EFFECT OF COTTONSEED MEAL AND BARLEY STRAW DIET ON THE CARCASE QUALITY OF PRIME LAMBS

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Vipond et al. (1989) reported that the fat content of lamb carcases could be significantly reduced by the use of a diet of barley straw fed ad lib. and supplemented with fish meal with a relatively minor reduction in the saleable lean content. Surveys have demonstrated that the majority of consumers favour cuts of lamb from large lean carcases (Hopkins and Congram 1985).

The aim of this study was to measure the effect that a barley straw based diet supplemented with cottonseed meal (CSM) had on the carcase quality of second cross lambs.

Seventy two mixed sex Dorset x Border Leicester/Merino lambs of mean (+ s.e.) live weight 40.5 ±0.87 kg were randomised by sex, fasted live weight and fat depth into three treatment groups. The groups were (i), those slaughtered on day 0, (ii), those that continued to graze lucerne pasture and slaughtered on day 21, and (iii), those lot fed on ad lib. chaffed barley straw plus 100 g/day of CSM and slaughtered on day 36. Carcase measurement data are shown in Table 1.

Table 1 Mean cold carcase, GR, C and eye muscle area followed by standard errors of the means, for each treatment group. The predicted means for GR, C and eye muscle area were adjusted for group differences in cold carcase weight

<table>
<thead>
<tr>
<th>Slaughtered or Lucerne grazed or Lot fed</th>
<th>day 0</th>
<th>day 21</th>
<th>day 36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold carcase wt (kg)</td>
<td>19.7±0.4</td>
<td>21.9±0.4</td>
<td>17.2±0.4</td>
</tr>
<tr>
<td>GR (mm)</td>
<td>16.6±0.6</td>
<td>18.2±0.8</td>
<td>10.4±0.8</td>
</tr>
<tr>
<td>C (mm)</td>
<td>6.5±0.3</td>
<td>6.1±0.4</td>
<td>5.1±0.4</td>
</tr>
<tr>
<td>Eye muscle area (cm²)</td>
<td>13.6±0.3</td>
<td>14.5±0.6</td>
<td>15.5±0.5</td>
</tr>
</tbody>
</table>

Different letters within rows indicate significant differences (P<0.05)

GR: CARCASE tissue depth over the 12th rib measured 110 mm from the centre of the spinal column

C: CARCASE fat depth at the centre of the eye muscle adjacent to the 12th rib

The mean of GR and C was significantly less (P<0.05) in lot fed lambs than for the other treatment groups. The CSM diet also significantly increased the eye muscle area.

It can be concluded that a diet of ad lib. barley straw supplemented with CSM will significantly reduce the fat content and increase eye muscle area. Despite a significant reduction in carcase weight, this treatment produced lambs that better suited market requirements.


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