THE EFFECT OF HORMONE TREATMENT ON REPRODUCTIVE PERFORMANCE OF PIGS

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INTRODUCTION

Pig insemination is often follower by many problems related to estrus detection, insemination time and decrease in fertility and liter size. These problems may be partly solved by using hormonal preparations that regulate the estrus cycle of pigs. The use of hormonal preparations may be successful, provided there is enough knowledge about the physiological and morphological changes taking place in the pig's body during natural estrus cycle and on using hormonal preparations.
Therefore, the purpose of the present study was to determinate the effects of synthetic ginadotropin releasing hormone (Gn RH) Surfagon on reproductive traits of pigs.

MATERIALS AND METHODS

The experiments were carried in two stages. At first the ovulation time has been determined by the number of ovulated follicles and changes of gonodal hormones. Afterwards, the effects of Surfagon on the conception rate and litter size of pigs have been determined.
The experiments were carried out With 7 to 9-month old gilts of 100-120 kg weight that were divided into two control and experimental groups.
The synchronization of estrus was attained by administration of Suissinchron, pregnant mares serum (PMS) and Choriogonin (ChG) for control pigs and by replacement of Choriogonin by Surfagon for the experimental group of pigs.
Suissinchron was administrated to control pigs for 20 days in turn. In 24 hours after the pig treatment with suissinchron, 2000 activity units of PMS were injected into muscles. Choriogonin injection at a rate of 500 activity units followed PMS injection in 79 hours.
The experimental group of pigs was treated in the same way, except that Choriogonin replaced by Surfagon at a rate of 10 mkg. (2 ml) per pig for induced ovulation.
Blood samples for testing gonadotropin hormones were taken 10 times for each pig. The basal LH level was determined by taking blood samples two hours before synchronization of ovulation. The blood samples were taken for the second time during the synchronization of ovulation, and after synchronization the blood samples were taken eight times. The interval between taking the first three samples made 2 hours and between the last five 5 hours.
The evaluation of ovulation was determined by slaughtering of pigs in 65 hours after the treatment of pigs.
The second experiment was designed to determine the effects of Surfagon on the conception rate and litter size of pigs. Thirty pigs were selected for treatment with hormonal preparations by the above described scheme.
The pigs were inseminated in 40 hours after synchronization of ovulation and inseminated repeatedly in 16 hours after the first insemination.

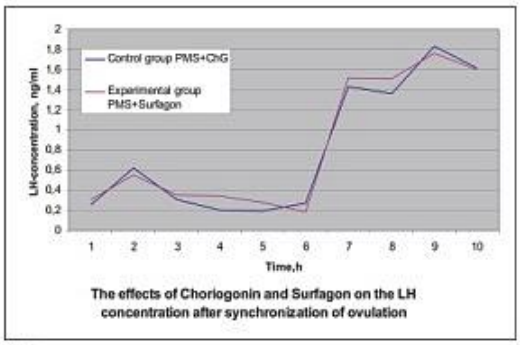

Fig. 1

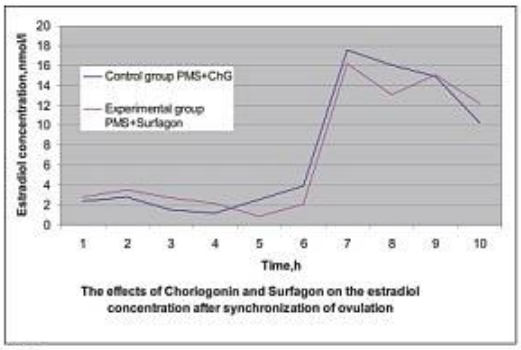

Fig. 2

RESULTS

Table 1. The effect of Surfagon on follicle ovulation

Group	No. of pigs	Total number of ovulation	Number ovulation per pig	Number of non – ovulated follicles	Percentage of ovulated follicles
Control group (PMS+ChG)	6	108	14,8 0,7*)	0	100 %
Experimental group (PMS+Surfagon)	6	114	15,5 1,2*)	2	98,26 %

*) P>0,9

Table 2. Effect of Surfagon on the conception rate and litter size of pigs

Group	No. of pigs	Conception rate %	Total litter size	Average litter size per sow
Control group (PMS+ChG)	15	86,7	139	10,7
Experimental group (PMS+Surfagon)	15	80,0	142	11,8

*) P>0,9



CONCLUSIONS

The results of the study indicated that Surfagon, if applied by the suggested scheme, was a suitable preparation for synchronization of ovulation.
On Surfagon treatment of pigs, by the above described scheme, the first insemination of pigs in recommended in 40 hours after synchronization of ovulation with a repeat insemination in 16-18 hours after the first insemination.