Indian J. Anim. Prod. Mgmt. Vol. 29 (3-4) 72-74 (2013)

SEXUAL SEPARATION AND GROWTH RATE IN GHUNGROO PIG

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Received : 09.12.2014 ***Accepted : 20.02.2014***

ABSTRACT

The study was conducted at NRC on Pig (ICAR), Guwahati, Assam to standardize the best age to separate male and female piglets of recently registered Ghungroo pigs for optimizing production performance. Forty Six Ghungroo Piglets of 0.90±0.01 Kg birth weight were selected for the study. Three different treatments of differential age of separation of male and female were done, viz., under control, twelve males and females were separated at an age of 2 months; under T_1, Forteen males and females were separated at an age of 3 months; and under T_2, twenty males and females were separated at an age of 4 months. Significantly ($p<0.05$) superior body weight in both males and females was obtained in Control (73.6±5.6) as compared to T_1 (70.2±6.5) and T2 (70.7±5.5). Similarly, average daily gain in control was significantly superior. Thus it can be suggested that separation of males and females at an earlier age, viz., just after weaning can fetch superior growth rate and thus can improve the profitability of farmers.

Key words : Ghungroo, Sexual Separation, Pig, Growth Rate.

The purpose of sexual separation is to prevent the males having the opportunity to mate with the females if they become sexually active at a very early age[1]. With pigs going for meat, this may not be a problem, as they aren't likely to be kept long enough to be that mature, but with bacon pigs – or 'early developers' as is the case with indigenous pigs[3], it could be an issue. There is no report available regarding standard age of separation of male and female piglets in recently registered breed of West Bengal, the Ghungroo. So, the present investigation was aimed to develop suitable age in Ghungroo pigs at which separation of male and female piglets should be carried out to achieve maximum growth rate.

MATERIALS AND METHODS

The present investigation was carried out on forty six Ghungroo piglets from 4 litters (21 Males and 25 Females) maintained at Institute Farm of National Research Centre on Pig (ICAR), Rani, Guwahati, Assam from September to April 2012. Piglets were divided into three groups out of four litters in each group having uniform birth weight of 0.9±0.1 Kg and were maintained under similar managemental conditions. In Group-I (Control), separation of 12 male and female piglets were done at 2 months of age, in Group-II (Treatment-1), separation of 14 male and female piglets were done at 3 months of age and among rest 20 male and female piglets pigs in Group-III (Treatment-2), separation was done at 4 months of age. All the piglets were housed with their dam in indoor pens (12.0 ft x 10.0 ft with concrete flooring) having 6-10 piglets per pen till weaning. Water was available *ad lib* at all times manually with the help of labour. Creep ration (Maize-56.5 parts, Wheat bran-10.0 parts, Soybean meal-12.0 parts, Ground Nut

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Cake-19.0 parts, Mineral Mixture-2.0 parts and Salt-0.5 parts) of 20% CP and 2779 Kcal/ Kg) were offered to them from 15th day @ 15 gm per piglet till weaning. The creep ration was increased at the rate of 15 gm per piglet to consume 90 gm creep ration per piglet at the time of weaning at 8 week. All piglets were given 0.5 ml Imferon Injection at 4th and 14th day of age to prevent from piglet anaemia.

Body weight of all the piglets was recorded at weekly interval from birth to 20 weeks of age and then monthly upto 8 months of age. The data were analyzed by analysis of variance technique[4].

RESULTS AND DISCUSSION

The overall mean weight of male pigs after 8 months of age was observed as 72.4±5.5 in case of sexual separation at 2 months of age which was significantly superior to other treatments of separation at 3 and 4 months of age (Table-1). The similar trend was observed in female Ghungroo pigs also. The female pigs have attained superior body weight than their male contemporaries. This may be attributed to early onset of male hormones in case of males as compared to relatively late release of female hormones by females causing differential growth rates in males and females[2].

The overall growth rate (upto eight months of age) was observed as 297.29 in males and 302.08 g/day in females when sexual separation was done at 2 months of age. This was significantly better growth rate as compared to animals when sexually separated at 3 and 4 months of age (Table-2). Mortality was non-significant among the various groups under study (Table-2), which suggests no interference in immune reactivity of the pigs.

Table-1. Mean body weight (Mean±SE) for two treatments of sexual separation duration treatments in Ghungroo pigs

Weeks/ Particulars	Body weight (Kg)					
	2 months (12)- C		3months (14)-T_1		4 months (20)-T_2	
	Male	Female	Male	Female	Male	Female
1 m	3.9±0.81	3.8±0.4	3.9±0.41	3.8±0.61	3.9±0.41	3.8±0.7
2m	8.6±0.6	8.4±0.9	8.0±0.8	8.1±0.7	8.1±0.9	8.0±0.6
3m	16.4±1.6	15.7±1.8	16.2±1.4	15.4±1.9	15.9±1.7	15.4±1.5
4m	32.5±3.2	31.5±3.6	31.7±3.5	31.1±3.0	31.2±2.5	30.4±3.5
5m	43.4±3.6	42.0±2.5	43.4±3.8	43.4±3.9	42.6±3.5	42.5±3.9
6m	52.7±3.8	53.6±3.5	52.6±4.5	53.2±3.5	52.2±3.1	51.8±4.0
7m	61.34±4.5	62.3±5.5	60.3±5.6	60.3±4.5	59.1±3.9	58.4±4.5
8m	72.4±5.5[a]	73.6±5.6[a]	70.1±6.2[b]	70.2±6.5[b]	69.1±4.5[b]	70.7±5.5[b]

[ab] Columns with different superscript differ significantly at 5% level of significance.
Values in brackets represent number of piglets

Table-2. Pre-weaning and Post-weaning growth characteristics in different sexual separation treatments in Ghungroo pigs

Particulars	Pre-weaning			Post-weaning (After weaning to 8 months)			Overall ADG (Birth to 8 months of age)		
	Treatment-2	Treatment-1	Control	Treatment-2	Treatment-1	Control	Treatment-2	Treatment-1	Control
ADG in Males (gms/day)	125.43[ab]	122.86[a]	134.82[b]	338.89[a]	345.00[ab]	354.44[b]	283.67[a]	287.42[ab]	297.29[b]
ADG in Females (gms/day)	125.00	125.71	130.36	345.00[a]	348.33[a]	362.22[b]	288.08[a]	290.42[a]	302.08[b]
Mortality (%)	1	1.2	1.1	2.1	2.5	2.3	3.1	3.6	3.4

[ab]Different superscripts in a sub-column differ significantly at 5% level of significance.

CONCLUSION

Separation of male and female piglets of Ghungroo pigs at 2 months of age can yield superior growth rate as compared to delayed separation.

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