onsite neck shearing facilities. This would not only improve the hygiene and rejection rate, but also reduce production costs by reducing the physical labour involved in preparing lambs for kosher slaughter.

Various calf and sheep restraints exist in the marketplace and these were researched by Hardwicks technicians in the hope of finding an existing restraint that would allow for neck shearing. Unfortunately there was no ideal product located. However a Kombi Klamp was purchased with the intention of modifying it for installation and integrating it on the sheep production line. It is intended that the Kombi Klamp will be modified and installed so as to allow shearing to occur to a satisfactory standard.

As a result of the intended onsite shearing, modifications are also required for the holding yards. The existing yards were open air and to conduct onsite kosher shearing require an enclosed area. Additionally due to the volume of lambs potentially been shorn the floor area beneath the restraint will need modification.

2 Projective Objectives

The object of the project was to build a new system to shear lamb necks onsite, in accordance with Kosher religious requirements. Presently the Kosher lamb necks are shorn in the traditional shearing shed, which is a very slow and labour intensive process. An idea has been conceived to install a custom designed mechanical cradle, which would restrain each lamb as it runs up the chase, so that they can be easily shorn prior to slaughter. This would greatly reduce the physical labour and cost required to meet Kosher obligations and increase the Meatworks capacity for Kosher slaughter. It is anticipated the quality of neck shearing will be improved, leading to increased hygiene and in turn a large reduction in rejected lambs that currently are considered not to meet Kosher requirements.

- Design and build a new system for shearing lamb necks onsite in accordance with kosher religious requirements.
- Reduce the volume of rejected lambs, by improving quality of neck shearing and increasing level of hygiene to meet strict Kosher requirements.
- Reduce the physical labour involved in shearing lambs for kosher slaughter, and therefore reduce the production costs.
- Increase the Company's capacity for domestic and international kosher contracts/orders

3 Results

The final report has been compiled and updated to include notes about correct usage and techniques to minimise labour units. There is a marginal benefit for domestic kosher processing however; the real benefit would be seen for large scale process of kosher (several hundred per day).

The data in the tables is based upon the following assumption:

The minute rate using the old method is 0.8 per minute; the minute rate for the new method is 2 per minute.

The ease of shearing decreases the rejections (as less lambs receive cuts to the neck, ideally this is eliminated altogether)

The annual saving is based upon processing kosher 4 days per week, 50 weeks of the year

Table 1: Quantification of KLNS Project Benefits, mob size 100

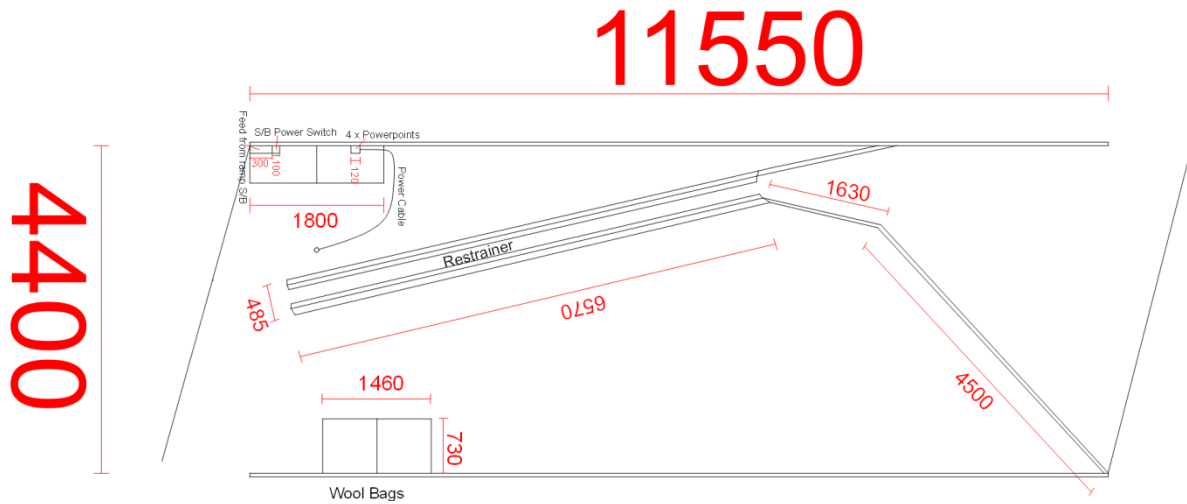
Labour Difference	\$ 50
Decreased Rejections	20
Labour (new)	\$ 33
Labour (old)	\$ 83
Savings (per day)	\$ 70
Annual Savings	\$ 14,000

The benefit here would be amplified significantly more with increasing numbers of kosher. As you can see by the table below there is significant financial benefit with greater numbers. The other benefit that can't be quantified is the decreased physical exertion required by the operator. As the animal is restrained now the operator is no longer required to physically restrain and position each one in order to do the shearing. It is important to recognise being able to shear this many lambs neck would require almost 2 days' work under the old system, whereas now that similar volume could be achieved in 1 day. In terms of labour there may be difficulty in sourcing workers who are able to physically complete this job.

In order to achieve the best outcome with the shearing it is imperative that a clean and sharp handpiece is used. Animals should enter the restrainer without touching another animal, one at a time so they are fully immobilised and restrained for the shearing to take place. The shearer stands behind the animal and gently turns the head upwards to expose the neck for shearing. They shearing should be able to be completed with no more than two downward strokes away from the operator (towards the ground). The wool piece is then placed onto the boards on the ground, collected during a break or after shearing and placed into the wool bags.

Table 2: Quantification of KLNS Project Benefits, mob size 1000

Labour	\$ 500
Decreased Rejections	200
Labour (new)	\$ 333
Labour (old)	\$ 833
Savings (per day)	\$ 700
Annual Savings	\$ 140,000



Technical drawing for the kosher lamb restraining area

4 Conclusions/Recommendations

An area for future consideration may be incorporating the shearing process to be done immediately prior to the slaughtering. This would mean that the animal is only restrained once, rather than twice in the few hours before slaughter.