Research Article

Haryana Vet. (April, 2019) 58 (S.I.), 50-52

TRAINING AND LIBIDO ASSESSMENT IN BOAR DURING SEMEN COLLECTION

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Received : 01.03.2019; Accepted : 29.03.2019

ABSTRACT

Artificial insemination facilitates rapid use of superior quality boar as single ejaculate can be utilized for insemination of multiple numbers of sows. A total of four Large White Yorkshire (LWY) and three crossbred (LWY × Zovawk) boars were selected at the age of eight months for training of semen collection at All India Coordinated Research Project (pig) and Instructional Livestock Farm Complex (pig), College of Veterinary Sciences and Animal Husbandry, Central Agricultural University, Selesih, Aizawl. Training was carried out daily in the morning before feeding using a homemade portable "wooden dummy sow". In the present investigation the LWY boars trained significantly ($P<0.01$) within short period compared to crossbred boars. The libido of the boars with respect to latency to mount, reaction time and ejaculation time differed significantly ($P<0.01$) between the breeds of boars with higher libido was observed in pure LWY boars. All the selected boars were trained successfully without hormonal intervention externally.

Key words: Boar training, Libido character, Wooden dummy

Livestock form an important component of the Indian economy in general and that of agricultural sector in particular. The overall contribution of livestock sector in total Growth Domestic Product (GDP) is nearly 4.11% during 2012-13. As per Livestock census (2012), pork contributes 5.23% of the country's total animal protein production. However, pig production trend in India is continuously declining from 13.52 million during 2003 to 10.29 million in 2012 (Anon, 2012). Artificial insemination (AI) is the most popular biotechnological tools to disseminate quality germplasm in the female reproductive tract during estrus in order to enhance both quality and quantity of milk and meat producing livestock. Like in cattle and buffalo, AI is spreading in the piggery sector in India, particularly in the North Eastern-region. AI in pig is much easier than that of other domestic livestock but training of boar for semen collection plays a big constrain and very limited numbers of research has been observed in this part and no standard protocol has been developed till date. Therefore, the present study was designed to train the boars for semen collection and to study their service characteristics during semen collection.

MATERIALS AND METHODS

A total of four healthy Large White Yorkshire (LWY) and three crossbred (LWY × Zovwak) boars of about eight months old from All India Coordinated Research Project (Pig) and Instructional Livestock Farm Complex (Pig), College of Veterinary Sciences and Animal Husbandry, CAU, Selesih, Aizawl, were selected with different parent lines for training for semen collection using a portable homemade 'wooden dummy sow'. All the boars were reared under standard managemental feeding regime and housed in well-ventilated pens with adjacent exercising paddock. Initially, the boars were separated and kept in individual pen. After a month, the boars were exposed to the dummy sow in the respective pen daily in the morning before feeding. The dummy sow was hold firmly during training when boar used to play or mount over it. Following initial exposure to the dummy sow, the boar exhibited behavioural characteristics like biting, licking, pushing and mounting. The libido of boar during training period was enhanced by mimicking breeding sound or mating song and digital manipulation of the penis. The long preputial hairs were trimmed at 2.0-2.5 cm apart from the prepuce to avoid pain while holding of erected penis. When the boar exhibited innate sexual eagerness, mounted over dummy sow and then semen was collected. Semen was collected consecutively for three days from the day of first collection to impress the boar and to set up a tendency to mount over the dummy sow. Subsequently, semen collection was carried out routinely with minimum three days interval without affecting quality of the semen. Semen collection was carried out using gloved hand technique when the boars mounted over the dummy sow by holding protruded and erected corkscrew end of the penis firmly. An intermittent pulsatile digital pressure was maintained tightly on the penis to obtain complete ejaculation. At least three consecutive ejaculates were collected from each boar during training. Subsequently collection was done in an adjacent common semen collection pen over a fixed IMV made dummy sow (IMV® Technologies, France).

During collection, libido characteristics of the boars were recorded in terms of latency to mount, reaction time and ejaculation time. The latency to mount was recorded as the interval taken by the boar from the moment of entering the collection area to the moment of first mounting over the "Dummy" (Lindsay, 1969 and Tamuli, 1982). The reaction time was recorded as the interval taken by the boar from the moment of entering the collection area

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to the moment of the beginning of ejaculation of semen (Lindsay, 1969). The ejaculation time was recorded from the moment when the boar's penis was locked in the hand and ejaculation commenced, to the moment when erection ceased and the boar dismounted (King and Macpherson, 1973).

The significant differences between the groups were determined by independent sample t-test using the Statistical Product and Service Solutions, Version 20.0 software (SPSS Inc., Chicago, IL, USA).

RESULTS AND DISCUSSION

The duration of training taken by the boars for semen collection were depicted in the Table 1. It was observed in the present study that LWY boars required significantly (P<0.01) less duration to trained than the crossbred boars, with minimum invest of 9 days. On the other hand, crossbred boars required almost three times longer duration of training than the LWY breed for semen collection. Initially, the crossbred boars were found much scared to the dummy sow and the operator; but exhibited ferocity while introduced the dummy sow alone into the pen. These might be due to the presence of Zovawk inheritance, the indigenous breed of Mizoram, which are extremely ferocious in nature (Mayengbam and Tolenkhomba, 2017).

In the present study all the boars were kept individual pen before training. Boar usually develops a vice known as pederasty or anal copulation with penmate. Hence, keeping boar alone prevents pederasty and increased magnetism towards dummy sow during training (Chutia *et al.,* 2017b). It was observed in the present study that making breeding sound or matting song during training more easily directed the boar towards the dummy sow. However, digital manipulation of penis along with prepuce induces sexual eagerness that stimulated erection and protrusion of penis.

In the present study the mean latency to mount in LWY boar was 1.70 minutes (Table 2). It was found to be higher than that observed by Chutia and co-workers (2017b) in Hampshire boars. The mean latency to mount in crossbred boar was recorded to be 2.07 minutes with a range from 1.26-3.2 minutes which was higher than that recorded by Gogoi (1996) in Hampshire crossed boars. Statistical analysis revealed that the latency to mount significantly (P<0.01) differ between the groups. The variation of the findings might be due to the genetic make-up of the boars and environmental factor. The mean reaction time in LWY boars was recorded to be 2.89 minutes (Table 2). The result of the present study was in close agreement with the observation reported by Chutia (2010) in Hampshire boars. But lower than reported by Murty (1974) in Large White boars, Tamuli (1982) in Landrace boars and Bujarbaruah (1989) in Hampshire and Large Black boars. In the present study significantly (P<0.01) shorter reaction time was observed in LWY than the crossbred boars. The differences in findings with earlier workers might be due to the genetic make-up of the boars, the environmental factors, managemental factors and frequency and procedure of semen collection.

Table 1:
Duration of training required for semen collection of Large White Yorkshire (LWY) and crossbred (LWY × Zovawk) boars

Breed of boar	No.	Duration of training (days)	Mean ± SE	P-value
LWY (n=4)	1	9	12.0 ± 1.8	<0.01
	2	10		
	3	12		
	4	17		
Crossbred (n=3)	1	24	28.7 ± 1.6	
	2	29		
	3	33		

In the present study, the mean ejaculation time in LWY boars was 9.01 minutes with a range from 6.14-14.27 minutes which was found to be higher than that recorded by Gogoi (1996) in Hampshire crossed and Chutia and co-workers (2017b) in Hampshire boars. In the present study the mean ejaculation time in crossbred boars was 7.67 minutes with a range from 5.1-10.29 minutes (Table 2). It was in close concurrence with the observation produced by Gogoi (1996) in Hampshire crossed boars; higher than that reported by Tamuli (1982) in Landrace, Bujarbaruah (1989) in Hampshire and Large Black and Chutia (2010) in Hampshire boars. The ejaculation time was found to be significantly (P<0.01) longer in LWY than crossbred boars. The differences in libido characteristics of boar recorded in the present study with that of earlier workers might be due to the variation in the genetic make-up, age, environmental factors, body weight of the

Table 2 :
Service behaviour of Large White Yorkshire (40 collection) and crossbred boars (30 collection)

Parameters	LWY		Crossbred		P - value
	Mean±SE	Range	Mean ± SE	Range	
Latency to mount (min)	1.70±0.06	1.11-2.56	2.07±0.08	1.26-3.2	<0.01
Reaction time (min)	2.89±0.08	2.0-4.04	4.64±0.33	2.2-8.52	<0.01
Ejaculation time (min)	9.01±032	6.14-14.27	7.67±0.21	5.1-10.29	<0.01

animals and managemental factors.

CONCLUSION

It was evident from our study that boar training did not require any hormonal administration externally to stimulate sexual eagerness during training period for semen collection. The homemade portable "wooden dummy sow" was found to be very effective for training the young boars. It was also observed that the libido of the crossbred boars was poor than the pure LWY boar but successfully trained all the boars with continuous psychological intervention.

ACKNOWLEDGEMENTS

The authors thankfully recognize the accessibility of the necessary facilities provided by the Vice-chancellor, Central Agricultural University, Lamphelpat, Imphal, India and the Dean, College of Veterinary Sciences and Animal Husbandry, Central Agricultural University, Selesih, Aizawl-796014, for smooth conduction of the research work.

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