

**RELATIONSHIP BETWEEN MEATINESS TRAITS  
OF LIVE PIGS****A. Klimiene, R. Klimas***Introduction*

The magnitude of correlation between different production traits of pigs depends on many factors, but the most important are breed, genetic structure of the herd, the level of productivity and environmental conditions.

The purpose of this work was to analyse correlations of meatiness traits of purebred pigs, kept in Lithuanian breeding centres and evaluated by apparatus Piglog 105; and their dependence on the age and live weight of animals.

*Materials and methods*

According to the State Pig Breeding Station data, analysis of meatiness traits (backfat and loin lean thickness, lean meat percentage) of purebred pigs; grown in the Lithuanian breeding centres and evaluated by apparatus Piglog 105, has been carried out. Correlation ( $r$ ) of meatiness traits and its dependence on the age and live weight of breeding progeny was determined and analysed for Lithuanian Whites (LW), Swedish Yorkshires (SY), Danish Large Whites (DLW), German Large Whites (GLW), English Large Whites (ELW), German Landraces (GL), Finish Landraces (FL), Norwegian Landraces (NL), Danish Landraces (DL), Pietrains (P) and Durocs (D). 7620 pigs of mentioned breeds were used for that purpose. At the breeding centres measurements were taken for breeding pigs at 85-110 kg live weight. The lean meat percentage was determined with Piglog 105 by measuring the backfat thickness (mm) on live pigs at two points:

- 1) between the 3rd and 4th last lumbar vertebrae and 7 cm sideways from the middle dorsal line (FAT-1);
- 2) 10 cm from the last rib towards the cranial part and 7 cm sideways from the middle dorsal line (FAT-2). The thickness of the loin lean (musculus longissimus dorsi) is also measured at this point.

Paper presented to the 57<sup>th</sup> Annual Meeting of the European Association for Animal Production Meeting, Analya 2006

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## Results

The results presented in Table 1.

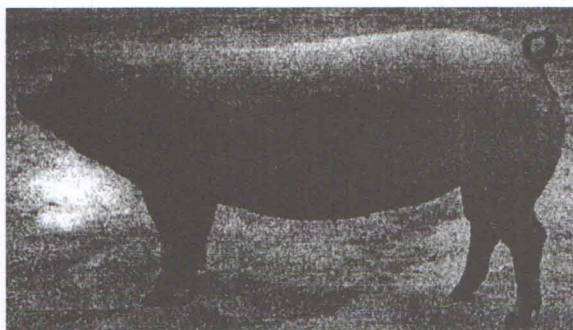
Table 1. CORRELATIONS (R) OF MEATINESS TRAITS OF LIVE PIGS

Item	Breed										
	LW	SY	DLW	GLW	ELW	GL	FL	NL	DL	P	D
Age, in days – backfat thickness at point FAT-1, mm	0.12 <sup>d</sup>	0.18 <sup>d</sup>	0.23	-0.04	0.18 <sup>d</sup>	0.13 <sup>d</sup>	0.17 <sup>d</sup>	0.38 <sup>d</sup>	0.04	0.01	0.29 <sup>d</sup>
Age, in days – backfat thickness at point FAT-2, mm	0.12 <sup>d</sup>	0.19 <sup>d</sup>	0.17	0.01	0.22 <sup>d</sup>	0.10 <sup>d</sup>	-0.02	0.40 <sup>d</sup>	0.02	0.03	0.35 <sup>d</sup>
Age in days – loin lean thickness, mm	0.01	0.12 <sup>d</sup>	0.38 <sup>d</sup>	0.26	0.02	0.09 <sup>d</sup>	0.35 <sup>d</sup>	0.42 <sup>d</sup>	0.05	0.34 <sup>d</sup>	0.23 <sup>d</sup>
Age in days – lean meat content, %	-0.12 <sup>d</sup>	-0.16 <sup>d</sup>	-0.05	0.10	-0.21 <sup>d</sup>	-0.11 <sup>d</sup>	0.08	-0.26 <sup>d</sup>	-0.01	0.10	-0.29 <sup>d</sup>
Live weight, kg – backfat thickness at point FAT-1, mm	0.14 <sup>d</sup>	0.39 <sup>d</sup>	0.36 <sup>d</sup>	0.04	0.37 <sup>d</sup>	0.20 <sup>d</sup>	0.33 <sup>d</sup>	0.52 <sup>d</sup>	0.25 <sup>d</sup>	0.07	0.38 <sup>d</sup>
Live weight, kg – backfat thickness at point FAT-2, mm	0.14 <sup>d</sup>	0.37 <sup>d</sup>	0.41 <sup>d</sup>	0.11	0.34 <sup>d</sup>	0.18 <sup>d</sup>	0.20 <sup>d</sup>	0.49 <sup>d</sup>	0.30 <sup>d</sup>	0.17 <sup>d</sup>	0.45 <sup>d</sup>
Live weight, kg – loin lean thickness, mm	0.19 <sup>d</sup>	0.34 <sup>d</sup>	0.54 <sup>d</sup>	0.34 <sup>d</sup>	0.31 <sup>d</sup>	0.25 <sup>d</sup>	0.60 <sup>d</sup>	0.43 <sup>d</sup>	0.34 <sup>d</sup>	0.39 <sup>d</sup>	0.51 <sup>d</sup>
Live weight, kg – lean meat content, %	-0.10 <sup>d</sup>	-0.31 <sup>d</sup>	-0.17	0.04	-0.27 <sup>d</sup>	-0.10 <sup>d</sup>	0.01	-0.38 <sup>d</sup>	-0.14 <sup>d</sup>	0.02	-0.27 <sup>d</sup>
Backfat thickness at point FAT-1, mm – backfat thickness at point FAT-2, mm	0.84 <sup>d</sup>	0.77	0.68 <sup>d</sup>	0.84 <sup>d</sup>	0.75 <sup>d</sup>	0.68 <sup>d</sup>	0.78 <sup>d</sup>	0.72 <sup>d</sup>	0.79 <sup>d</sup>	0.69 <sup>d</sup>	0.82 <sup>d</sup>
Backfat thickness at point FAT-1, mm – loin lean thickness, mm	-0.05 <sup>b</sup>	0.04	-0.01	0.01	0.28 <sup>d</sup>	-0.02	0.21 <sup>d</sup>	0.08	0.12 <sup>d</sup>	0.14 <sup>d</sup>	0.51 <sup>d</sup>
Backfat thickness at point FAT-1, mm – lean meat content, %	-0.92 <sup>d</sup>	-0.90 <sup>d</sup>	-0.79 <sup>d</sup>	-0.90 <sup>d</sup>	-0.85 <sup>d</sup>	-0.86 <sup>d</sup>	-0.78 <sup>d</sup>	-0.88 <sup>d</sup>	-0.86 <sup>d</sup>	-0.85 <sup>d</sup>	0.84 <sup>d</sup>
Backfat thickness at point FAT-2, mm – loin lean thickness, mm	-0.12 <sup>d</sup>	-0.04	-0.16	-0.05	0.22 <sup>d</sup>	-0.08	-0.03	0.18 <sup>d</sup>	0.14 <sup>d</sup>	0.04	0.45 <sup>d</sup>
Backfat thickness at point FAT-2, mm – lean meat content, %	-0.95 <sup>d</sup>	-0.93 <sup>d</sup>	-0.90 <sup>d</sup>	-0.91 <sup>d</sup>	-0.89 <sup>d</sup>	-0.89 <sup>d</sup>	0.90 <sup>d</sup>	-0.85 <sup>d</sup>	-0.87 <sup>d</sup>	-0.87 <sup>d</sup>	-0.89 <sup>d</sup>
Loin lean thickness, mm – lean meat content, %	0.30 <sup>d</sup>	0.24 <sup>d</sup>	0.47	0.35 <sup>b</sup>	0.11 <sup>a</sup>	0.35 <sup>d</sup>	0.35 <sup>d</sup>	0.23 <sup>d</sup>	0.28 <sup>d</sup>	0.25 <sup>d</sup>	0.11

<sup>a</sup>)P<0.05; <sup>b</sup>)P<0.025; <sup>c</sup>)P<0.01; <sup>d</sup>)P<0.001

### *Conclusion*

Analysis of correlation between meatiness indicators of progeny of different breeds, evaluated in breeding centres with Piglog 105, showed that lean meat percentage of pigs is more related to their backfat thickness ( $r$ = from -0.78 to -0.95,  $P<0.001$ ), than to loin lean thickness ( $r$ = from 0.11 to 0.47). Gain in;g of backfat thickness in one point of the back was followed by analogous process in the other point of the back ( $r$ =from 0.62 to 0.84,  $P<0.001$ ). It was also indicated, that live weight of pigs has more influence on mentioned meatiness traits than age.



### **ODNOS IZMEĐU OSOBINA MESNATOSTI ŽIVIH SVINJA**

#### **Sažetak**

Veličina korelacije između različitih proizvodnih osobina svinja ovisi o mnogo čimbenika, a najvažniji su pasmina, genetska struktura krda, razina proizvodnosti i okolišni uvjeti.

Svrha ovog rada bila je analizirati korelacije osobina mesnatosti čistokrvnih svinja držanih u uzgojnim centrima u Litvi i ocijenjenih aparatom Piglog 105 te njihova ovisnost o dobi i živoj vagi životinja.

Analiza korelacije između indikatora mesnatosti potomaka različitih pasmina ocijenjenih u uzgojnim centrima aparatom Piglog 105 je pokazala da je postotak krtog mesa svinja više u vezi s debljinom leđne masti ( $r$  = od -0.78 do -0.95  $P<0.001$ ) nego s debljinom krtog buta ( $r$  = od 0.11 do 0.47). Porast debljine leđne masti na jednom mjestu leđa praćen je analognim procesom na drugom mjestu leđa ( $r$  = od 0.62 do 0.84,  $P<0.001$ ). Isto tako je uočeno da živa vaga svinja ima veći utjecaj na spomenute osobine mesnatosti nego dob.

Primljeno: 15.01.2007.