

**SINCHRONIZATION OF FERTILE ESTRUS USING
EXOGEN GONADOTROPHINS (eCG/hCG) IN CICLIC
GILTS**

R. Barrera¹, A. Wüst² and I. Videla Dorna³

**INTERNATIONAL CONGRESS ON ANIMAL REPRODUCTION
STOCHOLM, SWEDEN, 2000**

SINCHRONIZATION OF FERTILE ESTRUS USING EXOGEN GONADOTROPHINS (eCG/hCG) IN CICLIC GILTS

R. Barrera¹ , A. Wüst² and I. Videla Dorna³

¹ Wheelright, Santa Fe, Argentina. ² Pig Ranch, Cañuelas, Buenos Aires, Argentina³ Area de Endocrinología, Dept. Fisiopatología, Facultad de Ciencias Veterinarias Universidad Nacional del Centro de la Provincia de Buenos Aires , Tandil, Buenos Aires, Argentina and Syntex S.A., Roque Saenz Peña 811, 4B, Buenos Aires, Argentina.³

INTRODUCTION

Synchronization of estrus in pigs seems to be achieved with the application of a compound consisting of small amounts of eCG and hCG (400 IU and 200 IU respectively) (1). Nevertheless, the percentage of estrous and fertility from induced ones is lower in gilts than the obtained in sows (2). The objective of this work was showed the efficacy of the hormone combination (eCG and hCG) in induction and synchronization of fertile estrus in cyclic gilts and then comparing with the post induced natural estrus.

MATERIALS AND METHODS

A total of 85 Landrace-Large White crossbreed gilts between 6 and 7 months of age and weight of 110 kg were used. The animals were assigned at random to 3 experimental groups: T1 (n=30), injected IM with 400 IU of eCG and 200 IU of hCG in 5 mL solvent (Duogestal[®] Lab. Syntex S.A. Argentina), and inseminated in induced estrus, T2 (n=25), treated with eCG/hCG compound and inseminated in the following natural estrus and T3 (n=30), injected with 5 ml of solvent, inseminated in natural estrus. Following parameters were evaluated: 1.- Average days of presentation from first estrous after treatment. 2.- Observe the presentation of the induced post treatment and following natural estrus . 3.- Conception rate. Signs of estrus were rated as follows: 2 - vulva red and swollen, standing estrus, sometimes including vaginal discharge, 1 - vulva red and swollen but not accompanied by standing estrus and 0 - no outward physical or behavioral signs. Gilts were inseminated twice with fresh semen during estrus grade 2 in induced (T1) or during natural grade 2 estrus (T2 and T3). Pregnancy was diagnosticated ultrasonically 27 after AI. Results were evaluated with Chi Squares in order to define its significance.

Groups	n	Treatment	Parameters evaluated	Artificial Insemination
T1	30	eCG/hCG ^(*)	ITE, EP, CR	Induced estrus
T2	25	eCG/hCG	ITE, EP, CR	Natural post induced estrus
T3	30	Solvent	ITE, EP, CR	Natural estrus

^(*)400 IU+ 200 IU Duogestal[®] Lab. Syntex S.A. Argentina)

ITE: Interval Treatment Estrus ; EP: Estrus Presentation ; CR: Conception Rate

RESULTS

Treatment- induced estrus interval T1 and T2 = 5,7 days Estrus presentation: T1, 2=60% (18/30): 1 and 0= 40 % (12/30); T2, Natural (post induced estrus) 2=100 % (25/25), 1 and 0 = 0; T3, 2=100 % (30/30), 1 and 0 = 0. T1/T2 p<0.001, T1/T3 p<0.001 T2/T3 p<0.4 Conception rate, T1 = 66 % (12/18), T2 = 84% (21/25), T3 = 83 % (25/30) T1/T2 p<0.001, T1/T3 p<0.001 T2/T3 p<0.9. In T2 the second estrous (natural) was

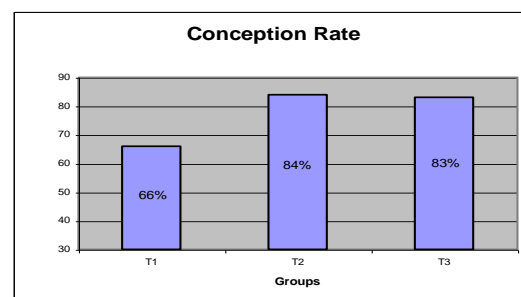
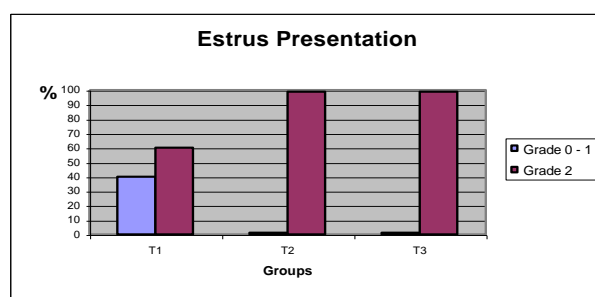
100% (25/25) $24,5 \pm 3$ days after the induced one, the third estrus (second natural one) was 100 % (25/25), $22,3 \pm 4$.days after the second one and the fourth estrus (third natural) was 100 % (25/25) $19,5 \pm 1$ days after the third one.

Group	Treatment -Estrus Interval (days)	Estrus Presentation Grade 2 ^(*)	Estrus Presentation Grade 0-1 ^(**)	CR ^(***)
T1	5.7	60% (18/30)a	40 % (12/30)	66% (12/18)a
T2	5.5	100 % (30/30)b	0	84% (21/25)b
T3	-	100 % (25/25)b	0	83%. (25/30)b

ab p<0.001 (Chi Squares)

(*)vulva red and swollen, standing estrus, sometimes including vaginal discharge; (**) 1, vulva red and swollen but not accompanied by standing estrus 0, no outward physical or behavioral signs of estrus..

(***)Pregnancy was diagnosed ultrasonically 27 after AI.



DISCUSSION

The use of exogen gonadotrophins got synchronize the estrus in cyclic gilts. The grade 2 estrus was lower on induced than natural one. (T1 Vs T2 and T3) and conception rates of induced estrus was smaller than natural ones (T1 Vs T2 and T3). In T2, all the animals showed the post induced natural estrus with high synchronicity, and a fertility as a natural one (T3). This study indicate that eCG/hCG compound could be used to achieve the synchronization of estrus cycles with good conception rates using the natural post induced estrus.

CONCLUSIONS

- ⇒ The use of exogen gonadotrophins got synchronize the estrus in cyclic gilts.
- ⇒ The grade 2 estrus was lower on induced than natural one. (T1 Vs T2 and T3)
- ⇒ Conception rates of induced estrus was smaller than natural ones (T1 Vs T2 and T3).
- ⇒ In T2, all animals showed the post induced natural estrus with high synchronicity, and a fertility as a natural one (T3).
- ⇒ This study indicate that eCG/hCG compound could be used to achieve the synchronization of estrus in gilts with good conception rates using the natural post induced estrus.

REFERENCES

1. Schilling, E. et al 1972. Vet Rec. 91:471-474
2. Karalus, U. et al 1990. An. Reprod. Sci, 22:235-241

Email: ividela@arnet.com.ar