New Zealand Society of Animal Production online archive

This paper is from the New Zealand Society for Animal Production online archive. NZSAP holds a regular annual conference in June or July each year for the presentation of technical and applied topics in animal production. NZSAP plays an important role as a forum fostering research in all areas of animal production including production systems, nutrition, meat science, animal welfare, wool science, animal breeding and genetics.

An invitation is extended to all those involved in the field of animal production to apply for membership of the New Zealand Society of Animal Production at our website www.nzsap.org.nz

The New Zealand Society of Animal Production in publishing the conference proceedings is engaged in disseminating information, not rendering professional advice or services. The views expressed herein do not necessarily represent the views of the New Zealand Society of Animal Production and the New Zealand Society of Animal Production expressly disclaims any form of liability with respect to anything done or omitted to be done in reliance upon the contents of these proceedings.

This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.

You are free to:

- **Share**— copy and redistribute the material in any medium or format

Under the following terms:

- **Attribution** — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
- **NonCommercial** — You may not use the material for commercial purposes.
- **NoDerivatives** — If you remix, transform, or build upon the material, you may not distribute the modified material.

http://creativecommons.org.nz/licences/licences-explained/
EFFECT OF NUTRITION ON OVULATION RATE AND LITTER SIZE IN BOOROOLA-MERINO CROSS AND MERINO EWES

A. R. Bray*, G. W. Montgomery† and T. R. Wallis*

Two groups of ewes each containing 50 Booroola-Merino cross (BMx) and 50 Merino (M) ewes were assigned to either a high (HP) or a low (LP) plane of nutrition on pasture for 12 weeks until the end of the first 17 days of mating. All ewes were then laparoscoped to determine ovulation rates. There was an 8 kg difference in mean liveweight between HP and LP ewes at laparoscopy. Ovulation rate, the proportion of ewes with multiple ovulations, and litter size (lambs born/ewes lambing) were all higher in BMx ewes than in M ewes ($P < 0.05$).

**TABLE 1: EFFECT OF PLANE OF NUTRITION ON BMx AND M EWES**

<table>
<thead>
<tr>
<th></th>
<th>BMx</th>
<th></th>
<th></th>
<th>M</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HP</td>
<td>LP</td>
<td>HP</td>
<td>LP</td>
<td></td>
</tr>
<tr>
<td>Liveweight at laparoscopy (kg)</td>
<td>52.1</td>
<td>44.8</td>
<td>53.3</td>
<td>44.0</td>
<td></td>
</tr>
<tr>
<td>Ovulation rate</td>
<td>2.33</td>
<td>1.93</td>
<td>1.53</td>
<td>1.20</td>
<td></td>
</tr>
<tr>
<td>Proportion with multiple ovulations</td>
<td>0.83</td>
<td>0.67</td>
<td>0.50</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>Litter size</td>
<td>1.90</td>
<td>1.65</td>
<td>1.37</td>
<td>1.19</td>
<td></td>
</tr>
</tbody>
</table>

There were significant effects of nutrition on the proportions of multiple ovulations and litter size but no significant breed by plane of nutrition interactions. The HP BMx group had more ewes with three and four ovulations and fewer with single ovulations than the LP BMx group.

*Tara Hills High Country Research Station, Omarama.
†Invermay Agricultural Research Centre, Mosgiel.