IMPROVING DAILY THROUGHPUT IN SHEEP ARTIFICIAL INSEMINATION PROGRAMMES

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Although artificial insemination (AI) of sheep on a commercial scale is not new to the world, there have been no large scale sheep AI programmes in Australia prior to 1973. In Western Australia, AI commenced on a commercial scale in the 1973-74 breeding season when 19,342 merino ewes were inseminated, and in the 1974-75 breeding season, 35,820 ewes were inseminated. In both seasons, a ram/ewe ratio of approximately 1 : 2000 was used. Semen was collected with an artificial vagina, extended with heat-treated fresh cows milk (usually 1:l) and 0.1 ml of the extended semen was introduced into the cervix with the assistance of a surgeon's headlamp and a duckbilled speculum. Consequent fertility was comparable with that resulting from paddock mating.

Experience in the 1973-74 breeding season identified two major problems which were affecting efficiency in the AI operation.

Purely manual handling techniques such as supporting the hindquarters of the ewes over a rail, generally limit one inseminator to a throughput of 200 ewes per day and involve support staff in heavy manual work. In the 1973-74 season, a manually operated AI cradle involving a three man team achieved a maximum daily throughput of 320 ewes.

Large fluctuations in the numbers of ewes coming into oestrus each day was a major problem. On some days, more than 350 ewes were ready for insemination and this was beyond the capacity of the team particularly when air temperatures in the work area exceeded 400C. On other days, with lower numbers of ewes in oestrus, staff were under utilised.

Two solutions were tried in the 1974-75 breeding season. The number of ewes coming into oestrus each day was controlled using an oestrus synchronising agent (Fairnie, Cumming and Martin, 1976) and a pair of compressed air-operated cradles were designed by Mr. Denton Roberts of Meckering, W.A. to replace the manual cradle.' A two man team with a pair of compressed air cradles achieved a maximum daily throughput of 600 ewes and could comfortably inseminate 500 ewes per day. This compared very favourably with the throughput of the three man team with the manual cradle.

In addition, the compressed air cradles allowed sheep to be handled speedily with minimum stress. The mechanism held sheep firmly and did not require operators to handle sheep in any way once the ewe walked into the cradle, except to inseminate her. The manual cradle used to let ewes fall head-first onto the floor when the'release mechanism was operated in addition to a good deal of rough handling in loading the ewe into the cradle.

The combined effects of oestrus synchronising agents and the compressed air operated cradle makes organisation of sheep AI programmes more efficient in terms of labour and capital utilisation. In addition, rams used in co-operative breeding programmes can be utilised more effectively.

REFERENCE

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