

## FARROWING SYNCHRONIZATION AND INDUCTION OF THE GILTS WITH PROSTAGLANDINES

### INDUCEREA ȘI SINCRONIZAREA FĂTĂRILOR LA SCROFIȚE CU PROSTAGLANDINE

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*The researches were made to induce and synchronize the farrowing during the working schedule. In the trial we have been testing two hormonal products Estrumate and Prosolvin to two groups of gilts, in the 113<sup>th</sup> day of gestation. After the administration of the prostaglandin synthetic analogs we follow up the time when the gilts were farrowing, the prolificacy and the parturition loss. The percent of gilts that were farrowing during the working schedule was 48.84 at the group with Estrumate and 50.00 at the group with Prosolvin (difference non significant,  $\chi^2$  test,  $p>0.05$ ). The percent of gilts that were farrowing after the working schedule 32.56 at the group with Estrumate and 16.67 at the group with Prosolvin (difference non significant,  $\chi^2$  test,  $p>0.05$ ). The prolificacy was bigger for the group that were farrowing during the working schedule ( $10.57\pm 0.60$  pigs/gilt for the group with Estrumate and  $11.43\pm 0.12$  pigs/gilt for the group with Prosolvin) comparing with the gilts that were not farrowing during the working schedule ( $10.21\pm 0.79$  for the group with Estrumate and  $10.75\pm 0.24$  pigs/gilt for the group with Prosolvin) and significant ( $t$  test  $p<0.05$ ). The parturition loss was smaller at the gilts that were farrowing during working schedule ( $0.67$  pigs/gilt for the group with Estrumate and  $0.58$  pigs/gilt for the group with Prosolvin) comparing to those that were farrowing after the working schedule ( $1.43$  pigs/gilt for the group with Estrumate and  $1.20$  pigs/gilt for the group with Prosolvin), but not significant statistically ( $t$  test  $p>0.05$ )*

**Key words:** gilt, farrowing induction, synchronization, Estrumate, Prosolvin.

#### Introduction

Farrowing induction and synchronization it is a useful biotechnic for swine reproduction. The ability to induce parturition in a group of sows may permit a reduction in neonatal piglet mortality, by allowing the stockperson, for example, to assist sows having a difficult farrowing. The current methods used for farrowing induction and synchronization are using natural prostaglandins or synthetic analogs. The administration of Cloprostenol and Lutalyse will induce the parturition in 22 to 40 hours after administration (3, 4). The Oxytocin administration at 22 hours after the PgF<sub>2</sub>  $\alpha$  will group the parturition during the light day for about 70% from the sows (1). By using Revolyse, the average time

until the parturition will start it is 28.2 hours, when the parturition is induced in the 114<sup>th</sup> day of gestation and 37.8 hours, when the parturition is induced in the 113<sup>th</sup> day of gestation (2).

The aim of this experiment was to induce and synchronize the farrowing by using two products with prostaglandin synthetic analogs, Prosolvin and Estrumate.

### Materials and Methods

The experiment was carried out in a Smithfield P1 reproduction farm.

To realize the induction and synchronization of the farrowing, we used two prostaglandin synthetic analogs, Prosolvin and Estrumate. The biological material was represented by 91 pregnant gilts, Meishan line. Estrumate is a prostaglandin synthetic analog that contains 0.25 mg Cloprostenol/ml. Prosolvin is a prostaglandin synthetic analog that contains 7.5 mg Luprostiol/ml.

The pregnant gilts were randomly splinted in two groups. First group was made from 43 pregnant gilts that were i.m. injected 1.5 ml Estrumate in the 113<sup>th</sup> day of gestation. The second group was made from 48 pregnant gilts that were i.m. injected 1.5 ml Prosolvin in the 113<sup>th</sup> day of gestation.

After the administration of the prostaglandin synthetic analogs we follow up the time when the gilts were farrowing, the prolificacy, the still born and mummies piglets.

### Results and Discussions

The main reproductive indices that we researched in this paper were the gilts that are farrowing during the stockperson working schedule, completely or only in part, the unsuccessful farrowing, the prolificacy and the farrowing loss.

The results regarding the moment were the gilts were farrowing are represented in table 1.

**Table 1**  
**Results of the using of Estrumate and Prosolvin upon the farrowing induction**

Specification	Estrumate		Prosolvin		Significance
	n	%	n	%	
Gilts that were farrowing during the working schedule	21	48.84	24	50.00	0.912 ns
Gilts that were farrowing after the working schedule	14	32.56	8	16.67	0.077 ns
Gilts that were farrowing only in part during the working schedule	8	18.60	16	33.33	0.111 ns
Gilts with unsuccessful parturition	5	11.63	2	4.70	0.182 ns
Number of gilts/group	43		48		

$\chi^2$  test, not significant  $p > 0.05$

As we may notice from table 1, the number of gilts that were farrowing during the working schedule was 21 (48.84%) from the group with Estrumate and

24 (50.00%) from the group with Prosolvin. The difference was statistically not significant ( $\chi^2$  test,  $p>0.05$ ).

The number of gilts that were farrowing after the working schedule was 14 (32.56%) at the group with Estrumate and 8 (16.67%) at the group with Prosolvin. The difference was statistically not significant ( $\chi^2$  test,  $p>0.05$ ).

The number of gilts that were farrowing only in part during the working schedule was 8 (18.60%) at the group with Estrumate and 16 (33.33%) at the group with Prosolvin. The difference was statistically not significant ( $\chi^2$  test,  $p>0.05$ ).

The number of gilts with unsuccessful parturition was 5 (11.63%) at the group with Estrumate and 2 (4.70%) at the group with Prosolvin. The difference was statistically not significant ( $\chi^2$  test,  $p>0.05$ ).

The prolificacy and the parturition loss are represented in table 2.

**Table 2**

**The prolificacy and the parturition loss**

Specification	Estrumate		Prosolvin	
	Prolificacy	Loss	Prolificacy	Loss
Gilts that were farrowing during the working schedule	10.57±0.60 <sup>A</sup>	0.67 <sup>a</sup>	11.43±0.12 <sup>c</sup>	0.58 <sup>a</sup>
Gilts that were farrowing after the working schedule	10.21±0.79 <sup>a</sup>	1.43 <sup>a</sup>	10.75±0.24 <sup>a</sup>	1.20 <sup>a</sup>
Gilts that were farrowing only in part during the working schedule	10.62±1.10 <sup>a</sup>	0.51 <sup>a</sup>	11.00±0.26 <sup>a</sup>	1.19 <sup>a</sup>

t test A-c  $p<0.05$ , a-a  $p>0.05$

For the group of gilts that were farrowing during the working schedule, the prolificacy was 10.57±0.60 pigs/gilt for the group with Estrumate and 11.43±0.12 pigs/gilt for the group with Prosolvin (difference statistically significant t test  $p<0.05$ ). The piglets loss was 0.67 pigs/gilt for the group with Estrumate and 0.58 pigs/gilt for the group with Prosolvin (difference statistically not significant, t test  $p>0.05$ ).

For the group of gilts that were farrowing after the working schedule, the prolificacy was 10.21±0.79 pigs/gilt for the group with Estrumate and 10.75±0.24 pigs/gilt for the group with Prosolvin (difference statistically not significant t test  $p>0.05$ ). The piglets loss was 1.43 pigs/gilt for the group with Estrumate and 1.20 pigs/gilt for the group with Prosolvin (difference statistically not significant, t test  $p>0.05$ ).

For the group of gilts that were farrowing only in part during the working schedule, the prolificacy was 10.62±1.10 pigs/gilt for the group with Estrumate and 11.00±0.26 pigs/gilt for the group with Prosolvin (difference statistically not significant t test  $p>0.05$ ). The piglets loss was 0.51 pigs/gilt for the group with Estrumate and 1.19 pigs/gilt for the group with Prosolvin (difference statistically not significant, t test  $p>0.05$ ).

## Conclusions

1. Most of the gilts, 48.84% from the group with Estrumate and 50.00% from the group with Prosolvin were farrowed during the working schedule (difference not significant  $\chi^2$  test,  $p>0.05$ ).
2. The percent of gilts that were farrowing after the working schedule was 32.56 at the group with Estrumate and 16.67 at the group with Prosolvin (difference not significant  $\chi^2$  test,  $p>0.05$ ).
3. The prolificacy was bigger at the gilts that were farrowing during the working schedule comparing with the gilts that were not farrowing during the working schedule and significant between the two treatments (t test  $p<0.05$ )
4. The parturition loss was bigger at the gilts that were not farrowing during the working schedule comparing with the gilts that were farrowing during the working schedule, but statistically not significant (t test  $p>0.05$ ).

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