

## PROLIFICACY AND LOSS OF PIGS AT THE PRIMIPAROUS SOWS DEPENDING OF SOWING SEASON

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**Abstract:** *Good results in the breeding sector are achieved at primiparous sows only by implementing the best farm management because primiparous have a lower prolificacy in the first two gestations and the season when sowing is made has negative effects on gestation losses. The lower prolificacy is achieved in gilts sown in July-November and the highest in the spring and winter season. The largest parturition losses is achieved in primiparous sown in October with  $2,12 \pm 1,03$  piglets/sow born and  $0,91 \pm 0,32$  piglets mummified/sows, and at the lowest ones, at primiparous sown in March  $1.12 \pm 0.22$  dead piglets and  $0.63 \pm 0.11$  mummified piglets*

**Key words:** *primiparous sows, prolificacy, season, piglets*

### INTRODUCTION

Achieving economic results in raising and exploiting the swine, represented by high prolificacy and the achievement of high weight in short periods of time, depends on how the breeding grows and fattening process of the swine youth [3,7,9,10].

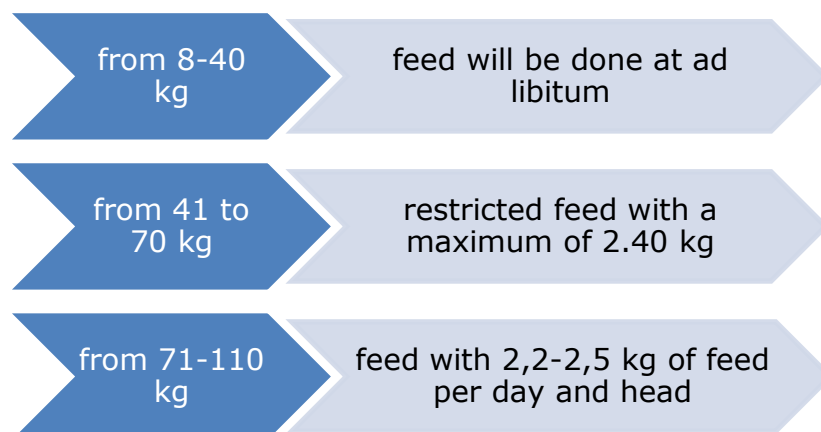
Reproductive activity at swine well-managed contributes to the increase in the number of flocks, even if the first swine in the first two pregnancies do not fully exhibit their genetic parameters. In primiparous sows the number of ovules matured does not exceed 16, but their number increases at the following ovulations [1,5,8, 13].

The difference between mature ovules released during ovulation and the number of piglets born is due to embryonic mortality, which at swine is 30-35% from the fertilized ovules [2,11,14]. It is found that embryonic mortality is lower in primiparous but has an upward trend in future gestations, so the number of piglets grows up to the fourth birth with up to 6 piglets.

Studies undertaken show that heat in primiparous sows occur frequently in the morning between 4-10 and in the evening between 19 and 22, which is why reproduction management should determine the optimal time for sowing, because at gilts the signs of sexual maturity occur at the age of 4 months but the optimum sowing time is when bodyweight is installed at 6 months and the weight of 110-115 kg [4,6].

The sowing of gilts to an inappropriate body weight has negative repercussions on the development of fetuses and, implicitly, the production of piglets weighing less than 1.20 kg and with low viability [12,15]. To achieve optimal sowing weights through the management programs we propose a grazing scheme of gilts: Figure 1.

- From 8-40 kg feed will be done at ad libitum;
- from 41 to 70 kg restricted feed with a maximum of 2.40 kg;
- 71-110 kg of feed with 2,2-2,5 kg of feed per day and head.



**Figure 1. Sowing scheme for sows in order to achieve optimum sowing weight**

Although abundant nutrition throughout breeding young reproductive females has negative effects on the appearance of the first heat, we recommend it for obtaining a large number of explored ovules and implicitly increasing the prolificacy and the weight at calving.

## MATERIAL AND METHOD

In this scientific approach, we have carried out studies on a significant breed of gilts in an industrial breeding farm following the prolificacy and losses of piglets according to the sowing season, in order to propose measures to increase the number of matured ovules and to reduce embryonic mortality by controlling nutrition both during breeding females and during the whole gestation period when feeding must be restricted depending on the month of gestation, the growth and development of embryos and piglets, knowing the fact that in lates gestation period piglets growth is the most intense.

## RESEARCH RESULTS

Prolificacy of the sows undergoes changes depending on the season of artificial sowing at the primary sows, which is evidenced by the data presented in Table 1.

From the analysis of the presented data are seen the following aspects: figure 2.

- the prolificacy of primiparous seeded in spring ranges between  $11,20 \pm 1,75$  and  $11,88 \pm 1,90$  piglets / primiparous sows, but the best results are obtained at sows in March;
- the prolificacy of primiparous sowed in the summer ranges between  $10,20 \pm 1,68$  piglets/sow in primiparous seeded in August and  $11,10 \pm 1,22$  piglets/sow in July, the highest prolificacy being found at gilts seeded in June;
- the prolificacy of primiparous seeded during autumn has reached values of  $10,87 \pm 2,00$  piglets/sow in September,  $10,90 \pm 1,88$  piglets/sow in October and  $10,96 \pm 2,12$  piglets per sow in November, with the largest prolificacy in gilts sown in November;
- the prolificacy of primiparous sowed in the winter period reached values of  $11,33 \pm 2,03$  piglets/sow in December,  $11,38 \pm 1,82$  piglets/sow at females sowed in January and  $11,28 \pm 2,22$  piglets/sows to those sown in February.

Table 1

**Prolificacy at primiparous sows according to season of sowing**

Sowing Month	Prolificacy
March	11,88 ± 1,90
April	11,61 ± 2,04
May	11,20 ± 1,75
June	11,10 ± 1,22
July	10,58 ± 1,19
August	10,20 ± 1,68
September	10,87 ± 2,00
October	10,90 ± 1,88
November	10,96 ± 2,12
December	11,33 ± 2,03
January	11,38 ± 1,82
February	11,28 ± 2,22

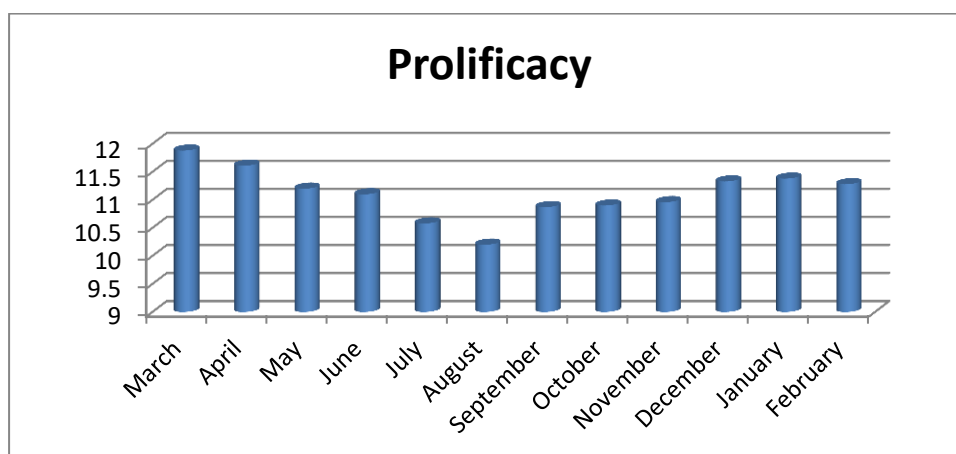


Figure 2. Prolificacy of gilts according to the season of artificial sowing

It can be concluded that the lowest prolificacy is achieved at gilts sowed in July and until November when are obtained per sows born under 11 piglets and the highest in January, February, March, April, May, June and December, when the prolificacy exceeds 11 piglets/ gilt during this period. Losses of piglets at firstborn during parturition according to the sowing season are highlighted in Table 2.

Table 2

**Loss of piglets during parturition according to season of sowing**

Sowing Month	Piglets born dead	Piglets mummified
March	1,12 ± 0,22	0,63 ± 0,11
April	1,78 ± 0,44	1,23 ± 0,70
May	1,20 ± 0,03	0,57 ± 0,29
June	2,02 ± 1,09	1,26 ± 0,88
July	0,87 ± 1,51	0,40 ± 0,23
August	1,6 ± 1,20	0,89 ± 0,33
September	1,54 ± 1,31	0,55 ± 0,42
October	2,12 ± 1,03	0,91 ± 0,32
November	1,81 ± 0,68	0,88 ± 0,51
December	2,10 ± 0,71	1,06 ± 0,34
January	1,78 ± 0,67	1,11 ± 0,70
February	1,61 ± 0,42	0,79 ± 0,47

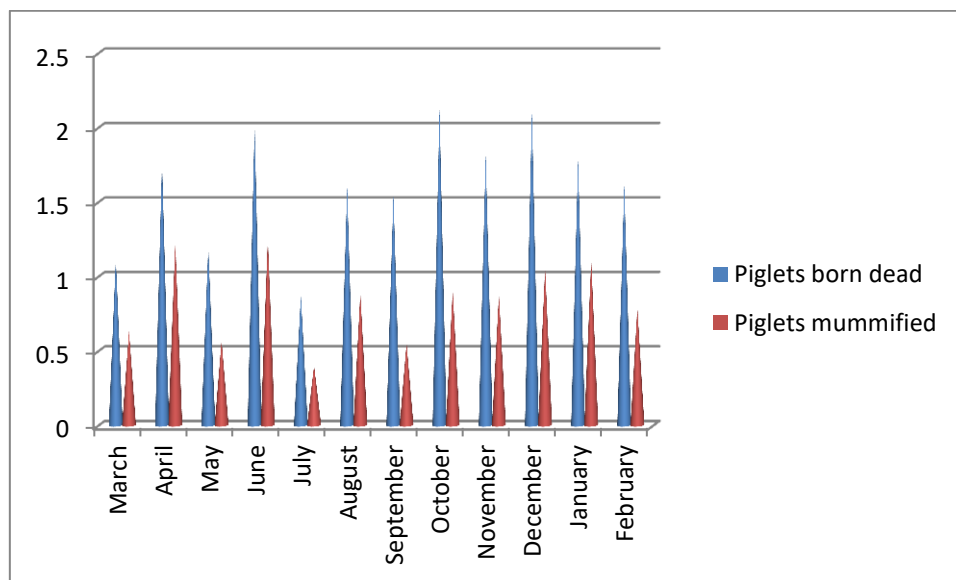
Losses of piglets during parturition at gilts sowed depending on season are as follows: at primiparous sowed in spring the losses of piglets during parturition on sowing months are as follows:

- March piglets born dead  $1.12 \pm 0.22$  and mummified piglets  $0.63 \pm 0.11$ ;
- April  $1.78 \pm 0.44$  piglets born dead by sow and  $1.23 \pm 0.70$  mummified piglets;
- May  $1.20 \pm 0.03$  piglets born dead by sow and  $0.57 \pm 0.29$  mummified piglets.

The weakest results are obtained at gilts sowed in April and the best in March in the spring season.

- the primiparous seeded in the summer season the best results in calving and the lowest losses are obtained in gilts sowed in July and the weakest ones at those seeded in June.
- in the primiparous seeded in the autumn season the best results are obtained at gilts sowed in September and the weakest in October regarding the number of dead or mummified piglets;
- at the primiparous sowed in the winter season, the lowest losses to parturition is registered at gilts sowed in February and the highest in those sowed in December.

Figure 3 shows the losses of piglets at born, dead or mummified depending on the month when the artificial sowing was carried out.



**Figure 3. Losses of piglets at born according to season of sowing at gilts**

The month with the highest losses at born was October with  $2.12 \pm 1.03$  piglets / sow born dead and  $0.91 \pm 0.32$  mummified piglets / sow, followed by December  $2.10 \pm 0.71$  piglets born dead / sow and  $1.06 \pm 0.34$  mummified. The best results were obtained at primiparous sowed in March. It is noted that the season of sowing has an influence on breeding indexes, at primiparous sows.

## CONCLUSIONS

Achieving optimal weights for sowing, reducing embryonic mortality and increasing the prolificacy, proposes the implementation in swine farms of some nutrition schemes according to physiological requirements, because the abundant nutrition during breeding of young female for reproduction has negative effects on the appearance of the first heat, but we recommend, for obtaining a large number of ovules and increasing the prolificacy of primiparous.

The prolificacy of primiparous undergoes changes depending on the season of artificial sowing. The lowest prolificacy is achieved at gilts sowed in July and until November when there are obtained under 11 pigs/females, and the highest in the months with lower temperature when this indicator exceeds 11 piglets/gilt.

The largest losses at born were recorded at gilts sowed in October and December and the lowest at gilts sowed in March.

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