EFFECT OF DIFFERENT HERBAL DRUGS ON AVERAGE LITTER SIZE OF TAMWORTH×DESI BREED SOWS

SUDHIR KUMAR[1*], A.K. SINHA[2], SUDERSHAN KUMAR[3] AND SHARAD KUMAR[4]

Department of Animal Reproduction, Gynaecology and Obstetrics
Ranchi Veterinary College, Birsa Agriculture University, Ranchi-834 006, Jharkhand, India.

Received : 30.10.2012 Accepted : 27.05.2013

ABSTRACT

This experiment was undertaken to study the effect of herbal preparations viz; Femelin, Lecorin plus and Asoka cordial on reproductive trait such as litter size in 55 Tamworth×Desi breed sows allocated into 4 groups. The superiority in litter size in Lecorin Plus treated group (T_2) and Asoka cordial treated group (T_3) were observed during entire preweaning period and also up to weaning day ie.56th day. However, the effect had statistically non-significant on litter size.

Keywords: Herbal Drugs, Litter size, Piglet, Tamworth×Desi breed sows.

From the dawn of civilization till today plants have been used as prime source of almost all medicines. Scientists in India and abroad have realized the basic value of indigenous medicines in the treatment and increasing reproductivity in livestock. There is enough possibility that improvement in the efficacy in swine reproduction can result by appropriate application of herbal preparations. Litter size mainly depends on the rate of ovulation, fertilization, embryonic mortality and prenatal death (Roberts, 1971 and Laing *et al.,* 1988). Obviously, the number of oocytes released from follicle at time of ovulation will set the upper limit of litter size for any particular gestation period. Reproductive performance is measured primarily by the number of livings pigs at birth in sows under normal system of weaning. Litter size at birth and weaning is one of the most important criteria. Three herbal drugs Femelin, Lecorin Plus and Asoka Cordial (Herbal (APS) Pvt.Ltd) were used to study their effect on litter size in Tamworth×Desi breed sows.

The study was made on a total of 55 Tamworth×Desi breed of sows during different stages of reproduction namely periparturient, post farrowing and around weaning stage maintained at Pig Breeding Farm, Ranchi Veterinary College, Ranchi. These sows were allocated to 3 treatment groups and 1 control group and the drugs were administered as per the schedule mentioned in the table below.

Part of M.V.Sc thesis submitted by first author to Birsa Agricultural University,Ranchi.

[1*] Corrosponding Author, Assistant professor, Division of VGO, F.V.Sc&AH (S K U A S T-J), R. S. Pura, Jammu. Email:sudhir_skuast@yahoo.com
2. Retired Dean Ranchi Veterinary College, Ranchi.
3. Assoc. professor & Head, Division of VGO, F.V.Sc&AH (S K U A S T-J), R. S. Pura, Jammu.
4. Assistant professor, Division of TVCC, F.V.Sc&AH (S K U A S T-J), R. S. Pura, Jammu.

TREATMENT SCHEDULE

Group	Drugs	Stage of Reproduction	Dose	Route of drug administration
T_1 (n=15)	Femelin	Peripartuient	25ml b.i.d. for 10 days	Orally
T_2 (n=15)	Lecorin plus	Post farrowing	25ml b.i.d. for 10 days	Orally
T_3 (n=15)	Asoka Cordial	Weaning	25ml b.i.d. for 10 days	Orally
C (Control) (n=10)	No treatment	----------	----------	---------

The sows were maintained on identical ration schedule, uniform housing and manage mental condition. Sows in advance pregnancy were separated from the herd and transferred to one of their farrowing pens. The newly born piglets were provided with paddy straw particularly during winter season to protect the piglets against cold effects. The piglets were assisted to suckle their dam and allowed to remain with her till weaned. The actual number of offspring (piglets) born per sow per farrowing at birth as well as total number of piglets rose by each sow at an interval of 7 days up to weaning day were calculated.

The average litter sizes of sows at birth were recorded as 7.27±0.55, 7.80±0.80, 7.67±0.46 and 7.40±0.58, at 7th day 7.00 ±0.52, 7.67 ±0.78, 7.20 ±0.39 and 7.10 ±0.57, at 14th day 6.93 ±0.56, 7.53± 0.76, 7.13± 0.40 and 7.00± 0.58, at 21nd day 6.67 ±0.51, 7.33± 0.75, 7.00± 0.35 and 6.90 ±0.55, at 28th day 6.60± 0.51, 7.20 ±0.76, 6.86± 0.31 and 6.80 ±0.47,at 35th day 6.60 ±0.51, 7.20 ±0.76, 6.67± 0.33 and 6.60± 0.34,at 42nd day 6.53 ±0.53, 7.07 ±0.75, 6,67 ±0.33 and 6.60 ±0.34 and at 49th day 6.53 ±0.53, 6.53 ±0.53, 6.60 ±0.34 and 6.60 ±0.34 in T_1, T_2, T_3 and control groups respectively. The higher litter size in treated group T_2 and T_3 was observed up to 42nd day as compared to T_1 and control while it was same in group T_1 & T_2 and T_3 and control. Litter size in different treatment groups of sows recorded in this experiment were higher than those reported by Mohanty and Nayak (1986), Lakhani and Bhadoria (1988) and Garcia *et al.*(1989).Larger litter size was recorded by Singh *et al.*(1986),Sharma and Mishra (1989) and Mishra *et al.*(1990).The table also indicated that average litter size at the end of 56th day (weaning day) for T_1,T_2,T_3 and control group as 6.53±0.53, 6.93±0.75,6.53±0.34 and 6.50±0.37 respectively. It was observed that litter size was highest again in T_2 group followed by T_3 & T_1 and then control group. These findings were higher than those reported by Mohanty and Nayak (1986) and Lakhani and Bhadoria (1988) but lower than the value of Sharma and Mishra (1989) and Mishra *et al.* (1990) and almost similar to that of Singh *et al.* (1986). Analysis of variance revealed non-significant effect of herbal treatments on litter size.

Variation in litter size might be due to age of the dam (Pathak and Ranjhan,1972), parity (Singh and Devi,1997a) gestation length (Lynch *et al.*,1982), interval from weaning to conception (Dagorn *et al.*,1984), season of birth (Mohanty and Nayak,1986), breed (Mishra *et al*,.1989b), month of farrowing (Chhabra *et al.*,1996) and herd (Dierckx *et al.*, 1996). It was concluded from trial that the superiority in litter size were observed in Lecorin Plus treated group (T_2) and Asoka cordial treated group (T_3) during entire preweaning period. These drugs are cheap and may be used to improve the profit among pig farmers. As sufficient literatures are not available on these drugs present findings are incomparable and further more study is needed.

REFERENCES

Chhabra, A.K., Gaur, G.K., Bhatia, S.S., Raheja, K.L.and Pal, Satya. (1996). Studies on litter traits in Desi and crossbred pigs. *Indian J.Anim.Res.*, **30**:134-136.

Dagorn, J., Saulnier, J. and Greau, P. (1984). Variation in litter size between the first and second litters. In 16 emes Journees de la Recherche en France, 1984.Paris, *France, Institut National dela Recherche Agronomique,* 145-152. (Cited from *Anim. Breed. Abstr.*, **54:**1761).

Dierckx, S.M.A.G., Ramos, A.De.A and Nunes, J.R.V. (1996). Environmental factors affecting litter traits in pigs. 1. Litters size *Veterinaria e Zootecnia.*, **8:**99-106, (Cited for *Pig News and Information.*, **18:**3219).

Garcia, S.K., Barbosa, A.S.and Camargos, M. (1989). Reproductive performance of Piau pigs. *Colegio Brasileiro de Reproducao Animal.*, 143-148. (Cited from *Pig News and Information.*, **12**:3858).

Laing, J.A., Brinley Morgan, W.J.and Wagner, W.C. (1988).Fertility and Infertility in Veterinary practice.4th Ed. ELBS, Bailliere Tindall.

Lakhani, G.P.and Bhadoria, S.S (1988). Study on litter size in indigenous pigs. *Indian J.Anim.Res.*, **22**: 20-22.

Lynch, P.B., Kearney, P.A.and O'Grady, J.F. (1982). What influences birth weight of piglets? *Farm and Food Res.*, 13(**3**):88-89(Cited from *Anim. Breed.Abstr.*, **50**:6428).

Mishra, R.R, Sharma, G.C., Prasad, S.and Lal, K. (1989b). Litter size of Indian pigs at birth. *Indian J.Anim.Sci.*, **59**: 616-617.

Mishra,R.R.,Lal,K.and Prasad,S.(1990a). Factors affecting litter weight of Landrace pigs. *Indian J.Anim.Prod.Mgmt.*, **6:**205-206.

Mohanty,S.and Nayak,J.B(1986). Reproductive performances of Large White Yorkshire pigs and their crosses with indigenous pigs in hot humid climate of Orissa; a note. *Indian J.Anim.Prod.Mgmt.*, **2**:134-137.

Pathak,N.N.and Ranjhan.S.K.(1972). Effect of two levels of energy and protein intake on the weight gain of pregnant Large White pigs, their litter size and litter performance. *Indian J.Anim.Sci.*, **42**: 1048-1052.

Roberts, S.J. (1971).Veterinary obstetrics and genital diseases (Theriogenology), 2nd Ed.CBS Publication and Distributors (India).

Sharma, G.C.and Mishra, R.R (1989). Studies on reproductive traits of Large White Yorkshire pigs. *Indian J.Anim.Prod.Mgmt.*, **5:**185-187.

Singh, S.K., Sharma, B.D., Dubey, C.B.and Singh, R.L (1986). Litter traits and pre-weaning mortality of Large White Yorkshire pigs. *Indian J.Anim.Sc.*, **56:**459-460.

Singh, S.K.and Devi, A.Ameeta (1997a). Studies on some pre-weaning traits in Exotics,Desi and their crossbred pigs under tropical climate. *Indian Vet.Med.J.*, **21**: 288-291.