

COMUNICACIÓN CORTA

## Wild boar (*Sus scrofa ferus*): productivity index in an experimental outdoor farm

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### ABSTRACT

The European wild boar (*Sus scrofa ferus*) is adapted to the natural conditions of an extensive region in Argentina. Its production has been recently developed in an outdoor system, corn and soybean-based rations. This work makes some observations and provides data on parameters measured between parity and 21 days old, in summer and winter. No differences were found in reproductive traits between both seasons. The litter size was  $4.9 \pm 2.4$  offspring born alive (based in 18 litter gilts), the number of males born was higher than the number of females (1.26:1); the number of teats was around 10 in both sexes. Average weight at birth was  $0.923 \text{ kg} \pm 0.254$ ; males were heavier than females. Weight at 21 days of age was  $3.01 \text{ kg} \pm 1.33$ .; no difference between sex was found. These data may be useful in the development production projects on wild boars in captivity in an outdoor system.

*Key words:* (wild boar), (litter size), (birth weight), (outdoor).

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## **Jabalí europeo (*Sus scrofa ferus*): índices de productividad en un granja experimental en sistema al aire libre**

### **RESUMEN**

El jabalí europeo (*Sus scrofa ferus*) está adaptado a una extensa región en Argentina. La producción comercial en cautiverio, basada en raciones de maíz y soja, está comenzando a desarrollarse. Este trabajo realiza algunas observaciones y provee información sobre parámetros obtenidos a los 21 días de vida de camadas nacidas en invierno y en verano. No se encontraron diferencias para caracteres reproductivos entre las diferentes épocas. El tamaño de camada al parto fue de  $4,9 \pm 2,4$  nacidos vivos (sobre 18 primerizas); el número de machos nacidos fue mayor que el de hembras (1,26:1); el número de pezones fue de alrededor de 10 en ambos sexos. El peso medio al nacimiento fue de  $0,923 \pm 0,254$  kg y los machos resultaron más pesados que las hembras. El peso a los 21 días fue de  $3,01 \pm 1,33$  kg; no encontrándose diferencia entre sexos. Esta información será de utilidad en el desarrollo de proyectos de producción de jabalíes en cautiverio en sistemas al aire libre.

*Palabras clave:* (jabalí europeo), (camada), (peso al nacimiento), (aire libre).

### **INTRODUCTION**

The European wild boar (*Sus scrofa ferus*) is adapted to the natural conditions of an extensive region in Argentina, where a growing population has developed, frequently interbreeding with the domestic pig. From its original habitat it has spread towards Uruguay, the south of Chile and Brazil. It has been bred in zoos since the beginning of the past century. However, a more recent captive production has been raised in an outdoor management system<sup>12</sup>.

In the case of wild animals in Europe<sup>9</sup>, young females have from 2 to 4 offspring in their first litter while older ones have from 6 to 8. In natural conditions<sup>3</sup>, using analysis models for growth parameters, an average birth weight, average litter weight and weight weaning (at around 3 months) of 0.830, 3.4 and 10 kg, respectively, were found.

The mating month within the main breeding

season did not affect litter size<sup>6</sup>.

In Britain, members of the British Wild Boar Association report an average litter size of 5 piglets, which are weaned at 12 weeks of age, with around 400 breeding sows in the farms<sup>7</sup>.

Weight and size of the dams, the number of fetuses, their sex and weight of 58 pregnant wild boar from a free ranging population in central Spain<sup>6</sup> were recorded. The weight of male fetuses was heavier than that of females; in over 81% of cases the heaviest fetus was male. It is suggested that larger size of male fetuses influences their development and survival.

In Canada<sup>8</sup>, estimating production costs of European wild boar herds in captivity, establishes that a litter size of 5 piglets at birth is considered acceptable, while weaning takes place after 60 days with an average weight of 10 kg. In Alberta<sup>1</sup>, the key factors that would

influence the success of the commercial enterprises are that females could average 5 piglets born alive per litter; weaning must occur at 8 to 12 weeks; the weaning weight would be around 5 kg at 60 days of age; and preweaning death loss of 10%. There are 20 European wild boar breeding farms in the region<sup>2</sup>.

The aim of this work was to describe productive parameters of pure wild boars raised in captivity in an outdoor breeding system, such as average size of the litter at birth, live weight at birth and at 21 days old, survival rate, sexual ratio and number of teats and to compare them with up-to-date literature.

## MATERIALS AND METHODS

The experimental farm is located in Alberti (Buenos Aires province, Argentina), in the plains of the pampas, and it has the following climatic features<sup>4</sup>: 968 mm annual mean rainfall; 23.2 °C mean temperature in January, the hottest month, and 9.1°C in July, the coldest month. Soils are included in the Molisols with predominance of sandy types.

The wild boar production has been developed in an outdoor system, corn and soybean-based rations.

Only two sources of pure wild boars are available in Argentina: the zoos, (mainly in Buenos Aires and Córdoba), where records have been kept since the beginning of the last century, and Pedro Luro Wild Animal Reservation in La Pampa. Since both have very small herds of wild boars, the availability of pure animals is significantly limited. Parents used to obtain the offspring subjected to evaluation belong to two Argentinean zoos.

For reproductive traits, eighteen litters from first parity pure-bred gilts were used. These litters were sired by natural random mating with five purebred unrelated boars.

Eight births were recorded in the summer of 1998/1999 and ten in the winter of 1999.

The reproductive stage took place in captivity in an outdoor breeding system in paddocks with pastures, adequate arch type shelter, wallowing places, availability of natural shade and drinking water from nipple-type watering devices. Dry feed commonly used for sows was supplied at 2 kg.day<sup>-1</sup>.

The piglets were identified individually on their first day of life and weight, sex and number of teats were recorded. They were weighed again at 21 days.

Sampling data were adjusted to the assumptions of a parametric test (independence of errors, normal distribution) and, therefore, a parametric test was used (Student's "t" Test) to compare average values among weights according to sex and number of teats<sup>11</sup>. The data were processed by means of the SAS Program, Release 6.12<sup>10</sup>.

## RESULTS

Table 1 shows the recorded traits at farrowing and piglets live weight at 21 days, both for summer and winter because no differences were found between seasons.

More males than females were born ( $p < 0.05$ ).

Significant differences for individual weight at birth ( $p < 0.05$ ) but not for weight at 21 days of age between sex were found.

The survival rate between birth and 21 days old was 68.2%. The low value found was due to the fact that 4 young mothers suddenly and unexpectedly attacked their piglets and killed 12 of them.

No significant differences for number of teats of both sexes were found.

Table 1: Litter size, birth and 21 days weight and number of teats. (n= 18 litters of wild boar gilts)

	<b>Born alive (n)</b>	<b>Birth weight (kg)</b>	<b>Weight at 21 days(kg)</b>	<b>Number of teats</b>
Male	49	0.95 ± 0.23	3.05 ± 1.2	9.96 ± 0.68
Female	39	0.89 ± 0.92	2.98 ± 1.5	10.06 ± 0.87
Significance	*	*	<b>n.s.</b>	<b>n.s.</b>
Average/litter	4.9 ± 2.4	0.92 ± 0.25	3.01 ± 1.3	10.00 ± 0.79

\* Differences statistically significant ( $p < 0.05$ ); **n.s.** not significant

## DISCUSSION AND CONCLUSIONS

The seasonal effects in litter size agree with previous literature<sup>5</sup>.

Litter size was bigger than that quoted for first parity females<sup>9</sup>. From the information quoted<sup>3</sup> a litter size of 4.1, which is lower than that found in this study, was calculated. Different authors propose a similar figure to the one recorded for a reproductive herd in balance, including first parity and adult females<sup>7,8,1</sup>.

The differences of live weight between sex agrees with previous suggestion<sup>6</sup> that heavier weight of male fetuses influence their development at parity.

Survival rate at 21 days old was lower than the value previous indicated<sup>1</sup>.

Mean weight per litter (4.5 kg) resulted heavier than that indicated<sup>3</sup>.

Recorded birth weight in this trial was heavier than the ones in wildness. More males than females were born<sup>3</sup>.

No previous publications were found about piglet live weight at 21 days old and number of teats.

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