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Effect of the share of meat and of the sex on selected quantitative and qualitative indices of the carcass value.

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Abstract

The objective of the work was to determine the influence of the attained share of meat and of sex on selected quantitative and qualitative indices of the carcass value.

116 pcs of abattoir swine of the following genotypes were included into the experiment: (CLW_sxPN) x (CLW_mxCL), PIC x (CLW_mxCL), (HxPN) x (CLW_mxCL) and line 38 x (CLW_mxCL). The pigs were divided according to the grading criteria – „share of lean meat" into 3 groups, it is 60.0 % and more, 55.0 – 59.9 % and 50.0 – 54.9 % of lean muscle. The right abattoir half was cut into individual „meat parts"- leg, roast meat, shoulder, neck and side. From the main meaty parts (MMP) the samples were withdrawn, homogenized and further subjected to the chemical analysis for of the determination of the content of intramuscular fat (IMF).

From the results of the measuring it is resulting, that the highest share of the muscle is shown by the pigs, which have had the average slaughter weight c. 100 – 106 kg. The highest average surface of the meat muscle MLLT (5188 mm^2) was determinated at the group with 55.0 – 59.9% share of the meat of the gilts. The upper-most height of the dorsal fat 21 mm was measured at the groups of barrows and gilts with 50.0 – 54.9% share of fat.

In the course of observation of the electric conductivity measured within 50 minutes post mortem in the muscles MLLT and MS and of the colour of the meat measured with the instrument GŐFO 24 hours post mortem at the muscle MLLT we have discovered, that in all groups it is qualitatively unchanged meat.

The ascertained share of IMF was different for every part of the meat. The highest representation of IMF was in the part neck, barrows 11.42 % and gilts 10.01 % in the group with 50.0 – 54.9 % share of lean meat. In the muscle MLLT the values of IMF varied in interval from 1.51 – 2.01%.

Key words

Pig; lean meat; quantitative indices; qualitative indices; carcass value; sex.

Introducion

The races of swine of the paternal and maternal population bred in Czech Republic, which are exploited in the hybridization programmes already, reach the required meatiness (percentage of the lean meat) and that is why the attention now increasingly turns from the quantitative aspect of the carcass value to the qualitative aspect. The previous trend in the stirpiculture requiring the biggest meatiness subsequently demonstrated the downgrade of some quality indices. It can be presumed, that efficiency of the swine will be constantly increased, and that is why it is necessary to check further both: the quantitative as well as the qualitative indices of the carcass value.

The meaning of the evaluation of abattoir swine according to the share of the lean meat (it is the share of the muscle) in the abattoir body emphasized B r a n s ch e i d *et al.* (1987). The

carcass value of the different hybrid combinations analyzed P u l k r á b e k *et al.* (1993), M a t o u š e k (1991), M a t o u š e k (1996), I v á n e k , S m o l á k (1995).

According to T v r d o ň (2001), the genetic level of the bred swine, the nourishment, the slaughter weight, sex and environmental conditions belong to the factors influencing the share of the lean meat.

P u l k r á b e k *et al.* (1997) state, that with the stirpiculture for the increasing of the share of the muscle in the whole body the considerable increasing of the share of the meaty parts and to this corresponding the big decrease of the share of the fatty parts occur.

B a b a t u d e *et al.* (1966) describe the relations between the characters of carcass value with respect for the content of fat in the abattoir half. The authors point at the higher mutual dependence between the subcutaneous fat and extracted fat of the abattoir half (r=0,72) or between the subcutaneous fat and the height of the dorsal fat (r=0,89).

The influence of the composition of abattoir halves resulting from the sex or castration of the animal were studied for example by K o p e c k ý *et al.* (1972), Š p r y s l (2005).

The influence of sex, eventually of the castration to the quantitative aspect of the carcass value is exerted especially after the achievement of the sexual adulthood. Till its achievement, thus approximately up to the weight of 70 kg the influence of sex is negligible (H o v o r k a , 1989).

B r u w e *et al.* (1991) found out the highest share of the fat at the hog , the lower one at gilts and the lowest at barrows. F e w s o n *et al.* (1990) found out statistically the significant influence of the sex for the growth of the share of ham, shoulder and side in the abattoir body with the growing of the abattoir weight.

W a j d a , B i e l e c k i (1991) compared and evaluated the efficiency and carcass value of 309 young barrows and 320 castratos and gilts in the course of fattening up to the weight of 105 kg. The higher representation of the meaty parts at collateral decrease of the separable fat at the group of barrows was evidenced.

K o u c k ý *et al.* (1993) observed the influence of the sex (boar, barrows and gilts) on the index of carcass value. The weight of the right half was at the observed groups 48.0, 47.8 and 45.8 kg. The percentage of the lean meat 50.04 %, 44.33 % and 49.12 %. The height of the dorsal fat 30.4, 33.9 and 28.6 mm, the surface of the muscle MLLT 3910, 3579 and 3660 mm^2. In the dry matter of the meat and in the content of protein no statistically meaningful differences among sexes were evidenced. Barrows had notably higher share of the IMF in the meat.

The important factor influencing the qualitative aspect of pig meat is the share of the IMF.

According to L a h u č k ý (1997), the swine from the modern breeding stirpicultured for the high share of muscle, have a low share of fat, therefore there are here the problems with the toughness of the meat.

Š e v č í k o v á *et al.* (2002) determined at gilts (LWxL) the content of IMF 19.18 g/kg, the water loss by drain – 3.07 %, remission – 19.67 % and pH_{24} – 5.51. M i k u l e (2005) found 0.71% content of the IMF at the breed LW and 0.85% content of the IMF at the breed L. O l i v e r *et al.* (2003) evidenced the highest content of the IMF at the breed Duroc – 2.89 %.

H r u b á (2005) are highlighting the fact, that at the super meaty swine there are problems with the content of the intramuscular fat, gustative quality, sappiness and crispness.

Methodology and material

The objective of the work was to determine the influence of the attained share of the meat and of the sex on selected quantitative and qualitative indices of the carcass value.

The abattoir swine of the following genotypes were included into the experiment: (CLW_sxPN) x (CLW_mxCL), PIC x (CLW_mxCL), (HxPN) x (CLW_mxCL) and line 38 x (CLW_mxCL). The testing procedure was realized in the testing station in Ploskov near Lány. The bringing and stabling of the swine was performed according to the methodology for the testing procedure of the pedigree and hybrid swine. The pigs were classified into the test in an average weight c. 25 ± 2.5 kg (same age and well-balanced sex - barrows / gilts) and of an average age 65 - 70 days from the birth. The feeding was carried on by means of full feeding mixture (FFM), which contained three components – wheat, barley, soybean extracted meal and feeding supplement, mixed for every pen separately according to the already mentioned methodology. For the evaluation of the quantitative indicators of carcass value there was, after the attainment of the overall average live weight 104.8-117 kg in the age of 156-194 days from the birth, the pigs were killed, commercialized in the slaughter-house by the system SEUROP by the method ZP [ČSN 466160, V r ch l a b s k ý , P a l á s e k (1992), P u l k r á b e k (2001)] and further subjected to the abattoir analysis.

At the right abattoir half the following indices of carcass value were observed:

Quantitative indices, namely

- share of the meat in the abattoir half in %,
- slaughter weight in kg,
- weight of both halves abattoir body while warm in kg,
- weight of the right half abattoir body while cold in kg,
- weight MMP in kg,
- share of MMP in the abattoir halves in %,
- surface MLLT in mm^2,
- average height of dorsal fat in mm,
- weight of the ham total in kg,
- weight of roast meat total in kg,
- weight of shoulder total in kg,
- weight of neck total in kg,
- weight of side total in kg,
- share of ham in % (meat + bone),
- share of roast meat in % (meat + bone),
- share of shoulder in % (meat + bone),
- share of neck in % (meat + bone),
- share of side in % (meat + bone).

Qualitative indexes, thus

a) Physical analyses on the principle of determination

- EV_{50} in MLLT in mS during 50 minutes post mortem,
- EV_{50} in MS in mS during 50 minutes post mortem,
- colour of the meat in GŐFO during 24 hours post mortem in MLLT.

b) Chemical analyses on the principle of determination

- content of the intramuscular fat at muscle MSV, MS, MLLT, MC.

The right abattoir half was cut to individual „carcass parts". At the main meaty parts (MMP) - neck (*musculus serratus ventralis*), roast meat (*musculus longissimus lumborum et thoracis*), shoulder (*musculus cleidocephalicus*) and ham (*musculus semimembranosus*) the samples were withdrawn, homogenized and further subjected to the chemical analysis in order to determine the content of the IMF [the method uses the gravimetric assessment after extraction in the Soxhlet extractor by non-polar solvents (petrol ether)].

According to the grading criteria - the share of the lean meat - 116 abattoir pieces of swine were divided into 3 groups (table 1).

Table 1

Class quality	lean muscle (%)	barrows	gilts	total
S	**60.0 and more**	12	23	**35**
E	**55.0 - 59.9**	25	26	**51**
U	**50.0 - 54.9**	19	11	**30**

The results of the tests were evaluated by the statistical programme SAS® Propriety Software Release 6.04, expressed in a table and graphically, whereas the differences between the individual pursued characters were tested by the simple / multiple analyses of the variance.

Results

With the respect to the grading criteria there are in tables 2–6 stated the fundamental statistical characteristics and the results of the variation analyses for the selected characteristics of the carcass value and quality of the meat. Preliminary it is necessary to state beforehand, that from the operational reasons it was not possible to select for the observation the individuals with the uniform “optimum” slaughter weight. The highest average weight of 119.5 kg was shown out by the group of barrows with the average share of the meat 53.48% in the abattoir half, on the contrary the lowest weight, it is 100.3 kg was ascertained at the group of barrows with the average share of meat 62.91%.

The assumed highest average height of dorsal fat (21 mm) was measured bei barrows and gilts in the group with 50.0 – 54.9% share of meat; on the contrary the lowest height 12 mm was eject in the group with share of meat 60.0 % and more.

As regards the highest average surface of the meat (MLLT), 5188 mm^2 was ascertained at the group gilts with the share of meat 55.0 – 59.9%, on the contrary the lowest value 4745 mm^2 was measured by barrows in the group with share of meat 60.0 % and more.

By monitoring average weight of the main meaty parts the highest value 32.3 kg and 30.1 kg have been found in the group of barrows and gilts with the share of the lean muscle 50.0 – 54.9 %. With regard to the highest slaughter weights, however the relative formulations of the most valuable abattoir parts were only 65.64 %, resp. 64.98 %. Next group was with the share of lean muscle 55.0 – 59.9 %, when the average weight values of the meaty parts were at barrows 29.2 kg and at gilts 29.9 kg, resp. 65.56 % and 66.33 % share of MMP in abattoir halves. The

lowest weights of MMP were shown out by the group with the share of lean muscle 60.0 % and more, barrows – 27.1 kg and gilts – 29.2 kg, resp . 65.39 % and 66.30 %.

In the course of observation of the electric conductivity measured within 50 minutes post mortem (EV $_{50}$) in muscles MLLT and MS were founded out, that in all groups this is qualitatively unchanged meat. The values of the EV $_{50}$ were measured in muscle MLLT at barrows – 3.57, 3.87 and 3.16 mS and gilts – 3.56, 3.90 and 3.14 mS. In the muscle MS this values were at barrows 2.99, 2.96 and 2.89 mS and gilts 3.38, 2.97 and 2.78 mS.

The fact, that this is a qualitatively unchanged meat, that means the normal, is confirmed also by further quality index, which is the colour of the meat, which was observed for 24 hours post mortem on the muscle MLLT by the instrument GŐFO. The measured data have shown the average values 71.74, 72.06 and 70.42 at barrows and 68.69, 71.28 and 68.10 at gilts.

The ascertained share of IMF was diverse for every part of the meat. The highest representation of IMF was in the part neck at barrows 11.42 % and gilts 10.01 % in the group with the share of the lean meat 50.0 – 54.9 %. The lowest representation of IMF was shown out at part roast meat at gilts 1.51 % in the groups of 60.0 % and more of lean muscle and 1.59 % in the groups of 55.0 – 59.9 % .

In terms of sex the statistically meaningful differences were ascertained among groups of barrows, except of the share of MMP in abattoir halves, of surface of MLLT, share of roast meat and side in the abattoir halve, EV $_{50}$ MS, colour of the meat and IMF of ham.

At gilts the statistically meaningful differences among the groups were ascertained only - share of the meat in abattoir halves, slaughter weights, share MMP, surfaces of the meat, average heights of the dorsal fat, weights of the side in total, IMF of ham and neck.

In terms of evaluation of the differences between the sex of the same group, can be state, that have been found at the group of swine with 60.0 % and more of lean muscle, in terms of IMF of neck ($P \leq 0.01$) and at the group 55.0 – 59.9 % of lean muscle share of MMP, surface of MLLT and average height of dorsal fat ($P \leq 0.05$) and IMF of shoulder ($P \leq 0.01$).

Conclusion

From the results of metering it is resulting that

- the optimal lean at the modern hybrid pigs reach for with the average slaughter weight 100.3 kg at barrows pigs and 105.4 kg at gilts,
- at gilts and barrows it was confirmed, that with the higher share of muscle the average height of dorsal fat and weight of MMP is declining,
- at barrows the highest share of MMP in the group 50.0 – 54.9 % of lean muscle was ascertained, on the contrary at gilts the highest share of MMP was found at the group 55.0 – 59.9 % of lean muscle,
- from the results of monitoring of EV $_{50}$ and colour of the meat it is resulting, that at all groups from the point of view of the defect incidence of the meat it is so-called "normal meat",
- the content of IMF affect the abattoir part /sex, when the highest content of IMF was ascertained at the part neck at barrows (11.42 %) and the lowest content of IMF was shown out at the part roast meat at gilts (1.51 %),
- statistically meaningful differences have been found further between sex of the same group and between same sexes of different groups.

- next were showed significant inter- and intra-active differences by groups of the meat and of the sex evasive these quantitative and qualitative indices of the carcass value.

Table 2: Quantitative and qualitative indices of the carcass value with 60.0 % and more of lean muscle.

Group	**60.0 % and more of lean muscle**					
Sex	**barrows**			**gilts**		
N	**12**			**23**		
	$\bar{x}$	±	**SD**	$\bar{x}$	±	**SD**
Share of the meat in the abattoir half (%)	62.91	±	0.84	64.96	±	0.73
Slaughter weight (kg)	100.3	±	4.10	105.4	±	1.58
Weight of both halves in the abattoir warm (kg)	83.2	±	3.83	88.9	±	1.41
Weight of the right half abattoir while warm (kg)	41.4	±	1.92	44.1	±	0.68
Weight MMP (kg)	27.1	±	1.35	29.2	±	0.49
Share of MMP in the abattoir halves (%)	65.39	±	0.48	66.3	±	0.38
Surface MLLT (mm2)	4745	±	286.12	5124	±	141.05
Average height of dorsal fat (mm)	12	±	0.84	12	±	0.66
Weight of the ham total (kg)	11.2	±	0.56	12.0	±	0.22
Weight of the roast total (kg)	7.2	±	0.43	7.9	±	0.23
Weight of the shoulder total (kg)	5.6	±	0.25	5.9	±	0.08
Weight of the neck total (kg)	3.1	±	0.15	3.3	±	0.39
Weight of the side total (kg)	6.6	±	0.35	6.9	±	0.15
Share of ham (%)	35.83	±	2.22	31.99	±	1.51
Share of roast (%)	22.51	±	1.08	20.72	±	0.74
Share of shoulder (%)	17.81	±	1.16	15.78	±	0.72
Share of neck (%)	9.90	±	0.62	8.74	±	0.39
Share of side (%)	20.84	±	1.27	18.46	±	0.96
EV 50 (mS) in MLLT	3.57	±	0.18	3.56	±	0.24
EV 50 (mS) in MS	2.99	±	0.14	3.38	±	0.37
Colour meat in MLLT	71.74	±	1.55	68.69	±	1.15
IMF ham (%)	3.31	±	0.31	3.62	±	0.22
IMF roast (%)	1.65	±	0.14	1.51	±	0.10
IMF shoulder (%)	3.56	±	0.29	3.16	±	0.21
IMF neck (%)	7.39 [a]	±	0.76	5.08 [a]	±	0.55

Comment : a≤0.01

Table 3: Quantitative and qualitative indices of the carcass value with 55.0 - 59.9 % of lean muscle.

Group	**55.0 - 59.9 % of lean muscle**					
Sex	**barrows**			**gilts**		
N	**25**			**26**		
	$\bar{x}$	±	**SD**	$\bar{x}$	±	**SD**
Share of the meat in the abattoir half (%)	57.30	±	0.25	57.73	±	0.29
Slaughter weight (kg)	107.5	±	2.39	109.7	±	1.62
Weight of both halves in the abattoir warm (kg)	89.9	±	1.82	90.8	±	1.27
Weight of the right half abattoir while warm (kg)	44.6	±	0.92	45.1	±	0.66
Weight MMP (kg)	29.2	±	0.65	29.9	±	0.41
Share of MMP in the abattoir halves (%)	65.56 $^{\alpha}$	±	0.26	66.33 $^{\alpha}$	±	0.27
Surface MLLT (mm2)	4821 $^{\alpha}$	±	123.15	5188 $^{\alpha}$	±	98.55
Average height of dorsal fat (mm)	16 $^{\alpha}$	±	0.60	14 $^{\alpha}$	±	0.63
Weight of the ham total (kg)	11.9	±	0.26	12.2	±	0.18
Weight of the roast total (kg)	8.1	±	0.22	8.2	±	0.16
Weight of the shoulder total (kg)	5.9	±	0.14	6.0	±	0.09
Weight of the neck total (kg)	3.3	±	0.08	3.4	±	0.06
Weight of the side total (kg)	7.3	±	0.20	7.4	±	0.15
Share of ham (%)	30.15	±	1.30	31.51	±	1.27
Share of roast (%)	20.57	±	0.86	21.16	±	0.80
Share of shoulder (%)	15.03	±	0.61	15.61	±	0.65
Share of neck (%)	8.26	±	0.31	8.84	±	0.39
Share of side (%)	18.51	±	0.72	19.10	±	0.82
EV 50 (mS) in MLLT	3.87	±	0.27	3.90	±	0.33
EV 50 (mS) in MS	2.96	±	0.12	2.97	±	0.07
Colour meat in MLLT	72.06	±	0.98	71.28	±	1.00
IMF ham (%)	3.77	±	0.21	3.53	±	0.21
IMF roast (%)	1.63	±	0.09	1.59	±	0.10
IMF shoulder (%)	4.42 ^{a}	±	0.20	3.42 ^{a}	±	0.20
IMF neck (%)	8.67	±	0.52	9.58	±	0.51

Comment: $a \leq 0.01$; $\alpha \leq 0.05$

Table 4: Quantitative and qualitative indices of the carcass value with 50.0 % - 54.9 % of lean muscle.

Group	**50.0 % - 54.9 % of lean muscle**					
Sex	**barrows**			**gilts**		
N	**19**			**11**		
	$\bar{x}$	±	**SD**	$\bar{x}$	±	**SD**
Share of the meat in the abattoir half (%)	53.48	±	0.26	53.75	±	0.28
Slaughter weight (kg)	119.5	±	3.00	113.8	±	4.47
Weight of both halves in the abattoir warm (kg)	99.1	±	2.30	93.5	±	3.60
Weight of the right half abattoir while warm (kg)	49.2	±	1.16	46.3	±	1.85
Weight MMP (kg)	32.3	±	0.81	30.1	±	1.27
Share of MMP in the abattoir halves (%)	65.64	±	0.28	64.98	±	0.57
Surface MLLT (mm2)	4824	±	125.93	4681	±	253.55
Average height of dorsal fat (mm)	21	±	0.67	21	±	1.22
Weight of the ham total (kg)	12.9	±	0.33	12.1	±	0.53
Weight of the roast total (kg)	9.3	±	0.31	8.6	±	0.43
Weight of the shoulder total (kg)	6.6	±	0.14	6.1	±	0.22
Weight of the neck total (kg)	3.6	±	0.09	3.3	±	0.15
Weight of the side total (kg)	8.3	±	0.21	7.8	±	0.36
Share of ham (%)	29.18	±	1.32	32.92	±	2.09
Share of roast (%)	20.93	±	0.90	23.22	±	1.44
Share of shoulder (%)	14.93	±	0.74	16.82	±	1.35
Share of neck (%)	8.10	±	0.40	8.76	±	0.53
Share of side (%)	18.79	±	0.94	21.46	±	1.74
EV 50 (mS) in MLLT	3.16	±	0.15	3.14	±	0.13
EV 50 (mS) in MS	2.89	±	0.15	2.78	±	0.09
Colour meat in MLLT	70.42	±	1.48	68.1	±	1.14
IMF ham (%)	4.09	±	0.26	4.53	±	0.33
IMF roast (%)	2.01	±	0.11	1.86	±	0.15
IMF shoulder (%)	3.95	±	0.23	3.56	±	0.30
IMF neck (%)	11.42	±	0.60	10.01	±	0.79

Table 5: Statistically difference between the share of the lean muscle groups - barrows.

Sex	**Barrows**		
Share of the meat in the abattoir half (%)	**60.0 and more**	**55.0 - 59.9**	**50.0 - 54.9**
N	**12**	**25**	**19**
	$\bar{x}$	$\bar{x}$	$\bar{x}$
Share of the meat in the abattoir half (%)	62.91 ^{A,B}	57.30 ^{A,C}	53.48 ^{B,C}
Slaughter weight (kg)	100.3 ^{A}	107.5 ^{a}	119.5 ^{A,a}
Weight of both halves in the abattoir warm (kg)	83.2 ^{A}	89.9 ^{a}	99.1 ^{A,a}
Weight of the right half abattoir while warm (kg)	41.4 ^{A}	44.6 ^{a}	49.2 ^{A,a}
Weight MMP (kg)	27.1 ^{A}	29.2 ^{a}	32.3 ^{A,a}
Share of MMP in the abattoir halves (%)	65.39	65.56	65.64
Surface MLLT (mm2)	4745	4821	4824
Average height of dorsal fat (mm)	12 ^{A,B}	16 ^{A,C}	21 ^{B,C}
Weight of the ham total (kg)	11.2 ^{a}	11.9 $^{\alpha}$	12.9 $^{a,\alpha}$
Weight of the roast total (kg)	7.2 $^{A,\alpha}$	8.1 $^{a,\alpha}$	9.3 ^{A,a}
Weight of the shoulder total (kg)	5.6 ^{A}	5.9 ^{a}	6.6 ^{A,a}
Weight of the neck total (kg)	3.1 ^{a}	3.3 $^{\alpha}$	3.6 $^{a,\alpha}$
Weight of the side total (kg)	6.6 $^{A,\alpha}$	7.3 $^{\alpha,a}$	8.3 ^{A,a}
Share of ham (%)	35.83 $^{a,\alpha}$	30.15 $^{\alpha}$	29.18 ^{a}
Share of roast (%)	22.51	20.57	20.93
Share of shoulder (%)	17.81 $^{\alpha,\beta}$	15.03 $^{\alpha}$	14.93 $^{\beta}$
Share of neck (%)	9.90 $^{a,\alpha}$	8.26 $^{\alpha}$	8.10 ^{a}
Share of side (%)	20.84	18.51	18.79
EV 50 (mS) in MLLT	3.57	3.87 ^{a}	3.16 ^{a}
EV 50 (mS) in MS	2.99	2.96	2.89
Colour meat in MLLT	71.74	72.06	70.42
IMF ham (%)	3.31	3.77	4.09
IMF roast (%)	1.65 $^{\alpha}$	1.63 ^{a}	2.01 $^{a,\alpha}$
IMF shoulder (%)	3.56 $^{\alpha}$	4.42 $^{\alpha}$	3.95
IMF neck (%)	7.39 ^{A}	8.67 ^{a}	11.42 ^{A,a}

Comment : A,B,C≤0.001; a≤0.01; α,β≤0.05

Table 6: Statistically difference between the share of the lean muscle groups – gilts.

Sex	**gilts**		
Share of the meat in the abattoir half (%)	**60.0 and more**	**55.0 - 59.9**	**50.0 - 54.9**
N	**23**	**26**	**11**
	$\bar{x}$	$\bar{x}$	$\bar{x}$
Share of the meat in the abattoir half (%)	64.96 ^{A,B}	57.73 ^{A,C}	53.75 ^{B,C}
Slaughter weight (kg)	105.4 $^{\alpha}$	109.7	113.8 $^{\alpha}$
Weight of both halves in the abattoir warm (kg)	88.9	90.8	93.5
Weight of the right half abattoir while warm (kg)	44.1	45.1	46.3
Weight MMP (kg)	29.2	29.9	30.1
Share of MMP in the abattoir halves (%)	66.30 $^{\alpha}$	66.33 $^{\beta}$	64.98 $^{\alpha,\beta}$
Surface MLLT (mm2)	5124	5188 $^{\alpha}$	4681 $^{\alpha}$
Average height of dorsal fat (mm)	12 $^{A,\alpha}$	14 $^{B,\alpha}$	21 ^{A,B}
Weight of the ham total (kg)	12.0	12.2	12.1
Weight of the roast total (kg)	7.9	8.2	8.6
Weight of the shoulder total (kg)	5.9	6.0	6.1
Weight of the neck total (kg)	3.3	3.4	3.3
Weight of the side total (kg)	6.9 ^{a}	7.4	7.8 ^{a}
Share of ham (%)	31.99	31.51	32.92
Share of roast (%)	20.72	21.16	23.22
Share of shoulder (%)	15.78	15.61	16.82
Share of neck (%)	8.74	8.84	8.76
Share of side (%)	18.46	19.10	21.46
EV 50 (mS) in MLLT	3.56	3.90	3.14
EV 50 (mS) in MS	3.38	2.97	2.78
Colour meat in MLLT	68.69	71.28	68.1
IMF ham (%)	3.62 ^{a}	3.53 ^{b}	4.53 ^{a,b}
IMF roast (%)	1.51	1.59	1.86
IMF shoulder (%)	3.16	3.42	3.56
IMF neck (%)	5.08 ^{A,B}	9.58 ^{A}	10.01 ^{B}

Comment: A,B,C≤0.001; a≤0.01; α,β≤0.05

Abreviations

CL - Czech Landrace,
CLW_m - Czech Large White (male),
CLW_s - Czech Large White (sire),
EV_{50} - Electric conductivity measurement during 50 minutes post mortem,
H - Hamshiere
IMF - Intramuscular fat
MC - M*usculus cleidocephalicus*
MLLT - *Musculus longissimus lumborum et thoracis*
MMP - Main meaty parts
MS - *Musculus semimembranosus*
MSV - *Musculus serratus ventralis*
PIC - firm product
PN - Pietrain

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