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THE METHOD OF SOW CONCEPTION STIMULATION

O. Pilipchuk, postgraduate*
V. Sheremet, Doctor of Agricultural Sciences

It was established that singular administration of preparation "Introvit" in sows, on the date of ablactation, in a dose of 10 ml in conjunction with feeding by "Glutamat 1M" in a dose of 20 ml over the time of three days from piglets ablactation increases conception of study sows comparing to control samples by 19, 6% and reduces off-cycle period to one day.

***Keywords**: Sow, idle period, fertility, drug, Glutam 1M, suckling period.*

Efficiency of sow usage depends, first of all, on duration of their exploitation and quantity of received piglets from them. These indexes are highly influenced by conception.

The reproductive potential is influenced by many biological factors (amount of ovulations, prenatal mortality, insemination age, hormone status, condition, genotype, dam size, infections) and also by biotechnological (conception, duration of pre-weaning period, sperm quality, precision of determination of estrum time) [3].

Among these attributes the sows conception is one of the basic indexes for evaluation of veterinary service in the conditions of brood and manufacturing facilities. The rhythm of the whole enterprise functioning, the amount of received offspring and young stock sold and also the maintenance of the own herd depend on this index [2].

The variation of sows' conception rate in different husbandries depends on the conditions of keeping and nutrition. That is why the methods of ovulation stimulation and embryos implantation within reproductive tracts of female are constantly developed.

Thus it was established[4] that preparation "Selemag", which includes vitamin E complex and selenium, positively influences on physiological condition of ablactated

*Науковий керівник – доктор сільськогосподарських наук В. І. Шеремета

sows, animals simultaneously come in season and their conception increases by 6,8 %. Intramuscular administration of biologically active preparation “Glutam 1M” in a dose of 10 ml increased sows conception rate by 10%. Feeding of the same preparation in the time of three days starting from the second day of insemination provides sows conception at a rate of 96,6% which is in 13,3% more than in control samples [4, 5, 6,].

That is why the development of new systems and searching for different preparations which could improve sow conception in the different conditions of keeping and nutrition is of current interest because it has immense economic and selective meaning.

Work objective was to develop a new pattern of sows’ conception stimulation by active neurotropic and metabolic preparation.

Materials and methods of research. Great white and landras sows were the objects of research.

We formed control and study groups which included 70 animals with different amounts of farrows (from 1 to 5). Sows were selected into groups just after ablactation.

The groups were formed by the principle of groups-analogues according to breed, body condition, prolificacy and amount of farrows. Average body condition and body weight of sows estimated 190-230 kg.

After ablactation sows were held in individual barns. On the date of ablactation control and study sows were singularly intramuscularly administrated vitaminized preparation “Introvit” in a dose of 10 ml, regardless of body weight and body condition of the animals. First three sows were not fed. At this period study sows received preparation in the form of food bolus which contained 100 grams of combined feed and 20 ml of “Glutam 1M” preparation and control sows received 20 ml of physiological solution (table 1).

1. Pattern for “Introvit” and “Glutam 1M”preparations administrations to stimulate sows conception

Group	n	Preparation	Dose, ml	Dates of administration
		«Introvit»	10	On the day of ablactation

Control	70	Physiological solution	20	1-3 day after ablactation
		«Introvit»	10	On the day of ablactation
Study	70	«Glutam 1 M»	20	1-3 day after ablactation

Animals which were in a season were determined with a help of sample boar. Selected sows were artificially inseminated by preliminary mixed sperm every 18 hours. Sows conception was estimated in 25 – 27 days after insemination my means of ultrasonic examination.

Rearing pens are filled with sows according to the principle "everything is occupied – everything is empty" that is why pre-weaning period of sows varied.

Results of research. Analysis of received data showed that conception of study sows was beyond all doubt larger comparing to control sows by 19, 6%. The duration of off-cycle period was shorter by one day. (table 2).

2. Conception of experimental sows

Index	Group, n=70	
	Control	Study
Off-cycle period, days.	5,9±1,59	4,9±0,57
With young, animal units	49	63
Empty sow, animal units	21	7
Conception, %	70,4±5,45	90,0±3,58*

Comparison study of these reproductive power indexes depending on sows' farrows showed that they also were better in study animals. (table 3) .

3.Reproductive capability of experimental sows with different farrows

Index	Group									
	control					study				
Amount of farrows	1	2	3	4	5	1	2	3	4	5
Amount of animals	13	18	16	7	16	13	16	17	8	16
With young	5	13	13	5	12	10	14	16	8	15
Off – cycle period, days	6,0 ± 0,77	6,4 ± 1,95	5,6 ± 1,26	5,4 ± 0,52	6,1 ± 2,05	5,4 ± 0,79	5,3 ± 0,69	4,7 ± 0,40	4,6 ± 0,41	4,6 ± 0,41
Conception,%	46,2 ± 13,82	72,2 ± 10,55	81,3 ± 9,75	71,4 ± 17,07	75,0 ± 10,82	76,9 ± 11,68	87,5 ± 8,26	94,1 ± 5,71	100	93,8 ± 6,05

Thus the worst conception was observed in sows with first farrowing both in control and study groups. But nevertheless in study sows conception was higher by

30, 7% comparing to control group. The best conception of sows was observed after the fourth farrowing, in study animals it estimated 100% which is by 28, 6% higher than in control. In study animals after the second farrowing conception was higher by 15, 3%, after the third one – by 12, 8% and after fifth – by 18, 8%.

Off-cycle period in sows after the first farrowing was lower by 0,6 days, in sows after the second farrowing by 1,1 days, after third farrowing – by 0,9 days, after fourth – by 0,8 days and in sows after fifth farrowing it shortened to 1,5 days.

Thus feeding "Glutam 1M" to study sows with different amounts of farrowing just after ablactation induces tendency toward compression of off-cycle period and improvement of conception correspondingly by 0, 6 – 1, 5 days and 18,8% - 30,7% comparing to control.

Taking into account the fact that groups with experimental sows were formed by females of two different breeds – great white and landgras, we analyzed the influence of "Glutam 1M" on their reproductive capability (table 4).

4. Conception of experimental sows according to the breed

Indexes	Groups, n=35			
	Great white		Landras	
	control	study	control	study
Off-cycle period, days	6,1±1,15	5,6±0,97	4,7±0,48	5,1±0,97
With young, animal units	25	25	33	30
Empty sows, animal units	11	10	2	5
Conception, %	68,6±7,85	71,4±7,63	94,3±3,93	85,7±5,92

In study great white sows the off-cycle duration was shorter by 1,4 days but conception was higher by 25,7 %. In landrases this difference was considerably lower – off-cycle period reduced to 0,5 days, but conception increased by 14,3% comparing to control.

So as standard operating procedure in the complex causes different duration of pre-weaning period we analyzed experimental indexes in sows with different duration of pre-weaning period.

In experimental sows the duration of pre-weaning period varied in the range of 20-32 days. To determine the influence of pre-weaning period on reproductive

capability the sows from each groups were separated into two subgroups – 20-25 and 26-32 days.

In control animals which pre-weaning period lasted 20-25 days conception was lower by 13,8% comparing to duration 26-32 days. In study animals the difference between these groups was not observed (table 5).

5.Concpetion of experimental animals depending on duration of pre-weaning period

Index	Group			
	control		study	
	Pre-weaning period, days			
	20-25	26-32	20-25	26-32
Amount of units	32	38	35	35
With young	20	29	31	32
Off-cycle, days	6,0±1,69	5,8±1,55	5,2±0,59	4,7±0,52
Conception %	62,5±8,55	76,3±6,89	88,6±5,36	91,4±4,73

Administration of neurotropic and metabolic preparation in weaned sows decreases off-cycle period and improves conception of animals both during short and longer pre-weaning periods. In study sows which pre-weaning period lasted 20-25 days off-cycle period, comparing to control, was shorter by 0,8 days, conception was higher by 26,1%. On duration of pre-weaning period for 26-32 days – off-cycle period in study sows decreased to 1,1 days and conception increased to 15,1%.

Biological influence of preparation “Glutam 1M” should be considered depending on morphological changes in the organism of sows. After ablactation the dominant of lactation in nervous system of sows switches to reproductive which causes activation of hypothalamus which starts secreting larger amounts of releasing-hormones of pholitropin and lutropin which stimulate secretion of these gonadotropic hormones by means of adenohypophisis. Gonadotropic hormones stimulate the growth of follicles and development of oocytes as a result in approximately 3-15 days after ablactation sows approach estrus and ovulation.

Taking the research [1], of influence of neurotropic and metabolic preparation on biochemical and hormonal status of sows into account we may presume that administration of preparations “Introvit” and “Glutam 1M” in sows just after ablactation increases energetic potential of hypothalamic-pituitary-testicle axis. It

induces the increase of gonadotropic hormones in the organism of sows as a result the amount of follicles on gonads increases and their ovulation too. The morphofunctional condition of dam improves. All of the facts mentioned above stimulate implantation of embryos inside reproductive tracts of a female, thus sows conception is also stimulated.

Conclusions. Singular administration of preparation "Introvit" in sows, on the date of ablactation, in a dose of 10 ml in conjunction with feeding by "Glutamat 1M" in a dose of 20 ml over the time of three days from piglets ablactation increases conception of study sows comparing to control samples by 19, 6% and reduces off-cycle period to one day. Feeding sows by neurotropic and metabolic preparation induces tendency toward decrease of off-cycle period and increase of conception correspondingly by 0,6-1,5 days and 18,8%-30,7%.

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Анотація

О. С. Пилипчук, В. І. Шеремета. Спосіб стимуляції заплідненості свиноматок

Встановлено, що одноразове введення свиноматкам в день відлучення препарату «Інтровіт» у дозі 10 мл в поєднанні з згодовуванням «Глютаму 1М» у дозі 20 мл протягом 3-х днів після відлучення поросят сприяє збільшенню заплідненості дослідних свиноматок порівняно з контрольними на 19,6 %, та скороченню холостого періоду на один день.

Ключові слова: свиноматка, холостий період, запліднені сть, препарат, Інтровіт, Глютам 1М, підсисний період.

Аннотация

О.С. Пилипчук, В.И. Шеремета. Способ стимуляции оплодотворяемости свиноматок.

Установлено, что однократное введение свиноматкам в день отъема препарата «Интровит» в дозе 10 мл в сочетании с скармливанием «Глютаму 1М» в дозе 20 мл в течение 3-х дней после отъема поросят способствует увеличению оплодотворяемости исследовательских свиноматок по сравнению с контрольными на 19,6% и сокращению холостого периода на один день.

Ключевые слова: свиноматка, холостой период, оплодотворяемость, препарат, Интровит, Глютам 1М, подсосный период.