THE LEVEL SOME REPRODUCTION INDICES AT SOWS, IN FUNCTION BY THE INTENSITY OF THE BOARS UTILIZATION AT REPRODUCTION

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Abstract

The fecundity and prolificity of gilts are fews basis indices on we can appreciated the activity's reproduction of a zootechnical exploatation. These indices are influenced by numberous factors, who actioned indirectly the quality of ejaculate, the rhythm of utilising to reproduction of boars.Were utilised 5 experiments for using to reproduction the boars differenced between every lot of gilts from Landrace race.The value of fecundity were 86.15% to the gilts inseminated with sperm obtained from boars utilised prelevation the sperm one time between 4 days. The hight value of prolificity were 8.29 when the insemination of gilts were done with sperm prelevated one time between 3 days.

Key words: boars, rhytm of harvesting, sows, reproduction's indices

INTRODUCTION

In the pig farms, a crucial sector in the economic balance is the reproduction sector [Bogdan et al, 1999; Feredean 1972; Tanase 1981]. Getting an extra one on farrowing piglet / sow, the conditions in which the 2.2 births per year, a large owner of sows is a significant benefit [Rosca, 1991; Tanase 1997; Runceanu 1995].

There are many factors which determine fertility and prolificacy in this species benefit [Feredean 1974; Thibault and Levasseur, 1991; Hafez, 1987; Tanase et al., 2000].

Our team has studied the influence of the rate of use in collecting boars on these indices to artificially inseminated sows.

MATERIAL SND METHODS

The investigations were performed on 310 females, 242 sows and 68 gilts of Landrace breed. There were 5 experimental groups: L 1, L 2, L 3, L 4 and L 5. Females in L 1 (51 sows and 17 gilts) were sown with semen from boars with a harvesting rate of 5 days harvesting followed by two days break, those of L 2 (44 sows and 7 gilts) with sperm from boars that were collected every two days, those of L 3 (50 sows and 22 gilts) with sperm from boars with a more intense rhythm of harvest (harvest 2 days - one day break), those of L 4 with semen collected at a rate of one every three days, while those of L 5 (52 sows and 13 gilts) with sperm obtained from boars at a rate of one-day harvesting, followed three-day break.

Semen collection was done through the technique known as manual

method. After collection, each ejaculate was assessed macroscopic, microscopic and bacteriological, and based on the concentration and mobility of the final dilution ratio was established.

Sperm dilution was performed with a synthetic diluter, which provides a shelf-life of 4-5 days at a temperature of 40C. Discovery of females in heat was based on morphological changes of the genital segments, combined with characteristic behaviors.

The moment of inseminated was 12 hours of onset of immobility reflex exerted compressive in region lumbo - sacral, practicing the second sowing in the same heat cycle, every 12 hours. The dose for sowing was 100 ml and contained 3 to 4 billion mobile sperm.

At 25 and 45 days after insemination was established the pregnancy on the basis of not occurrence of the heat. The fecundity was calculated for each category of female, using the formula:

F (%) – fecundity;
FG –pregnancy females;
FI –insemination females.

RESULTS AND DISCUSSIONS

The fecundant capacity of spermatozoons, which were obtained by different harvesting rates, was apreciated by insemination the females (sows and gilts)wich came into oestrus during the experimental period.

Of the total inseminated females (sows + sows) (310), at 25 days were diagnosed pregnant 250 (80.6%) (Table 1). Of which reconfirmed pregnant at 45 days only 241 (77.74 %).

Table 1

The dynamic of fecundity at sows artificial inseminated, in function by de rhytm of the utilized at reproduction for boars

Lot	inseminated (no)	Pregnancy at 25 days (no)	F(%) at 25 days	Pregnancy at 45 days (no)	F(%) at 45 days
I	68	52	76,47	50	73,52
II	51	37	72,54	36	70,58
III	72	59	81,94	56	77,77
IV	54	46	85,18	45	83,33
V	65	56	86,15	54	83,07
Total	310	250	80,6	241	77,74

Fecundity was different, depending on the rhytm of harvest sperm, having values (at 25 days after artificial insemination) between 72.54% to 86.15% for L 2 and L 5, and at 45 days, between 70.58% to 83.38% for L 2 and L 4. Values for other groups were intermediate. Semen obtained by sampling a less intense rhytm (one every three days and every 4 days) has a higher capacity fecundant.

The females fecundity, in function by the lot, had the following dynamic (Table 2):

- at the 1 lot, declined from 80% after the first week of the utilization at

69.2% at the finish period and at gilts, the fecundity was reduced from 85.7% to 66.6% from the same period of time;
- at sows in the 2 L, the average fertility was 72.71%, with variations between 81.8% and 62.5% between the beginning and experiences end;
- same downward trajectory of fertility between the beginning and end of experiences was maintained for experimental group L 3, this being 84.21% and 70% for sows, respectively 85.7% and 70% for gilts;
- at L 4 were significantly higher value than previous lots, so after the first 7 days (91.66%) and after 21 days (84.21%);
- the best results were obtained from sows inseminated with semen collected every four days, but found the same curve downward fertility values: 90% for sows and 100% for gilts inseminated at start of the experiment and 83.87% for sows and respectively 80% for gilts inseminated at the end of the experiment.

Table 2

The dynamic of the fecundity and prolificacy at sows and gilts

Lot	AI Moment	AI female		P female (25 d)		F(%) at 25 days		P female (45 d)		F(%) at 45 days		Prolificacy	
		s	g	s	g	s	g	s	g	s	g	s	g
L 1	I week	20	7	16	6	80,0	85,7	16	5	80,0	71,4	7,42	7,36
	II week	18	4	14	3	77,7	75,0	14	3	77,8	75,0		
	III week	13	6	9	4	69,2	66,6	8	4	61,5	66,6		
Average		**51**	**17**	**39**	**13**	**76,4**	**76,4**	**38**	**12**	**74,5**	**70,5**		
L 2	I week	11	1	9	1	81,8	100	9	1	81,8	100,0	7,63	7,24
	II week	17	2	13	2	76,5	100	12	2	70,6	100,0		
	III week	16	4	10	2	62,5	50,0	10	2	62,5	50,0		
Average		**44**	**7**	**32**	**5**	**72,7**	**71,4**	**31**	**5**	**70,4**	**71,4**		
L 3	I săpt.	19	7	16	6	84,2	85,7	15	6	71,4	85,7	7,79	7,61
	II săpt	21	5	18	5	85,7	100	17	5	80,9	100,0		
	III săpt	10	10	7	7	70,0	70,0	7	6	70,0	60,0		
Medie		**50**	**22**	**41**	**18**	**82,0**	**81,8**	**39**	**17**	**78,0**	**77,2**		
L 4	I week	12	3	11	3	91,6	100	11	3	91,7	100,0	8,38	8,21
	II week	14	3	12	2	85,7	66,6	12	2	85,7	66,6		
	III week	19	3	16	2	84,2	66,6	15	2	78,9	66,6		
Average		**45**	**9**	**39**	**7**	**86,0**	**77,7**	**38**	**7**	**84,4**	**77,7**		
L 5	I week	10	4	9	4	90,0	100	9	4	90,0	100,0	8,12	8,0
	II week	11	4	10	3	90,9	75,0	10	3	90,9	75,0		
	III week	31	5	26	4	83,9	80,0	25	3	80,6	60,0		
Average		**52**	**13**	**45**	**11**	**86,5**	**84,6**	**44**	**10**	**84,6**	**76,9**		

AI – artificial insemination moment
AI female - artificial insemination female
P female – pregnant female
F – fecunditate
s – sows
g – gilts

Analysing the fecundity of each lots of pigs at 45 days after insemination, were observed the oscillations between in the firts experience and the last experimental period. Thus, for the sows in L 1, this index ranged between 80% and 61.5% for those in L 2 has fluctuated between 81.8% and 62.5% for those in L 3, the values ranged from 71.42% and 70% for those of L 4, the limits of variation was 91.66% and 78.94% and sow the

L 5, the differences were 10 percent: 90% at baseline and 80.64% at its end. Because of the small number of gilts and unequal sown in each interval of 7 days, the fertility assessment do not give a true of particularly valuable in this indicator. However, there is a reduction of it to the end of the experiment.

In the second experiment was studied prolificacy of the sows and gilts. The average value was 7.86 piglets from sows and 7.68p iglets in gilts.

Note the differences between the groups in especially between L 3, L 2 and the other, they demonstrated that the rhytm of harvest sperm can influence (the quality of semen) the sow prolificacy.

CONCLUSSIONS

The best results were obtained from females in groups L 4 and L 5 (the inseminated with semen collected at a rate less intense: a day harvesting followed by two days rest or a day harvesting and three rest). This rate has maintened the high capacity fecundant of the sperm ; The results above average for prolificacy are found at sows inseminated at the beginning of the experimental period, even and at lots L 3, L 1 and L 2 in which the sows were inseminated with semen collected at an intensive rhytm, something which leads to possibility of their practice, but for short periods (one week), followed by periods of recovery; A high fecundity and prolificacy of artificially inseminated sows are obtained when harvesting is followed by the 2-3 days break, but the results must be balanced with the efficient of the exploitation operation of the very valuable boars, which is not maximum in this case.

REFERENCES

1. Bogdan A.T., Şt. Mantea, Dorina Bogdan, 1999, Tratat de reproducţie şi însămânţări artificiale la suine. Edit. Tehnică Agricolă, Bucureşti.
2. Feredean T., 1972, Contribuţii la studiul factorilor care influenţează fertilitatea suinelor în condiţiile însămânţării artificiale. Teză doctorat, I. A. Bucureşti
3. Feredean T., 1974, Reproducţia la porcine. Ed. Ceres, Bucureşti
4. Hafez E.S.E., 1987, Reproduction in farm animals. Lea and Febinger
5. Roşca O., 1994, Biotehnica reproducţiei la porcine prin însămânţare artificială. Edit Ceres, Bucureşti
6. Runceanu L., 1995, Reproducţia şi patologia reproducţiei. Lito., UŞAMVIaşi
7. Thibault C., M.C. Levasseur, 1991, La reproduction chez les mamiferes et l`home. Ed. Marketing, Paris
8. Tănase D., D. Lazarescu, Gh. Nacu et all, 1997, Nivelul unor indici de reproducţie la scroafele din exploataţiile familiale, însămânţate artificial. Lucr. Şt., vol. 39-40, seria zootehnie, Iaşi
9. Tanase, D., 1981 - Cercetări asupra influenţei unor factori stresanţi din combinatele de porci asupra fertilităţii scroafelor. Teză doctorat, Instit. Agr. Iaşi.
10. Tănase, D. I. Manole, Gh. Nacu, 2000, Biotennici şi biotehnologii de reproducţie în zootehnie. Edit. Ion Ionescu de la Brad, Iaşi.