THE CAUSES OF GESTATION LOSS DEPENDING OF SEASON AT SOWS

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Abstract: *The manifestation of the oestrus at sows after separation of the piglets is conditioned by a number of managerial factors, nutrition having an important role in the normal development of the puerperium, the appearance of the oestrus and the normal progression of gestation. Productivity of primary sows does not increase by increasing the weaning age of piglets, well-seasoned weaning at 25-28 days, and helping to reduce unproductive days by reducing the weaning interval at 7 days. The season of weaning makes that the moment of appearance of the postpartum estrogen to differ considerably, the extension of the weaning period in the summer period is explained by the insufficient amount of the hormone stimulating follicle caused by the thermal stress. The causes of gestational loss in the primiparous sows are related to the repeating of oestrus, reforms and mortality, the lowest losses occurring in the cold season.*

Key words*: sows, gestation, losses, season*

INTRODUCTION

The reappearance of heat at sows after weaning piglets is conditioned by a number of factors, the most important being purperium management, the nutrition, weaning season, lactation duration, stress factors, use of experimental bulls for early detection of oestrus, the way in which is the weaning, the breed or commercial hybrid and the stage of maintenance of sows at weaning [5,8,10]. The most important factors influencing the puerperal period and then the normal progression of gestation are nutrition, microclimate, movement and pathogens [1,6,12]. Nutrition is the most important factor with an impact on the way in which the puerperal period evolves, the reappearance of heat after weaning piglets and the normal course of gestation[3,4,9]. The explanation is that the incidence of metabolic diseases - which represents the so-called "production disease syndrome" - increases due to the demands from gestation and lactation period, the main issues that are the subject of the management should refer:

- body condition of sows and fat reserves from the perspective of:
- the climate of the habitat, the season;
- energy provided through food on physiological states;
- supplementation with fat of sows diet, in order to provide energy according to physiological needs: breastfeeding, sowing, gestation;
- nutrition controlled after weaning according to the state of maintenance;
- proteins and amino acids;
- food supplements;
- vitamins.

The nutrition components that must be monitored during the puerperium period by the puerperium management are: the amount of food, the energy level, the protein-vitamin-mineral level [2,7,11,13]. Sub nutrition leads to reproductive disorders that depend on the duration of the imbalance, the time it occurs, and by the type of imbalance, causing ovarian dystrophy, folliculogenesis with follicular formation with antrum but without ovulation, decreased uterine gland secretion and embryonic resorption. Super nutrition causes fatty ovarian infiltration, decreasing folliculogenesis and low manifestations of heat, low fecundity and birth rate, and reduced number of piglets at parturition.

The level of energy can record imbalances, the energy shortage of feed, led to the increases of the number of artificial sowings for a normal gestation, but the excessive intake of energy feed leads to the fattening of females, meaning post-partum uterine atonia, distortions, reproductive disorders [14,15].

Protein administered in rations has a role in defense, biocatalyst and plastic role, deficiency causing mobilization of back-up proteins, and the excess additional costs with maintenance of sows. Mineral and vitamin deficiencies cause serious reproductive disorders from inappropriate involution of genital organs, heat manifestations and ovulation disorders, and normal expression of gestation by increasing embryonic or fetal mortality. Inappropriate maintenance at the end of the puerperal period has negative effects on oestrus manifestation, increasing the number of non-productive days, low ovulation and poor reproduction indices. Microclimate factors also affect reproduction as well as pathogenic movement and agents, although the genital organs of sows have a good bacterial capacity due to the action of estrogenic hormones that drive leukocyte migration in order to form the protective barrier in the endometrium, activating the reticuloendothelial stimulation system of macrophages and histocytes.

MATERIAL AND METHODS

In order to highlight the causes leading to gestation loss, by obtaining inferior reproduction indicators and inadequate economic outcomes, in this scientific approach, we conducted researches regarding the influence of sow weaning age, the season, and stress factors on reproductive efficiency, in order to develop managerial measures that contribute to the improvement of breeding indices regardless of the season.

RESEARCH RESULTS

The weaning age of the piglets influences the future evolution of the breeding behavior of the sows in the conditions that two successive physiological processes take place: weaning piglets and stopping dairy secretion after a rapid ascent up to 21 days after parturition. Weaning piglets at 18-21 days is not benefic for sows because the reproductive tract did not reverse, and stopping milk evacuation by stopping of sucking leads to the retention of a large amount of milk and causes the oestrus to appear although the genital apparatus is not ready

The effects of the weaning age of the piglets on the breeding performance of primiparous sows are:

- at weaning of piglets at 18-21 days weaning-estrus interval was 12.80 ± 1.23 days;
- at weaning of piglets at 22-25 days weaning-estrus interval was 9.56 ± 0.78 days;
- at weaning of piglets at 26-28 days weaning interval - estrus was 7.24 ± 1.12 days;
- at weaning of piglets at 29-35 days weaning-estrus interval was 7.37 ± 1.68 days;
- at weaning of piglets at 36-42 days weaning-estrus interval was 7.09 ± 1.07 days.

It can be concluded that the primary production of sows does not increase by increasing the weaning age of piglets, well-managed weaning depending on season at the age of 25-28 days, helping to reduce unproductive days by subtracting the weaning interval to 7 days. The season in which weaning occurs makes that the moment of postpartum estrogen's appearance to vary considerably, the prolongation of the weaning-estrus period during the summer period is explained by the insufficient amount of the hormone of follicular stimulation caused by the thermal stress. At the weaning of piglets at different ages in warm and cold months the weaning interval - estru at the first weaned sows to reached the following values:

SUMMER

- weaning at 18-21 days weaning-estrus interval was 13.78 ± 0.76 days;

- weaning at 22-25 days weaning-estrus interval was 10.89 ± 1.36 days;
- Weaning 26-28 days weighing estrus was 7.88 ± 1.34 days;
- weaning at 29-35 days weighing estrus was 7.68 ± 1.56 days;
- Weaning at 26-42 days weighing estrus was 7.35 ± 0.79 days.

WINTER

- weaning at 18-21 days weaning-estrus interval was 11.82 ± 1.38 days;
- weaning at 22-25 days weaning-estrus interval was 8.23 ± 0.82 days;
- weaning 26-28 days weighing estrus was 6.61 ± 1.68 days;
- weaning at 29-35 days weighing estrus was 7.06 ± 1.41zile;
- weaning at 26-42 days weighing estrus was 6.83 ± 1.47 days.

The best results in the cold season were obtained in the primiparous that were separated from the piglets at the age of 26-28 days when the estrus weaning interval was 6.61 ± 1.68 days at the same age in the hot season this interval was of 7.88 ± 1.34 days. We do not recommend weaning piglets at ages less or older than 26-28 days, because sow productivity does not increase, the causes of seasonal gestation loss due to heat recurrence, mortality or animal reformation (Table 1)

Table 1

Causes of gestation loss at primary sows

Season	**The oestrus repeating**	**Reforms**	**Mortality through accidents**
SUMMER	4,84 ± 1,42	1,65 ± 1,36	0,56 ± 0,22
WINTER	2,76 ± 1,78	0,78 ± 0,24	0,20 ± 0,31

In the warm season the heat repeating after sowing the sows was in percent of 4.84 ± 1.42 and in the cold season 2.76 ± 1.78. The total gestation losses in the warm season was 7.05 ± 0.98 versus only 3.74 ± 1.32, with the lowest mortality accidents occurring in the cold season.

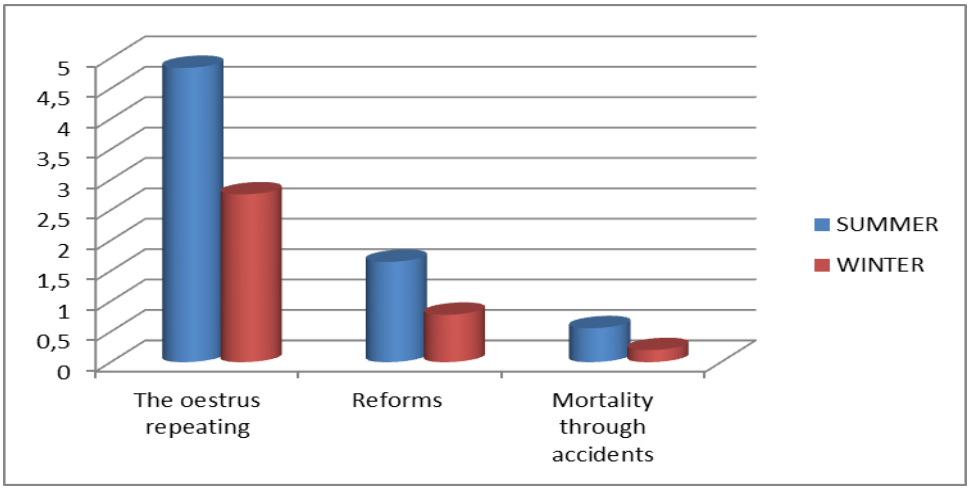

Figure 1. Causes of gestational losses according to the season

CONCLUSIONS

The way of managing sows nutrition is the most important factor affecting how the puerperal period evolves, the reappearance of heat after weaning piglets, and the normal progression of gestation. The weaning age of the piglets influences the future evolution of the breeding index, the best results being obtained in the primiparous sows at weaning piglets at the age of 26-28 days.

The best results in the cold season were obtained at the primiparous which were separated from the piglets at the age of 26-28 days when the estrus weaning interval was 6.61 ± 1.68 days and in the warm season 7.88 ± 1.34 days. We do not recommend weaning piglets with age less or older than 26-28 days because the sow productivity does not

increase, the causes of seasonal gestation loss due to repetition of heat, mortality or the reformation of some animals due to age, or conformation defects.

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