**A CRYPTORCHID LAMB PRODUCTION AND MARKETING TRIAL**

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**SUMMARY**

Lamb producers have demonstrated that they can use cryptorchid lambs to produce the heavier, leaner carcasses required for domestic and export market development. Improved management systems or genotypes need to be developed, however, to produce a high proportion of lamb carcasses which meet Elite Lamb specifications.

Most butchers found the larger leaner carcasses from cryptorchid lambs suitable for their trade and that they allowed them to extend profitably the lamb product range in their shops.

*Keywords:* cryptorchid lambs, production, marketing, carcass.

**INTRODUCTION**

Consumer research, coupled with product and market development studies, have demonstrated a market requirement for lean lamb carcasses of at least 22 kg (Hopkins *et al.* 1985; Currie 1986; Hopkins and Congram 1986; Hopkins 1988; Backhouse 1989). Two current market development projects, the Fresh Australian Range Lamb (FARL) program to North America (AMLC 1988) and the domestic Elite Lamb program, require larger lean lambs than have traditionally been produced. The FARL program requires lamb carcasses of 18-26 kg with a GR depth of 6-15 mm (Hopkins *et al.* 1985), while the Elite Lamb program specifies a 22-26 kg range with the same GR range. However, Australian lamb production statistics (AMLC 1990) indicate that, although average carcass weights have risen from 16.6 to 17.9 kg over the past 5 years, only a small proportion of carcasses weigh 22 kg or more.

Ram lambs or cryptorchids grow faster and are leaner than *wethers* or ewes at a given carcass weight (Dobbie *et al.* 1985; Thatcher 1986; Thatcher *et al.* 1990; Lee *et al.* 1990). Additionally, ram or cryptorchid lambs are more efficient at converting feed to lean meat (Thompson and Lee 1984).

While ram or cryptorchid lambs may represent a short term solution to producing larger leaner lamb carcasses, there has been a reluctance by both producers and the meat trade to include them in their production and marketing systems (Bell 1990). Most of the reasons given for industry reluctance to accept cryptorchids can be attributed to unfamiliarity in dealing with them.

This paper outlines a pilot cryptorchid lamb production and marketing trial which was carried out in the *Albury–Wodonga* region in 1986. The major aims of the trial were to demonstrate to producers the use of cryptorchid lambs as a management strategy for producing larger, lean lambs and to assess qualitatively the trade acceptance and suitability of carcasses from cryptorchid lambs.

**MATERIALS AND METHODS**

A local abattoir owner was initially contacted to assess the feasibility of the project and to assist with locating retail butchers who may be interested in trying alternative lamb cuts.

Potential co-operating producers were contacted directly and through the local press. Seven producers participated in the trial (Table 1); Border *Leicester/Merino* ewes were joined to traditional terminal sire breeds except for Farm 5 which joined Bond ewes to Bond rams.

Producers were shown how to mark ram lambs as cryptorchids and provided with suggested management strategies. Lambs were weighed and fat scored on each property on a regular basis (usually monthly) with more frequent weighing close to the anticipated slaughter date. Producers were provided with results from the live assessments as well as additional management advice where necessary. Lambs were lifted when a minimum lot size of 12 had reached an average empty liveweight of 45 kg and transported direct to the abattoir for slaughter the following morning. Hot carcass weight (fats and kidneys in) and GR tissue depth for each carcass were recorded and provided to the producer and abattoir. Carcasses were delivered to butchers the day after slaughter.

Two weeks prior to the first delivery of lambs, 6 butchers were trained to produce the alternative cuts. Personal visits were made to the butchers in the week following carcass delivery to obtain their opinions on the most recent batch of carcasses and to check on the use and sales of alternative cuts.

Carcass data were analysed using the SYSTAT microcomputer package. Analysis of covariance was initially carried out to test for interaction between hot carcass weight and farm on GR depth. Multiple regression analyses were then performed to test for individual farm effects.
RESULTS

Average liveweight gain ranged between 2.0 kg/week (Farm 2) and 1.5 kg/week (Farm 7). Lambs on Farm 2 grazed with their mothers on 15 cm high clover-rich irrigated pasture. Lamb growth on Farm 7 was restricted by low pasture availability and internal parasitism; remedial management, which included drenching and depasturing the lambs on irrigated pasture, restored liveweight gain.

Producers commented that the cryptorchids grew faster than the wether lambs from the same drop and required little additional management. However, 5 producers expressed concern that cryptorchids might not finish before market prices fell and/or pastures dried off. Producers stated that they would include cryptorchids in their lamb enterprise in the future, with most adding that they would only consider it when price premiums are offered in the marketplace.

A total of 343 lambs were slaughtered. Carcass characteristics and the average age at slaughter for lambs from each farm are presented in Table 2.

Regression analyses indicated that the lambs from Farm 5 and Farm 7 were significantly leaner ($P < 0.05$) at the same carcass weight than the lambs from the other 5 farms; at 22 kg carcass weight, lambs from Farm 5 and Farm 7 were 1.5 mm and 6.0 mm leaner respectively.

<table>
<thead>
<tr>
<th>Farm</th>
<th>No. of lambs</th>
<th>Month born</th>
<th>Sire breed</th>
<th>Irrigation</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>41</td>
<td>March-April</td>
<td>Poll Dorset</td>
<td>Yes</td>
<td>Katamatite</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
<td>April-May</td>
<td>Poll Dorset</td>
<td>Yes</td>
<td>Katamatite</td>
</tr>
<tr>
<td>3</td>
<td>110</td>
<td>April-May</td>
<td>Poll Dorset</td>
<td>No</td>
<td>Holbrook</td>
</tr>
<tr>
<td>4</td>
<td>44</td>
<td>April</td>
<td>Bond</td>
<td>No</td>
<td>Rand</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td>June-July</td>
<td>South Suffolk</td>
<td>No</td>
<td>Cutgawa</td>
</tr>
<tr>
<td>6</td>
<td>27</td>
<td>May-June</td>
<td>Poll Dorset</td>
<td>Yes</td>
<td>Biggara</td>
</tr>
</tbody>
</table>

Table 2. Carcass characteristics and average age at slaughter for cryptorchid lambs from different farms

<table>
<thead>
<tr>
<th>Farm</th>
<th>Hot carcass weight (kg)</th>
<th>GR tissue depth (mm)</th>
<th>Average age (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (s.e.)</td>
<td>Range</td>
<td>Mean (s.e.)</td>
</tr>
<tr>
<td>1</td>
<td>21.8 (0.3)</td>
<td>18.4–27.0</td>
<td>12.1 (0.5)</td>
</tr>
<tr>
<td>2</td>
<td>24.0 (0.4)</td>
<td>19.5–28.0</td>
<td>15.8 (0.8)</td>
</tr>
<tr>
<td>3</td>
<td>21.7 (0.2)</td>
<td>16.0–28.0</td>
<td>12.5 (0.3)</td>
</tr>
<tr>
<td>4</td>
<td>21.5 (0.2)</td>
<td>18.0–25.3</td>
<td>12.1 (0.3)</td>
</tr>
<tr>
<td>5</td>
<td>21.4 (0.3)</td>
<td>19.5–25.5</td>
<td>10.7 (0.7)</td>
</tr>
<tr>
<td>6</td>
<td>20.8 (0.2)</td>
<td>16.5–26.8</td>
<td>11.4 (0.4)</td>
</tr>
<tr>
<td>7</td>
<td>21.7 (0.3)</td>
<td>18.6–25.3</td>
<td>6.5 (0.4)</td>
</tr>
<tr>
<td>Overall</td>
<td>21.6 (0.1)</td>
<td>16.0–28.0</td>
<td>11.8 (0.2)</td>
</tr>
</tbody>
</table>

The distribution of carcasses within GR and carcass weight ranges is presented in Table 3. When only carcasses in the 18-26 kg and 22-26 kg weight ranges are considered, 83% and 65% were of acceptable GR for the FARL and Elite Lamb programs, respectively.

Two butchers commented that the heavier, leaner carcasses did not suit their trade and the alternative cuts did not sell well. The remaining butchers (4 shops) commented that the cryptorchid carcasses provided more versatility than the traditional 16-19 kg carcasses but added that some of the meat felt ‘greasy’, ‘rubbery’ or ‘rammy’ and were concerned that it may have negative taste characteristics. The butchers were encouraged to cook the meat in their own homes in their usual way and taste it. Thereafter, only positive comments were made.

The butchers found that the alternative cuts sold well at a premium to the traditional cuts (e.g. leg schnitzels $8.99/kg v. leg of lamb $5.99/kg). Additionally, they commented that the display of alternative cuts had stimulated purchaser interest and discussion about lamb and the way in which it...
could be used in meals. After 4 deliveries, the butchers were requesting much larger quantities or similar carcasses on a weekly basis.

**DISCUSSION**

Lamb producers have demonstrated that they can use cryptorchids to produce the heavier, leaner lambs required for domestic and export market development with little change to their current management. The wide range in growth and carcass characteristics reflected the differences in grazing management, pasture quality, genotypes and animal husbandry procedures between farms; the restricted growth of lambs on Farm 7 highlight the effects that all of these factors can have on carcass fatness. Ease of management and marketing of lambs was improved where lambs were regularly weighed and run in separate liveweight groups.

Only 65% of the carcasses within the 22-26 kg range were within the 6-15 mm GR range, which is preferred for development of alternative cuts (Currie 1986) and targeted by the Elite Lamb program. Producers will need to be provided with specific management strategies or improved genotypes if they are to improve the proportion of cryptorchids meeting the Elite Lamb program specifications.

Most butchers found the larger, leaner carcasses were suitable for their trade and provided a means of profitably extending the lamb product range in their shops. Initial scepticism about meat quality was dispelled through their own taste tests and customer comments.

**ACKNOWLEDGMENTS**

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**REFERENCES**


