SECTION IX.
AGRICULTURAL SCIENCES AND FOODSTUFFS

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FEEDING AND MEAT QUALITY YOUNG PIGS OF DIFFERENT INTERBREED DIFFERENTIATION ACCORDING TO THE TYLER INDEX AND ECONOMIC EFFICIENCY OF THEIR USE

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Abstract. *The article presents the results of the study of the fattening and meat qualities of young pigs of the universal direction of productivity, taking into account their interbreed differentiation according to the Tyler index, and also calculates the economic efficiency of the research results.*

The young pigs of the controlled population exceeded the minimum requirements of the elite class by 6.13% by the age of reaching the live weight of 100 kg, by 32.25% in the thickness of lard at the level of 6-7 thoracic vertebrae, and by 3.92% in the length of the chilled carcass. A significant difference between animals of different interbreed differentiation according to the Tyler index was founded by the average daily gain of live weight, the age of reaching a live weight of 100 kg, the thickness of lard at the level of 6-7 thoracic vertebrae, the length of the chilled carcass, the length of the bacon half of the chilled carcass. The maximum increase in additional production was obtained from young pigs of the 1st experimental group - +5.03%, and its value is +247.51 hryvnias or 8.59 US dollars/head.

The theoretical basis for the research is the scientific works of domestic and foreign scientists [1-5].

The purpose of the work is to investigate the fattening and meat qualities of young pigs in the universal direction of productivity, taking into account interbreed differentiation according to the Tyler index, as well as to calculate the economic efficiency of the research results.

Research material and methods. The experimental part of the work was carried out in agricultural formations of the Dnipropetrovsk region, the meat processing plant "Jazz" and the laboratory of animal husbandry of the State Institution "Institute of Grain Crops of the National Academy of Agrarian Sciences of Ukraine" (Dnipro, Ukraine).

The evaluation of young pigs of the large white breed in terms of fattening and meat qualities was carried out due to the following indicators: average daily gain in live weight during the period of control fattening, kg, age of reaching a live weight of 100 kg, days, lard thickness at the level of 6-7 thoracic vertebrae, mm, the length of the chilled carcass, cm, the length of the bacon half of the chilled carcass, cm. The Tyler index was calculated according to the following formula: **Iv = 100 + (242 × *K*) – (4,13× *L*),** where: Iv – Tyler index, points, K – an average daily gain of live weight, kg; L – fat thickness at the level of 6-7 thoracic vertebrae, mm; 242; 4.13 are constant coefficients [6].

The Tyler index in animals of the I group ranges from 214.89 to 242.85, II - from 195.52 to 213.54, III - from 178.89 to 192.72 points. The feeding and keeping conditions of the young pigs of the experimental groups were identical and corresponded to zootechnical standards.

Biometric processing of the received data [7] and calculation of the cost of additional products [8] was carried out according to generally accepted methods. **Research results.** It was established that the average daily increase in live weight of young pigs of the experimental group (n=51) during the period of control fattening is 792.4±6.37 g (Cv=5.75%). The age of reaching 100 kg live weight is 178.0±0 .68 days (Cv=2.76%), fat thickness at the level of 6-7 thoracic vertebrae – 21.0±0.26 mm (Cv=8.93%), length of the chilled carcass – 96.8±0.22 cm (Cv=1.65%), the length of the bacon half of the cooled carcass is 86.1±0.37 cm (Cv=3.12%). The Tyler index ranges from 178.89 to 242.85 points.

The analysis of the results of the control fattening shows that the young pigs of the I group prevailed over the pigs of the same age of the III in terms of the average daily gain of live weight during the period of the control fattening by 91.7 g (td=9.28; P<0.001), the age of reaching a live weight of 100 kg – 7.3 days (td=4.42; P<0.001), fat thickness at the level of 6-7 thoracic vertebrae - 3.4 mm (td=6.07; P<0.001) (table).

Table

Feeding and meat qualities of young pigs of the large white breed of different interbreed differentiation according to the Tyler index

Indicators, units of measurement	Biometric indicators	Gradations of the Tyler index, point		
		214,89-242,85	**195,52-213,54**	**178,89-192,72**
		group		
		I	**II**	**III**
Average daily gain of live weight during the period of control fattening, g	*n*	*13*	*25*	*13*
	$\overline{X}$ ±S*x*	834,4±7,80	796,4±7,41	742,7±6,07
	Cv±Sc$_v$, %	3,37±0,662	4,65±0,657	2,94±0,577

Table (continuation)

Indicators, units of measurement	Biometric indicators	Gradations of the Tyler index, point		
		214,89-242,85	195,52-213,54	178,89-192,72
		group		
		I	II	III
Age of reaching 100 kg live weight, days	$\overline{X}$ ±Sx	174,4±1,14	177,9±0,85	181,7±1,20
	Cv±Sc$_v$, %	2,35±0,461	2,38±0,336	2,38±0,467
The thickness of the lard at the level of 6-7 thoracic vertebrae, mm	$\overline{X}$ ±Sx	19,1±0,37	21,1±0,28	22,5±0,43
	Cv±Sc$_v$, %	7,01±1,377	6,77±0,957	6,93±1,361
Length of the cooled carcass, cm.	$\overline{X}$ ±Sx	97,4±0,35	97,1±0,33	95,7±0,34
	Cv±Sc$_v$, %	1,29±0,253	1,74±0,246	1,28±0,251
The length of the bacon is half of the cooled carcass, cm.	$\overline{X}$ ±Sx	87,0±0,58	86,1±0,59	84,3±0,47
	Cv±Sc$_v$, %	2,41±0,473	3,46±0,489	2,01±0,394

The difference between the groups in the length of the chilled carcass is 1.7 cm (td=3.54; P<0.01), the length of the bacon half of the chilled carcass, cm. – 2.7 cm (td=3.64; P<0.01), Tyler index – 36.2 points (td=13.35; P<0.001).

Calculations of the economic efficiency of the research results showed that the maximum increase in additional production was obtained from the young pigs of the 1st experimental group - +5.03%, and its cost is +247.51 hryvnias or 8.59 US dollars/head.

Conclusions:

1. It was established that the young pigs of the controlled population exceed the minimum requirements of the elite class by 6.13% by the age of reaching a live weight of 100 kg, the thickness of lard at the level of 6-7 thoracic vertebrae – 32.25% and the length of the chilled carcass – 3.92% .

2. A significant difference between animals of different interbreed differentiation according to Tyler's index is shown by the average daily gain of live weight, the age of reaching a live weight of 100 kg, the thickness of lard at the level of 6-7 thoracic vertebrae, the length of the chilled carcass, the length of the bacon half of the chilled carcass.

3. The maximum increase in additional production was obtained from young pigs of the 1st experimental group - +5.03%, and its value is +247.51 hryvnias or 8.59 US dollars/head.

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