A RARE CASE OF HIGHEST LITTER SIZE WITH COMPLICATED PREGNANCY IN A CROSSBRED GILT

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ABSTRACT

Highest litter size of 22 numbers in a 75 per cent crossbred (Large White Yorkshire X Desi) gilt was observed; however, dam and all the piglets died due to pre-partum complications. The reasons and the earlier records of such high litter size have been discussed.

Key words: High litter size, Complicated pregnancy, Crossbred pigs, India

INTRODUCTION

Litter size at birth is one of the important economic traits. It is influenced by both genetic and environmental factors. But, litter size is difficult to improve by selection, unless high selection pressure is applied in large populations. Moreover, the heritability for the trait is also low, making limited progress in subsequent selection. The higher number of litter size at birth is directly proportionate to number of ova discharged in both the horns and their spacing arrangements in uterus, fertility of the boar, good management and feeding. The present case is unique in nature and first recorded in India with highest number of litter size in a 75 per cent crossbred gilt (LWY X Desi) with complicated pregnancy.

CASE HISTORY AND OBSERVATIONS

A case of complicated pregnancy was reported in All India Co-ordinated Research Project on Pigs at Pig Breeding Unit of Livestock Research Station, Kattupakkam in the month of May, 2010. A crossbred gilt mated with a crossbred boar was apparently healthy, which did not show any symptoms of illness for up to 3 months of mating.

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On 108th day of gestation, the gilt had developed laboured breathing and became recumbent laterally. The animal was treated with multi-vitamins and calcium borogluconate and other supportive managemental measures were taken for ease in parturition. The second day also the condition persisted and the animal had high fever (41.8° C). The treatment mainly consisted of intravenous injection of antibiotics. But on the same day evening, the animal died. On post-mortem examination, interestingly, a total of 22 numbers of dead fetuses (14 males and 8 females) of varying sizes and weights (0.558 to 1.480 kg) was found (Fig.). Right side uterine horn had 10 and left side horn had 12 fetuses. The huge quantum of dead fetuses was weighing around 16.5 kg in *toto*.

DISCUSSION

Pigs usually multiply very quickly and gilts reach sexual maturity at age of less than one and can produce two litters a year. On an average, eight to 10 live piglets are produced after 112 to 117 days of gestation period which produces 20 piglets per year from a crossbred sow. Usually, the maximum litter size for the feral pig was reported to be 8 to 10 (Hagen *et al.*, 1984). But in this present study, high litter size was found in a crossbred gilt. So far, maximum litter size was recorded in the AICRP unit of Livestock research Station, Kattupakkam, to be 15 in 75 per cent crossbred pigs, that too not in the first farrowing. Moreover, this high litter size of 22 was noticed unusually in first farrowing itself in the present case.

According to the Guinness Book of Records, the world's largest litter contained 37 piglets (Livestock in China, 2010). Hence, the record of 22 piglets observed in the present study is totally unusual, but a record high in India. But in the present study, all the piglets were dead or stillborn. This finding was in agreement with Rutherford *et al.* (2011) who reported the ranges of large litter size were from 14 to 20 and very large litter size from 21 and above. Further, they opined that increased litter size was associated with increased total piglet mortality. The prevalence of stillbirths was seen to be higher as a consequence of selection for large litters. Though the later being the valuable finding, all other crossbred pigs did not bear large or very large litters, despite being selected for high litter size and body weight.

In the present study, the main cause of death of dam was due to intra-abdominal pressure that led to laboured breathing. The intra-abdominal pressure became high due to space constraint in the crossbred gilt, which weighed only 72 kg at the time of breeding. More of calcium drainage from the mother to developing fetuses at later stages of pregnancy led to lateral recumbency of the dam. The status of pregnancy became complicated due to many factors such as number of piglets, intra-uterine space constraint, pressure created in the thoracic cavity consequent to the heavy uterine mass, primiparous nature of the gilt, etc. These factors led to death of piglets in uterus. This complication had finally produced toxemia, pyrexia and subsequently death of the gilt. Commercial Animal Health Divisions such as Pfizer and Newsham Choice Genetics gave the reasons for this kind of conditions that heavy uterus (usually with more than 14 piglets) would lead to deviate the uterus downward along with the abdominal wall causing the birth canal to form an "S" curve. Because of this, the uterus could not contract enough to push the piglets up and over the pelvic rim.

Vallet (2000) suggested that fetal death due to limitations of uterine capacity began to occur shortly after day 30 of pregnancy and up to day 40; but it continues to be limiting until farrowing. The present condition was reported in a crossbred pig with *desi* and Large White Yorkshire inheritance in which the uterine capacity will always be lesser when compared to the exotic varieties. Moreover, the affected pig was primiparous. Critical review of literature revealed that the Chinese Meishan pig was known to have greater litter size because of increased uterine capacity (Vallet *et al.*, 1998).

Intra-uterine crowding in crossbred pigs would lead to piglet mortality or yield many runt piglets. While aiming for high litter size, effective care must be taken at the time of pregnancy such as scanning to ascertain the number of fetuses and their management procedures for better growth. These measures ultimately lead to improve the health condition of the sows at the time of farrowing, thereby curtailing the loss in economy through death of dams.

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Fig. Highest litter size (22 Nos.) in a 75 per cent crossbred gilt (All litters died due to pre-partum complications)