

RESEARCHES CONCERNING THE INFLUENCE OF THE BIOACTIVE SUBSTANCES ON THE BOAR SPERM PRESERVATION

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Abstract

The experiences were held on the boar sperm. There were studied the bioactive substances with the role of antioxidant made at the Institute of Genetic of Science Academy of Republic of Moldova. The bioactive substances (PGL-1) were used as a structure dilution GHTS what is used for boars sperm dilution with the concentration of 0,1 – 1%. The experimental researches showed that the studied substances were not toxic for sperm used in the structure of GHTS dilution with the concentration of 0,1-1 whit gave the possibility to increase the period of boar sperm stoking till 168 hours, keeping the sperms mobility at the level of standard of artificial insemination.

Key word: Boar, sperm, dilution, motility, concentration, bioactive substances, antioxidant

INTRODUCTION

The perfection of swine reproductive methods has forced using the artificial insemination. One of the direction of this brunch in is finding of one dilution for using it for sperm, because of this process it is possible to increase the quantity of sperm, and it is as well possible to reduce the number of boars at the reproduction units. The sperm dilution at the solution units it is very necessary for valuable boars rising. For a large number of females, and reducing the improvement period of animal herds.

The researches in this brunch for studding the boar sperm dilution were held and are developed around the warden as well in Republic of Moldova Milovanov V.C. (1977), Nauk V.A. (1991), Serdiuk S.I. (1977), Darie G. (1999), Gusicov A.M. (1993), have studied the dilutions what have in their composition neelectrolits, electrolist, antioxidants, egg yolk, antibiotics, etc.

A lot of researches what were held into direction of dilution and boar sperm conservation for finding of one dilution with a large using in practice, give the positive results but this did not allow at the moment their large using in practice as well as for bulls, the problem is still open. Our researches are held to this direction as well.

MATERIAL AND METHOD

The researches were held using the boar sperm of Landrace, Marele alb, Duroc, Pietrain breeds.

Ejaculates were collected using manual technique with the stop between collection – three days. Emidiafly after collecting the ejaculates were appreciated using the class method under the mobility, concentration and sperms' morphology. There were used just ejaculates with standard indices of sperm in this experiment (table 1).

Table 1
Standard indices of boar row sperm used for artificial insemination

Indices	Characteristics
Consistence	As milk to cream – colored
Color	Grey – white to white
Concentration	25 x 10 ³ sperms / ejaculate
The sperm mobility	≥ 7 points
Abnormal sperms	≤ 15 %

As a dilute for boar sperm diluting there were studied dilute GHTS, in its composition as a supplement there was introduced the preparation PGL-1, what has the feature of antioxidant with the concentration of 0.1-1%/. The sperm conservation was developed at the temperature of +16 – 18°C.

The females' insemination has been done using the diluted sperm under next program: there was done the first insemination, which has been repetition after 12 hours for all groups at the interval of 2,4 and 6 days.

The insemination results where evaluated under the furrowing index (%).

RESULTS AND DISCUSSION

After the held analysis immediate after the collection? There was shown that sperm what had to be diluted and user for females had a good quality. The average of its mobility was 9 points, and the concentration of sperms was 0,22 mlrd/ml with low percent of abnormal sperms.

Under the concentration of substance PGL-1, which was introduced as an additional component with the concentration of 0,1; 0,5; 1% of dilute GHTS, the sperms' mobility after dilution had not change (figure 1), but there was noticed a easy increasing of percent of dead and abnormal sperms.

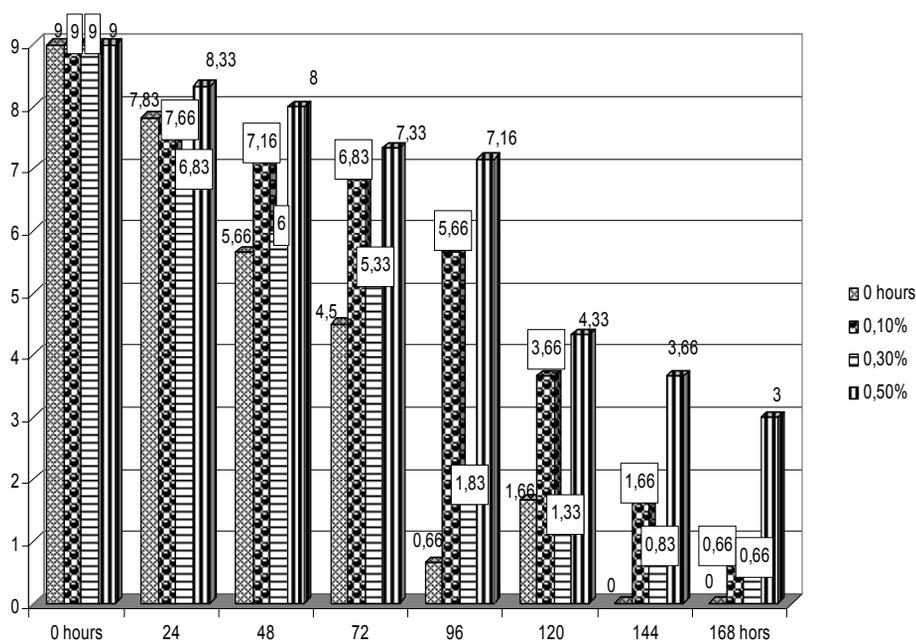


Figure 1. Motility, hours

After 24 hours of incubation at the temperature of +16-18°C there were noticed changes of sperms' mobility under the substance PGL-1 concentration, what was introduced as a supplementary component in dilute GHTS. The best results were received when the concentration of PGL-1 substance was – 0.5%. The changes of sperms' mobility happens after 96 hours of sperms

conservation. The sperms' mobility was 7,16 points in the experimental group where the concentration of substance PGL-1 was 0,5% compare with the control group where the sperms' mobility was just 0,6%, but after 168 hours of sperm conservation, their mobility was 3 points and zero point correspondingly.

As well there were changes of absolute index of sperms maintenance (figure 2).

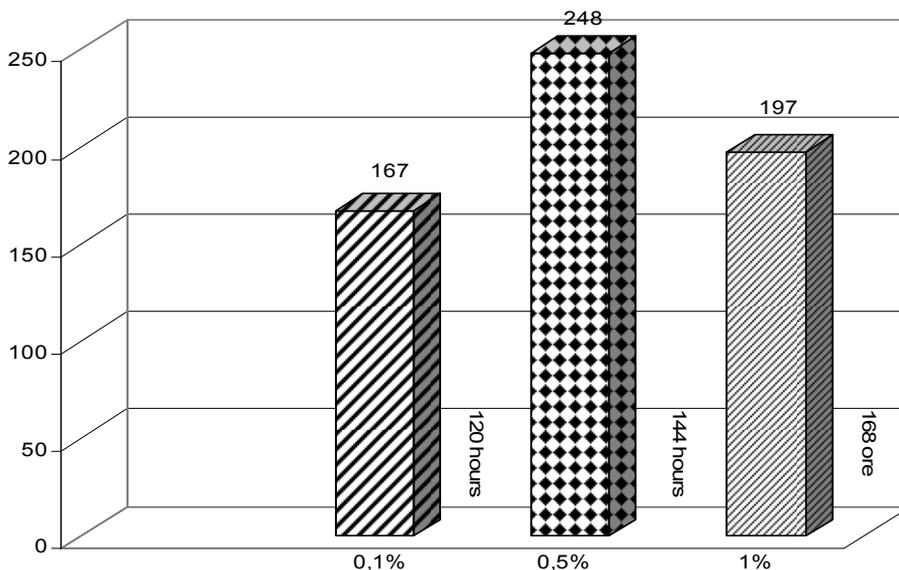


Figure 2. Sperms maintenance after 168 hours incubation

The better index of maintenance was received in the experimental group where the concentration of substance PGL-1 was 5%. This can be explained that sperms being a special cells feature with their autonomy presents very special physiology's what allow to pass from one kind of metabolism to of another, and tinning their energetic resources. These biologic peculiarities can be by using bioactive substances with the role satisfied of antioxidant for providing the

maintenance and mobility, what was shown in our experiences.

After the results analyses the females' fecundity (table 1) which were inseminated artificially with the sperm what was diluted and conservation during 6 days was just 62,9% compare with 69,5% when the females insemination was done with the diluted sperm using GHTS with its composition of 0,5% of substance PGL-1 and conservation during 2 days.

Table 2
 The females' fecundation

The length of sperm conservation	GHTS+PGL-1
2 days	69,5
4 days	67,3
6 days	62,9

It can be explained by the positive influence of PGL-1 substance added to dilute GHTS.

CONCLUSIONS

The biologic substances using with the role of antioxidant user in composition of dilute GHTS led to next conclusions.

From those studied three concentrations PGL-1 substance, what were entered in the dilute GHTS components, provided higher results at boar sperm conservation, when the concentration was 0,5%. This dilute can be used successfully for boar sperm dilution, what allows the sperm conservation at the temperature of +16-18⁰C during 5-6 days, without diminution of fecundity.

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