

## PMSG AS AN AID TO INCREASED SIZE IN THE SECOND LITTER

N.E. JOHNSTON\*, T. STELMASIAK\* and D.F. EVANS†

\* 'Attwood' Veterinary Research Laboratory, Department of Agriculture, Westmeadows, Victoria 3047, Australia and † Wonga Projects Piggery, P.O. Box 50, Young, New South Wales 2594, Australia

Many sows which have weaned their first litters have reproductive problems. They usually take longer to come into oestrus and be mated, and their second litter size is often small. These problems can be related to the fact that they are under nutritional stress during their first lactation (Love, 1979).

One solution to this problem has been to provide extra feed for these first-litter sows, both during lactation and from weaning to mating. Furthermore, these first-litter sows are not mated less than 12 days after weaning, which usually means they are mated at their second oestrus. Love (1979) reported results from one piggery which was using this program.

In the trial reported here it was decided to use Pregnant Mare Serum Gonadotrophin (PMSG) and Human Chorionic Gonadotrophin (HCG) in first-litter sows to see if the problems of delayed weaning to mating interval (WMI) and smaller second litter sizes could be overcome.

First-litter sows were randomly allocated to the treatment or control group. The morning after weaning, the treatment group were given an intramuscular injection of 1,000 i.u. PMSG, and the control group received a lactose injection (lactose is the carrier salt for this PMSG). Three days later the treatment sows were given 1,000 i.u. HCG intramuscularly, and the control group another lactose injection. Preliminary results are presented here, and final results will be given at the Congress.

As can be seen in Table 1 there is little difference in mating or farrowing rates. The small difference in average WMI is deceptive, and Table 2

gives a clearer picture of the situation. Over twice as many of the treated first-litter sows were mated in the first week after weaning. This is a great advantage to the pig producer, and a savings in feed costs as well as space in the mating shed.

The other significant advantage of treatment is shown in Table 3. These figures of an extra 1.5 piglets born alive per litter compare very favourably with those of 1.0 reported by Love (1979). Another piggery using the program of delaying mating in first-litter sows has reported an extra 1.5 piglets born alive per litter (T. Hope, personal communication, 1982), but the use of PMSG has the extra advantage of reducing feed costs and space required in the mating area.

The use of HCG is not necessary, but it may assist in better synchronizing the sows (Christensen and Teague, 1975), since 85% of the treated sows were mated four to six days after weaning. The weaning rate and future reproduction of the sows in this trial, and the results of another trial using PMSG alone will be reported.

References

Christensen, R.K. and Teague, H.S. (1975) Synchronization of ovulation and artificial insemination of sows after lactation. *J. Anim. Sci.* **41** : 560-563.

Love, R.J. (1979) Reproductive performance of first parity sows. *Vet. Rec.* **104** : 238-240.

TABLE 1

MATING FOLLOWING PMSG TREATMENT

	<u>Treatment</u>	<u>Control</u>
No. of animals	89	104
No. mated	81 (91%)	94 (90%)
No. culled (for other reasons)	8	10
No. farrowed so far	47	49
No. returned to oestrus	5	7
Approx. farrowing rate	93%	92%
Average weaning to mating interval	11.3 days	15.2 days

TABLE 2

WEANING TO MATING INTERVAL

<u>WMI (days)</u>	<u>Treatment</u>	<u>Control</u>
4	14 )	0 )
5	20 ) 40/47	9 ) 18/49
6	6 ) 85%	4 ) 39%
7	0 )	5 )
8-14	0	10
15-21	0	4
22-28	4	11
29-35	1	5
36-42	0	1
43-49	2	1

TABLE 3

LITTER SIZE FOLLOWING TREATMENT WITH PMSG

	<u>Treatment</u>	<u>Control</u>
Total born/litter	10.81	9.16
Born alive/litter	9.96	8.49
Born dead/litter	0.85	0.67
% born dead	7.9	7.4
No. of litters	47	49
No. of piglets born alive	468	416