SYNCHRONIZATION OF ESTRUS IN LOCAL AND LARGE WHITE YORKSHIRE SOWS UNDER COASTAL CLIMATIC CONDITIONS

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ABSTRACT

To get farrowing in a season when there is demand for the piglets is important from economic point of view in pig industry. This can be achieved with other technique of synchronization of estrus. To study the response of local nondescript sows and Large White Yorkshire sows to synchronization, an experiment invading 72 sows was designed. Prostaglandin F2a analogue (Dinoprost) was used for the synchronization of estrus in the sows at the dose rate of 7.5 mg/animal and 10mg/animal. The results indicated that synchronization of estrus was better in group where 7.5 mg Dinoprost was given.

Key words: Estrus Synchronization, Sows.

INTRODUCTION

Goa state is an important tourist place in the Indian subcontinent where on an average 1.4 to 1.5 million tourist visit every year; it almost equals the local residential population. Climate of state is hot and humid and the temperature ranges between 18°C to 35°C. Though mining and tourism contribute to the income of the state, agriculture and allied sectors continue to play a major role in the state's economy. Most of unemployed educated youth in the state are from farming community. Most of Goan population is non-vegetarian and tourism adds to the demand for meat production. All these factors contributes to make Goa state congenial development of livestock industry. There is a good demand for pork and pork products like sausages due to which pig rearing is an important side business. Pig rearing is mostly of backyard in nature. In backyard pig rearing farmers keep local pigs where as semi-intensive and intensive units exotic pigs and crossbred pigs are reared. Existence of good scope because of tourism is leading farmers to switch overt to systematic and scientific pig rearing instead of rearing backyard scavenging pigs. With the intention to study the acceptability of locak and its crosses with exotic pigs ICAR has initiated AICPR on pigs. AICRP – pig center at Goa is undertaking studies on local nondescript and its crosses with Large White Yorkshire. In scientific pig rearing reproductive management plays a vital role and decides the output of production. It is very important to have farrowing in a season when there isdemand for the piglets. This can be achieved by synchronization of estrus. Many methods to synchorize estrus like use of eCG/hCG(PG600R), Oral progesterone prostaglandin, transport induced estrus are known but the use of prostaglandin (Prostaglandin (Prostaglandin F_2a analogue) is comparatively easy and cost effective (Glen W Almond 1996, Jaskowski, J. M. 2005). To study the response of local nondescript sows and Large White Yorkshire sows to synchronization, an experiment was designed and a total of 72 sows were included for study.

MATERIALS AND METHODS

Experiment was conducted in pig unit from AICPR-pigs Goa Centre ICAR Research Complex fro Goa, Ela, OldGoa for a period of three years. Experimental animals consisted of 46 Large White Yorkshire sows and 36 Local nondescript sows. Age of these sows ranged from 16 months to 28 months. The weight of large white Yorkshire females ranged from 80-110kgs, whereas local nondescript females ranged from 22-38kgs.

The experimental females were subjected to synchronization of estrus, 55 days post farrowings. All the experimental females were maintained in well ventilated pens. Standard feeding allowance was provided to all the experimental animals. Clean drinking water was provided to all the animals, adlib.

Prostaglandin $F_{2\alpha}$ analogue (Dinoprost) was used for the synchronization of estrus in the sows. Experimental animals were divided in six groups. Group, A,B,C consisted animals of Large White Yorkshire breed and A1, B1, C1 of Local nondescript animals. Group A and A1 served as control in Large White Yorkshire and Local nondescript and did not receive any treatment. Group B, B1, C and C1 were treatment groups. Group B and B1 was given 2ml i.e. 10mg of Dinoprost deep intramuscularly single injection. Group C and C1 was given Dinoprost 1.5 ml (7.5 mg/animal) deep intramuscularly. All the animals were observed for estrus. Visual observations for swollen Vulvae, estrus discharge and attraction towards boar were the observations recorded. Females were taken to boar to observe attraction towards boar as presence of boar influences the estrus in sows (Gerritsen, R et al 2005; Kemp, B, et al 2003). These observations were recorded for a period of 120 hours from the time of treatment. Observations were made at the interval of every 12 hours. Confirmed estrus sows were subjected to natural service.

RESULTS AND DISCUSSION

In this study, Group A and A1 were the control groups for Large White Yorkshire and local pigs, where no treatment was given. This group consisted of six animals each. Only one animal i.e. 16.66 percent exhibited estrus in the control group for Large White Yorkshire whereas no animal exhibited estrus in control group for local pigs. Observations indicated that in Group one i.e. B and B1 exhibition of estrus was 50 percent and 40 percent respectively. In this group animals were injected 10mg of Dinoprost. In group C and C1 which was under treatment – 2 where 7.5 mg Dinoprost was given, exhibition of estrus was 85 percent and 70 percent respectively. These results indicated that induction/synchronization of estrus was better in group C and C1. In case of Large White Yorkshire where 7.5 mg Dinoprost was given results were better as compared to all other groups.

In this study, time taken for exhibition of estrus was observed and these observations were made every 12 hours from time of injection of Dinoprost. Time taken for exhibition of estrus was compared among the groups by CRD ANOVA. Average time taken in group A, B and C was 95.33, 87.50 and 60.30. hours respectively. There was statistically significant difference in time taken to respond to the synchronization treatment at 1% and 5% level of significance i.e. treatment group c which was given 7.5 mg of Dinoprost exhibited estrus earlier than group B and control group. In case of group A1, B1 and C1 i.e. groups of local pigs average time taken for exhibition of estrus was 100.00, 92.400 and 78.00 hours respectively. Time taken to respond to synchronization treatment differed statistically at 5% level of significance i.e. treatment group C1 which was given 7.5 mg of Dinoprost exhibited estrus earlier than that of group B1 and control group A1. It can be concluded that the optimum dose of Dinoprost (PG $F_{2\alpha}$ analogue) for estrus synchronization is 7.5mg/ sow under coastal climatic condition of Goa. When the dose is increased there is a reduction in estrus induction. Similar observations are made by (Shimatsu Y, et.al.2004) where altrenogest was used in ascending dose for synchronization.

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