UDC 636.4.082:612.63.02

EXTERIOR TRAITS OF PIGS OF THE LARGE WHITE BREED WITH VARIOUS LENGTH OF EMBRYONIC DEVELOPMENT

Matsenko M.I., candidate of agricultural sciences, Associate Professor,
National University of Life and Environmental Sciences of Ukraine

Results of research of linear growth parameters of pigs of the Large White breed with various length of embryonic development. It has been proved that newborn piglets with shortened duration of embryonic period had larger body length and heart girth as compared to the control, which indicates on higher growth intensity of their axial skeleton. Experimental piglets with shortened and medium duration of embryonic development had higher longevity index, whereas pigs with prolonged duration of embryonic period had higher index of body blockiness.

Length of embryonic period, exterior, linear growth, measurements, indexes

It is impossible to get sufficiently complete understanding of the animal growth only on the basis of changes in their live weight, as the growing organism can increase the size of its body without changing its mass. In the process of growth change in proportions of animal's body structure occurs, that cannot be reflected by indicators of their body weight. Linear growth of the animals in their development process increases at a slower rate than the increase in body weight, and some body measurements vary with different intensity.

It is commonly known that the period of embryonic development of commercial breeds pigs vary from 97 till 138 days, that is the difference in the gestation duration of certain sows is 26-41 days.

The aim of the research was to investigate exterior features of the Large White breed pigs with different embryonic development duration.

At an industrial livestock complex with 124 sows of large white breed – age and development analogues, which gestating length ranges from 106 to 122 days and on the average was 114.7 days, three groups of sows (5 heads in the group) with

different gestating duration were formed: group I – a control group, gestating duration – 112-116 days, II and III groups – experimental ones with gestating duration of 102-111 and 117-123 correspondingly.

Duration gestating of sows in the control group on the average was 114.6 ± 0.51 day, in II and III experimental groups – 108.0 ± 0.84 and 118.2 ± 0.97 days respectively.

All sows were brimmed with the same Large White breed boars. Piglets from sows were weaned at 26 days of age. The level of feeding and sows and piglets welfare of all groups was similar. Basic measurements were taken from the newborn piglets, and then at 1, 2, 4 and 6 months. On the basis of measurements the major constitution indexes were calculated.

In the study of research pigs linear growth the difference in the structure of their bodies was determined. For example, newborn pigs with an extended period of embryonic development had indexes of height at withers up to 4.37%, up to 4.53% – of chest girt behind the shoulders and up to 5.31% – of chest width compared with control animals. However, starting from monthly age, piglets with a shorter period of embryonic development had a larger body length and chest girt, than animals in the control group, which indicates a high growth rate of their axial skeleton. Piglets of II and III groups of up to 2 months of age were characterized by significant difference in the measurements of chest width and height at the shoulder. Significant differences in the measurements of chest depth of research pigs were not established.

In order to study intensity increase of linear measurements their relative growth rates were calculated. The growth rate of chest girth measurements behind the shoulders compared with other measurements decreased the most slowly with age. This consistency is caused by that the magnitude of chest girth measurement behind the shoulders is interrelated with the process of pigs' tallowiness, that as is known increases with age.

Relative growth of young stock linear measurements indicates that chest depth and chest width has increased most rapidly in animals of all groups. It should be noted some peculiarities of linear growth measurements of pigs with different

embryonic development duration. Animals with a short and average duration of embryonic development had the highest relative growth for all studied measurements during the entire period of experiment, except for the width chest measurement.

The absolute measurement rates, obtained in the pigs' measurement, do not give a complete vision of changes in body proportions. Therefore, to study changes in the research pigs' body structure major indexes were estimated. The proportions of the body structure of experimental animals were varied with age. For example, format, massiveness and chest indexes of piglets from birth to the age of one month were increased, further their reduction occurred in two months' age. The increase of blockiness and chest indexes were observed up to 6 months' age. When changing leggy index one could observe general consistency for animals of all groups – index decreases with age. The difference in the growing stock body structure with different embryonic development duration was set in the researches. For example, pigs with medium and shorter period of embryonic development had a higher format index from birth till 6 months. Animals with prolonged embryonic development had higher blockiness index. According to the leggy and chest indexes significant differences between the groups were not found.

The data obtained suggest that pigs with different embryonic period duration have differences in linear growth. For example newborn piglets with shortened period of embryonic development had larger body length and chest girths compared with control ones. Animals with reduced and the average period of embryonic development had a greater index of format, with prolonged one – higher blockiness index.

References

1. Беззубов В., Колесень В. Изменение некоторых технологических параметров свинокомплекса / В. Беззубов, В. Колесень // Свиноводство. – 1979. – №10. – С. 33.

2. Кудрявцев П. Н. Племенное дело в свиноводстве / П. Н. Кудрявцев – М.: Сельхозгиз. – 1948. – 360 с.

3. Малигонов А. А. Избранные труды / А. А. Малигонов – М.: Колос, 1968. – 391 с.

4. Плохинский Н. А. Руководство по биометрии для зоотехников / Н. А. Плохинский – М.: Колос, 1969. – 255 с.

5. Пшеничный П. Д. Проблема направленного воспитания молодняка сельскохозяйственных животных / П. Д. Пшеничный // Агробиология. – 1948. – №6. – С. 32-35.

6. Сорокина В. О. О наследовании хозяйственно полезных признаков / В. О.Сорокина // Свиноводство. – 1971. – №11. – С. 30-32.

7. Чирвинский Н. П. Избранные сочинения / в 2-х томах / Н. П. Чирвинский. – М.: Сельхозгиз, 1949. – Т. 1. – 528 с.