

K. V. Kuldonashvili, V. I. Sheremeta, V. G. Kaplunenko. Nanoakvahelat Germanium effect on the growth of piglets during the prenatal period

The experiment was carried out on cross-breed sows of Large White breed and Landrace of the first farrowing. The groups were formed by the principle of groups-analogues and according to a live weight (180-200 kg). Sows were artificially inseminated by semen of Duroc boars.

The experimental animals after farrowing in the I group have been fed for three days with Glyutam 1M at a dose of 20 ml. Females in the II experimental group, from 1 to 9 days before farrowing and 10 days after it, have been fed with Nanoakvahelat Germanium (in aqueous solution) at a dose of 11.16 mg / kg. In addition, they have been fed for 3 days after farrowing with Glyutam 1M at a dose of 20 ml. Sows in the III experimental group have been fed with Nanoakvahelat Germanium at a dose of 11.16 mg/kg in a period of 4-9 days before farrowing and 10 days after it. Animals in the control group during the period from 1 to 9 days before farrowing and 10 days after it have been given in the feed a saline (20 ml).

Glyutam 1M was fed after farrowing, so, it could not affect the weight of newborn piglets. This gives us an opportunity to combine the control and experimental groups. If to consider the fact, that in the II experimental group Glyutam 1M was also fed after the farrowing and could not affect the weight of newborn piglets; than sows of the II and the III groups were combined to determine the effect of feeding with Nanoakvahelat Germanium before farrowing on the live weight of newborn piglets.

Data analysis shows, that a live weight of normal piglets in the experimental group was at the monitoring level, and the hypotrophous piglets' weight was less by 6.7%. In the experimental group sows born hypotrophous piglets less by 12 head (15.8%) compared with the control one. Nanoakvahelat Germanium medicine could not affect at the total number of newborn piglets –as the number of these piglets is formed in the first days of gestating period, and the medicine has been fed for 1-9 days before farrowing. Therefore, a fewer hypotrophous piglets' number in the experimental group with significantly less live weight (compared with control) may indicate, that Nanoakvahelat Germanium helped to increase the number of normal piglets. So we can assume, that the increase of the number of normal piglets, and the reduce of hypotrophous ones and their live weight ($p \leq 0,05$), show us the effect of Germanium on the redistribution of nutrients: the fetuses with low growth intensity get nutrients from embryos with higher intensity.

To confirm this hypothesis, the experimental piglets were divided into groups depending on the number of days of feeding of Nanoakvahelat Germanium to sows. A live weight of hypotrophous piglets was higher by 9.1% when feeding Nanoakvahelat Germanium from 1 to 5 days before farrowing compared to those ones, that have been fed for 6-7 days. And compared to feeding from 8 to 9 days the difference was within the margin of error. A weight of piglets was lower by 10.0% and 7.5% (6-7 days before farrowing) compared to the subgroups, where the medicine has been given for 1-5 and 8-9 days.

In the subgroup of sows, which were injected with Germanium in a period of 6-7 days before the farrowing, the number of hypotrophous piglets with the lowest body weight was the highest among other groups. Herewith the number of normal piglets was the smallest. That is, the assumption that Germanium promotes redistribution of nutrients between fetuses is not true.

The growth is largely dependent on the sex of the animal. In the experiment a live weight of newborn male and female piglets was nearly at the same level. It means that their growth intensity was almost the same. Comparative analysis (was held depending on the size of newborn of different sexes) shows, that in the control and experimental groups hypotrophous male piglets had a live weight less by 6.2% and 3.5%, and normal piglets' weight was higher by 2.2% and 2.7% compared with females.

Hypotrophous male and female piglets under research had a live weight less by 7.7% and 4.9% compared with control ones. But, newborns normal piglets were almost identical. The number of hypotrophous male and female piglets was lower by 1 and 11 head, and the number of normal piglets was higher by 8 and 5 head respectively. That is, that the hypothesis about the distribution of nutrients affected by Nanoakvahelat Germanium is confirmed. But it is only about male piglets. It should be noted, that there was only onehypotrophous pigletin the experimental group and it was a male one.

Analysis of a live weight and the number of piglets depending on the total feeding dose shows, that a live weight of male piglets increases with the number of days of feeding of the medicine. Such changes of live weight and number of piglets depending on the total dose indirectly support the proposed hypothesis.

Therefore, feeding sows with Nanoakvahelat Germanium from 1 to 9 days increases the number of normal newborn piglets without significant changes in their live weight, as well as this medicine leads to a slight increase in a live weight of male piglets.

***Keywords:* sow, Nanoakvahelat Germanium, live weight, suckling pigs, prenatal period**