ARTIFICIALLY INSEMINATION SEASON INFLUENCE UPON REGULAR AND IRREGULAR RETURNS TO ESTRUS

INFLUENTA SEZONULUI INSAMANTARII ARTIFICIALE ASUPRA INTOARCERILOR REGULATE SI NEREGULATE IN ESTRUS

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Abstract: *The aim of this research was to quantify the proportion of pluriparous F1 (Large White x Landrace) sows that show regular and irregular estrus after the artificial insemination, according to the season when the artificially insemination was performed. The results were analyzed using χ^2 test. The proportion of sows that show irregular returns to estrus, we observed that it was high during autumn (3.20%) followed by summer (2.80%). The differences between the animals that show irregular return to estrus during summer and spring was statistically significant ($p<0.05$); comparing to winter, the difference was very significant ($p<0.001$). Regarding the total proportion of animals that show returns to estrus (regular and irregular), the animals inseminated during autumn have statistically significant more animals in estrus (11.20%) comparing to the rest of the breeding seasons.*

Key words: *pluriparous sows, returns, regular, irregular, artificially insemination, estrus, season, boar immobility reflex*

INTRODUCTION

The stated purpose of this article is to increase economic efficiency of sows productivity in intensive units by application of modern technologies based on scientific organization of housing and feeding and especially the direction and control of the reproduction activity. The reason was that to improve open sow days, litters/female/year and farrow-to-farrow intervals, we will review a case study looking closer at the impact of returns to estrus **(2, 5)**.

Any disorder can remember one of the factors detrimental process flow with negative impact on economic performance evidenced by: declining birth rates and prolificacy; post-natal mortality; disorders in youth development; the occurrence of diseases of the body grafted on low resistance and the veterinarian treatments and vaccination actions **(6, 7)**.

MATERIAL AND METHODS

The biological material was represented by F1 pluriparous sows (Large White x Landrace) house in intensive exploitation system. In this study we focus to determinate the proportion of sows that shows regular and irregular returns to estrus, in different seasons.

After the artificial insemination, the animals were places in individual pens and there observed for 28 days. After 11 days from the artificial insemination we start to test the reflex of immobility, in the presence of a boar. In this study estrus returns in days 11-17 and 25-38 were considered irregular returns.

RESULTS AND DISCUSSIONS

In table 1 we presented the proportion of sows that show the proportion of sows in estrus after the artificial insemination, in different periods.

Table 1

Proportion of sows in estrus, in different periods after the artificial insemination, by season

Breeding season	Sows AI	Regular returns to estrus		Irregular returns to estrus		Total returns	
	n	n	%	n	%	n	%
Spring	250	11	4.40%^{a}	3	1.20%^{c}	14	5.60%^{c}
Summer	250	16	6.40%^{a}	7	2.80%^{a}	23	9.20%^{a}
Autumn	250	20	8.00%^{Aa}	8	3.20%^{Aa}	28	11.20%^{Aa}
Winter	250	10	4.00%^{c}	4	1.60%^{a}	14	5.60%^{a}
Total	1000	57	5.70%^{a}	22	2.20%	79	7.90%

χ^2 A-a $p<0.001$; A-b $p<0.01$; A-c $p<0.05$; a-a $p>0.05$

According to the information presented in the table above, the smallest proportion of regular returns were observed during the winter breeding seasons (4.00%) and the highest proportion was observed during autumn season (8.00%). The difference, calculated with χ^2 test was statistically significant ($p<0.05$). The difference between the proportion of regular returns counted and calculated during the other seasons of the year were statistically not significant ($p>0.05$).

Regarding the proportion of sows that show irregular returns to estrus, we observed that it was high during autumn (3.20%) followed by summer (2.80%). The differences between the animals that show irregular return to estrus during summer and spring was statistically significant ($p<0.05$); comparing to winter, the difference was very significant ($p<0.001$).

In this study we only look at pluriparous sows, but according to **Vargas A.,** the proportion of animals showing irregular returns to estrus is higher for gilts and primiparous sows comparing to older animals **(1).**

Regarding the total proportion of animals that show returns to estrus (regular and irregular), the animals inseminated during autumn have statistically significant more animals in estrus (11.20%) comparing to the rest of the breeding seasons.

An important think that has to be kept in mind by all the reproduction specialist is the performance of the animals that were rebreed, in different periods after the first artificially insemination, and that because a high proportion of animals present a risk of recurrence reproductive failure **(1, 3)**.

Reproductive problems in sows are the direct result of things that go wrong with the physiology of pregnancy. Because these processes occur in a coordinated and chronological sequence, examining non-pregnant sows that return to estrus can be used to estimate when during the reproductive cycle the problems are occurring **(4).**

CONCLUSIONS

- The smallest proportion of regular returns was during the winter breeding seasons (4.00%) and the highest proportion was observed during autumn season (8.00%) - the difference was statistically significant (χ^2 test $p<0.05$);

- The difference between the proportion of regular returns counted and calculated during the other seasons of the year were statistically not significant (χ^2 test $p>0.05$);
- The proportion of sows showing irregular returns to estrus was high during autumn breeding season (3.20%) followed by summer (2.80%) - the differences were statistically significant (χ^2 test $p<0.05$); comparing to winter, the difference was very significant (χ^2 test $p<0.001$).

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