Meat quality characteristics of Duroc×Yorkshire, Duroc×Yorkshire×Wild Boar and Wild Boar

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Abstract

Chemical composition, pH value, fatty acids profile, cholesterol content, color and sensory analysis of pork meat from Duroc×Yorkshire (D×Y), Duroc×Yorkshire×wild boar (D×Y×WB) crossbreeds and wild boars (WB) was investigated. Samples for all tests were taken from *m. longissimus dorsi*. The chemical composition and pH value were tested by ISO methods. Fatty acid and cholesterol determination was performed by gas chromatography with external standard. The color was determined instrumentally using the thristimulus colourimeter. The overall sensory quality (appearance, texture and smell) of samples of raw meat was evaluated. A scoring system was used in the evaluation of the results. Statistically significant differences ($p < 0.05$) were found in the chemical composition (moisture, fat, protein and ash) and pH values between each of the examined groups, as well as fatty acids and cholesterol content among all the examined groups. Measurments of the colour of meat from all three groups showed that the L^*, a^*, b^*, Chroma and Hue angle were also statistically significantly different ($p < 0.01$)

Keywords: meat quality, Duroc, Yorkshire, wild boar.

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The quality of pork meat includes different aspects: technological (water holding capacity, pH, intensity and homogeneity of colour, firmness and processing yield), chemical (protein, fat, fatty acids profile and content of cholesterol, conjugated linoleic acid, vitamins and minerals) and sensory (colour, marbling, tenderness, juiciness and flavour). These aspects are influenced by many factors before and after the slaughtering.

The pH value in the muscle after slaughtering is the main factor that affects the meat colour, water holding capacity of binding water, water loss during cooking, processing yield, etc. Rapid acidification of muscle proteins leads to their denaturation and some irregular metabolic processes [1]. The proximate composition and intramuscular fat content are important factors that affect the meat quality and nutritional value. The proximate composition of meat depends on many factors, such as the anatomic region, type of muscle fibres and condition of animal, breed and diet. There are many differences in the fatty acid composition of meat and adipose tissue between various kinds of animals. In pigs, the adipose tissue has a higher content of fat than meat, but the fatty acid composition is similar as in meat [2]. The content of linoleic acid is higher in tissues of pigs than in tissues of cattle and small ruminants. Linoleic acid originates primarily from the feed. It passes unchanged through the intestines of pigs, then through blood vessels, and is finally incurporated into the tissue. Different fatty acid composition in meat can be achieved by adding some fatty acids in feed mixtures or using feedstuffs that have higher content of ω-3 fatty acids, such as linen seed. The recommended relation between all polyunsaturated and saturated fatty acids in nutrition is 0.4 or higher, and it is higher in pigs than in ruminants [2]. Selection of pigs in recent decades has mostly been focused on production of large amount of lean meat. New genetic lines deposit less fat in the body and they have less live weight than traditional breeds. To this aim, in modern pig breeding Duroc pigs are chosen because of suitable intramuscular fat content [3,4].

One of the most important meat attributes is colour, which is caused by concentration of myoglobin, its chemical status on the surface of meat, structure and physical status of muscle proteins and the proportion of muscular fat [5]. The colour of meat depends also on the age, condition, diet and pH values [6]. Some authors suggest that the content of myoglobin in skeletal muscle depends on race, while other authors found no differences.

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The sensory perception of meat depends on many factors, such as the characteristics of the breed, weight, sex, diet and the biochemical changes that occur during further processing, slaughtering, maturation, heat treatment and cooking [7]. The eating pork quality, evaluated as sensory perceptions during consumption, consists of several attributes. Among the most important are tenderness, juiciness, flavour and absence of off-flavours [8]. In the case of raw meat bought by consumers for house consumption, the significant traits are the amount of visible fat and colour [9].

The aim of this paper was to investigate if there were any statistically significant differences between chemical composition and pH value, fatty acid composition, cholesterol content, colour and sensory characteristics of pork meat originating from Duroc×Yorkshire (D×Y), Duroc×Yorkshire×wild boar (D×Y×WB) and wild boars (WB).

MATERIALS AND METHODS

A total of 60 pigs were used for the trial: 20 castrated males Duroc×Yorkshire (D×Y), 20 castrated males Duroc×Yorkshire×wild boar (first generation crossed pig Duroc×Yorkshire with wild boar) (D×Y×WB) and samples collected from 20 shot wild boars (WB). Pigs were bred under the same conditions and fed with the same standard diet adequate for their category. Breeding of pigs was under all hygienic and zootechnical conditions. The animals were slaughtered at final live weight that was in the range 96–112 kg.

Wild boars weighed between 140 to 150 kg and aged about one year. The hunting ground is located in the southwest and southeast region Šumadija, Serbia. These are primarily habitats of steppe and steppe forest vegetation, which predominates in deciduous trees – oak, elm, linden, chestnut and hazel. The dominating herbaceous species are *Graminaceae*, *Asteraceae* and *Poaceae*, and the representative cereals are corn, wheat and barley [10].

The material used for the determination of chemical composition, fatty acids and cholesterol content was *m. longissimus dorsi* from the left side of the halves. For colour measurement, the same muscle from the right side of halves was used. Protein content was calculated from nitrogen content multiplied by 6.25 using relevant ISO standards [11]. The fat content was determined according to relevant ISO standards [12], as well as moisture content [13], ash content [14] and pH value [15]. Chemical parameters and pH were measured in the meat 24 h after slaughter. The Folch–Lees method [16] was applied for the lipid extraction from the tissue. After the lipid hydrolysis, the fatty acids were esterified to methyl esters, evaporated to dryness in a stream of nitrogen and stored at –18 °C. Analysis of FAMEs and cholesterol was performed by an external standard method using a gas chromatograph (GC6890N, Agilent Tech., USA) by comparing with standard mix of FAMEs 37 (Supelco, USA).

The colour was measured on the fresh meat cuts of the *m. longissimus dorsi pars lumborum*, from the right side of each carcass (n = 20, two times, for each sample). CIE $L^*a^*b^*$ and CIEYxy colour coordinates [17] were determined using a Minolta chromameter CR-400 (Minolta Co Ltd., Osaka, Japan) in D-65 lighting, with a standard angle of 2° of shelter and 8 mm aperture of the measuring head. In CIE $L^*a^*b^*$ results were given as the mean values: L^* – psychometer light, a^* – psychometer tone, b^* – psychometer chroma, hue angle and chroma.

The overall sensory quality (appearance, texture and smell) of all samples of raw meat from D×Y, D×Y×WB and WB was evaluated. A scoring range of 1.00 to 5.00 was used, with the possibility of assigning half- and quarter-points. For each selected quality characteristic the coefficient of importance (*CI*) was determined, which was used for the correction (multiplication) of given ratings. The coefficients were chosen according to the importance of effect of individual characteristics on the overall quality, and balanced so that their sum was 20. Addition of individual scores gave us a complex indicator that represented the overall sensory quality and was expressed as "percentage of the maximum possible quality". Dividing that value by the sum of the coefficients obtained by weighted importance mean score, which also represented the overall sensory quality of raw meat samples D×Y, D×Y×WB and WB. Rating: 1.00 – very pronounced errors, 2.00 – pronounced errors, 3.00 – noticeable deviations, 4.00–5.00 and slight differences – fully meets the requirements for quality. In evaluation of sensory characteristics of raw meat quality D×Y, D×Y×WB and WB [18], 20 experienced tasters were involved [19,20].

Data obtained in investigations were analysed by descriptive and analytical statistics, using Microsoft Excel 2003, ANOVA and the differences between two averages were compared by the t-test at the level of significance of 99% and 95%.

RESULTS

The results obtained during the investigation relating live animal weight, chemical composition and pH value of pork meat are shown in Table 1.

The wild boars had bigger live weight (P < 0.05) than D×Y×WB and D×Y, but D×Y did not differ (P > 0.05) from D×Y×WB. The average water means, expressed as percentage, showed that there were differences between all mutually compared groups (P < 0.05). There were also differences between all mutually compared groups (P < 0.05) regarding total fats, as well as

Table 1. Live animal weight, chemical composition and pH value of the m. longissimus dorsi in Duroc×Yorkshire, Duroc×Yorkshire×wild boar and wild boar (n = 20); a,b,c – row means with different superscripts differ significantly at P < 0.05

Parameter	Breeds of pigs		
	Duroc×Yorkshire	Duroc×Yorkshire×wild boar	Wild boar
Live weight, kg	100.48^{a}±4.99	100.85^{b}±4.88	144.77^{c} ±3.29
Moisture, %	74.42^{c}±0.07	74.07^{b}±0.03	72.97^{a}±0.09
Fat, %	2.78^{c}±0.05	2.26^{b}±0.04	1.87^{a}±0.11
Protein, %	21.80^{a}±0.14	22.12^{b}±0.06	23.67^{c}±0.22
Ash, %	0.84^{a}±0.08	1.33^{c}±0.03	1.26^{b}±0.11
pH, after 24 h	5.79^{b}±0.09	5.80^{c}±0.07	5.48^{a}±0.02

for average proteins values and the average ash mean. The pH value of D×Y meat did not differ (P > 0.05) from D×Y×WB meat, while the pH value of WB meat was significantly lower than D×Y meat and D×Y×WB meat (P < 0.05).

Results of examination of fatty acid composition and cholesterol content in pork from three groups D×Y, D×Y×WB and WB are presented in Table 2. This table shows that there were differences between all mutually compared groups (P < 0.05).

Instrumentally measured values regarding the colour characteristics of meat samples, expressed in CIE $L^*a^*b^*$ system for three groups are presented in Table 3.

For the values obtained for lightness of meat (L^*) between all mutually compared groups there were differences (P < 0.01). Regarding redness of meat (a*) the WB meat differed (P < 0.01) from D×Y meat and D×Y×WB meat, while D×Y meat did not differ (P > 0.01) from D×Y×WB. Regarding obtained values for yellowness of meat (b^*) the WB meat differed (P < 0.01) from D×Y meat and D×Y×WB meat, while D×Y meat did not differ (P > 0.01) from D×Y×WB meat. For the hue angle, the WB meat differed (P < 0.01) from D×Y meat and D×Y×WB meat, but D×Y meat did not differ (P > 0.01) from D×Y×WB meat. The obtained chroma values in WB meat differed (P < 0.01) from D×Y meat and D×Y×WB meat, while in D×Y meat did not differ (P > 0.01) from D×Y×WB meat.

Based on sensory estimation of appearance, *i.e.*, colour and surface of raw meat pieces from different breeds of pigs (visual technique), it is evident that the greatest number of points was obtained from D×Y×WB sample (20±0.25), and it had a peculiar colour. Then follows a D×Y sample (18.80±0.28), which was slightly darker than the previous sample. The sample with the lowest number of points for colour as appearance and size, was a sample of WB meat (18.00±0.28) (Table 4). Generally speaking, those were minor differences in shades, *i.e.*, surface brightness, among different kinds of raw pork pieces, but still visually characterized by highly experienced and trained tasters as "conditional" different, but characteristic shades of colour. This observation is in accordance to results of instrumental colour determination, the same samples of pig raw meat, measured by the Minolta CR-400 chromameter (Table 3).

For the sample D×Y by visual technique characteristic, uniform distribution of muscle fibers at the intersection of pig meat was reported (14.00±0.25), and the corresponding characteristic hardness (15.00±0.23), evaluated by palpatory technique. Practically, for the textural properties samples of D×Y×WB raw meat

Table 2. Fatty acid composition and cholesterol of the m. longissimus dorsi of Duroc×Yorkshire, Duroc×Yorkshire×wild boar and wild boar (n = 20); a,b,c – row means with different superscripts differ significantly at P < 0.05

FAME (% of total fatty acids)	Breeds of pigs		
	Duroc×Yorkshire	Duroc×Yorkshire×wild boar	Wild boar
Myristic acid (C14:0)	1.53^{a}±0.02	2.40^{b}±0.03	3.01^{c}±0.51
Palmitic acid (C16:0)	25.55^{a}±0.09	30.34^{b}±0.41	33.20^{c}±0.30
Palmitoleic acid (C16:1)	2.69^{c}±0.07	1.76^{b}±0,03	0.65^{a}±0.01
Stearic acid (C18:0)	14.29^{a}±0.20	19.08^{b}±0.16	21.97^{c}±0.13
Oleic acid (C18:1)	43.18^{c}±0.29	40.01^{b}±0.20	36.15^{a}±0.12
Linoleic acid (C18:2)	9.28^{c} ±1.64	5.17^{b}±0.03	3.29^{a}±0.02
SFA	41.37	51.82	58.18
USFA	55.15	46.94	40.09
USFA/SFA	1.33	0.91	0.69
Cholesterol, mg/100 g	59.80^{c}±0.62	51.00^{b}±0.55	44.94^{a}±0.55

*Table 3. Colour parameters of the m. longissimus dorsi of Duroc×Yorkshire, Duroc××wild boar and wild boar expressed in CIE L*a*b* system (n = 20); a,b,c – row means with different superscripts differ significantly at P < 0.05*

Colour parameter	Breeds of pigs		
	Duroc×Yorkshire	Duroc×Yorkshire×wild boar	Wild boar
Lightness – *L**	50.50^{c}±1.00	48.40^{b}±1.10	42.16^{a}±1.47
Redness – *a**	7.58^{a}±0.50	7.75^{a}±0.40	11.97^{b}±0.44
Yellowness – *b**	14.20^{b}±0.60	14.70^{b}±0.50	8.94^{a}±0.33
Hue angle	30.50^{b}±2.10	30.30^{b}±1.70	26.13^{a}±2.21
Chroma	16.10^{b}±0.60	16.60^{b}±0.50	11.75^{a}±1.19

(12.50±0.18) and samples of raw WB meat (12.50±0.16) were evaluated with the same score (Table 4). Our results of sensory evaluation of smell of raw meat from different breeds of pigs clearly show that meat of WB had very peculiar, stable odour intensity (48.50±0.20), then the characteristic smell of D×Y×WB meat (47.50±0.13), and slightly lower, but still characteristic odour intensity of D×Y meat (46.00±0.32) (Table 4).

So we could surely say that from the sensory point (assessing odour), the highest quality was found for the meat of wild boar. The percentage of the maximum score for all evaluated characteristics, as well as the weighted mean value of ratings is shown in Table 4. Based on the total number of points that is high sensory quality, the order would be as follows: D×Y (93.80/ /4.69), D×Y×WB (92.00/4.60) and WB (92.0/4.50).

DISCUSSION

For D×Y and D×Y×WB meat, the chemical composition depends on the diet, race, manner of holding and other factors. According to Pierson [21], fats are the basic ingredient for the perception of taste in the meat, as it is characteristic for the taste of meat of different animal species. Kim *et al.* [22] in their research showed that the chemical composition is not the same in all muscles of pig carcass. They investigated 21 muscles. The muscle *longissimus dorsi* is very interesting for comparison with our results. According to these authors, the percentage of water was 75.51%, protein 21.79%, fat 2.02% and ash 0.99%. Our results were not in agreement with the results of these authors. Jukna and Jukna [23] have also investigated the chemical composition of *m. longissimus dorsi* from different pig breeds. We can compare the findings with the chemical composition of *m. longissimus dorsi* Yorkshire. Our results for water, protein and ash in the first two test groups were similar with the findings of these authors (water 74.91%, protein 22.39% and ash 1.09%), while the fat was different (1.61%). Oliver *et al.* [3] studied the chemical composition of *m. longissimus dorsi* of five different crossbreeds, which included Duroc (DU), Landrace (LR), Large White (LW) and Belgian Landrace (BL). In our research, obtained values for water, fat, protein and ash in the first two test groups were the closest to the authors who got the breed DU×(LR×LW). Their findings were 74.12% of water, fat 1.88% and 22.51% of protein. Jacyno *et al.* [24] studied chemical composition in *m. longissimus dorsi* of fleshy pigs: water 72.70%, 23.50% protein, 2.79% intramuscular

Table 4. Sensory evaluation of pigs meat

Breeds of pigs		Attribute				Percentage of maximal possible quality 100	Weighted average 100/20
		Appearance	Texture		Flavour		
		Colour surface	Visual evaluated structure	Palpatory evaluated firmness	Olfactory evaluated odour		
		Coefficient of importance					
		4	3	3	10		
Duroc×Yorkshire	M	18.80	14.00	15.00	46.00	93.80	4.69
	Sd	0.28	0.25	0.23	0.32		
	Cv	1.47	1.76	1.51	0.71		
Duroc×Yorkshire ×wild boar	M	20.00	12.50	12.00	47.50	92.00	4.60
	Sd	0.25	0.18	0.18	0.13		
	Cv	1.27	1.42	1.42	0.28		
Wild boar	M	18.00	12.50	11.00	48.50	90.00	4.50
	Sd	0.28	0.16	0.39	0.20		
	Cv	1.58	1.28	3.58	0.41		

fat. The results of these authors concerning the content of water and protein are not in agreement with our results, while the content of intramuscular masses is in line. Our results regarding fat approximate the findings of Václavková and Bečková [25], who examined the effects of various additives on the chemical composition of the *m. longissimus dorsi* of crossbreed (Czech Large White×Czech Landrace)×(Hampshire×Pietrain). Our findings of fat content in *m. longissimus dorsi* of Duroc×Yorkshire (D×Y) and Duroc×Yorkshire×wild boar (D×Y×WB) were similar to the findings of fat in *m. longissimus dorsi* of the control group (2.10±0.40 %) which was regularly fed. However, our results of intramuscular fat were different from the findings (1.6±0.4) of Simek *et al.* [26]. The same authors have determined the pH values in all lines after 24 h. The values ranged from 5.6±0.1 to 5.7±0.2, and were in accordance with the values that we noted 24 h after, by measuring samples D×Y (5.79±0.09) and the D×Y×WB (5.80±0.07). Kasprzyk *et al*. [27] measured the pH value of the crossed (Hampshire×Wild boar) after 24 h from the time of slaughter 5.75±0.22, which is consistent with our results for pH values of D×Y×WB (5.80±0.07). The same authors measured the Pulawska line (5.41±0.25), which was lower value than we had got in D×Y (5.79±0.09).

Václavková and Bečková [25] in the same experiment examined the prevalence of specific fatty acids. Their findings for myristic C14: 0 (1.29±0.17), palmitic C16: 0 (24.44±1.08), stearic C18: 0 (12.78±0.52), oleic C18: 1 (40.40±1.53) and linoleic acid C18: 2 (1.77±7.53) in a control group of pigs that were given standard feed, as our pigs in the first two groups, did not agree with our findings (Table 3). This probably happened as a result of different races. Wood *et al*. [4] studied the effect of keeping and feeding on fat deposition in muscle and presence of some fatty acids in different muscles. They investigated the composition of *m. longissimus dorsi* of Berkshire and Tamworth, Large White and Duroc line. We can compare our results from first two groups with their findings relating to the control group Duroc line that received standard feed. Their findings for myristic C14: 0 (1.59), palmitic C16: 0 (23.85), stearic C18: 0 (15.56), oleic C18: 1 (36.17), and linoleic acid C18: 2 (12.02) were significantly different from our findings, which again indicates the influence of race on the fatty acid composition of individual muscles. Furman *et al.* [28] examined the commercial fat, meat-type pigs (hybrid Large White×Slovenian Landrace mated by Pietrain, Duroc or Piertain×Slovenian Landrace) and normal fatty acid composition of *m. longissimus dorsi*. Their findings of myristic C14: 0 (1.22), palmitic C16: 0 (22.55), palmitoleic acid C16: 1 (3.23), stearic C18: 0 (11.49), oleic acid C18: 1 (40.21) and linoleic acid C18: 2 (12.75) were also significantly different from our results concerning the first two groups of pigs (Duroc×Yorkshire and Duroc×Yorkshire×wild boar). Jacyno *et al.* (2006) studied fatty acid composition in *m. longissimus dorsi* of fleshy pigs. Their findings for myristic C14: 0 (1.29), palmitic C16: 0 (22.95), palmitoleic acid C16: 1 (4.63), stearic C18: 0 (11.50), oleic acid C18: 1 (44.27) and linoleic acid C18: 2 (10.26) were not in accordance with our results. The finding by the same authors for total cholesterol was 63.2 mg/100 g which was not in agreement with our findings (59.80±0.62 mg/100 g and 51.00±0.55 mg/100 g).

Marchiori *et al.* [29] instrumentally measured the colour of *m. longissimus dorsi* in pigs that were grown under controlled conditions. *L** values (59.00±2.72), *a** (7.65±1.43), *b** (16:38±0.79) were measured after 48 h from the time of slaughter. *L** values were higher than ours (Table 4), indicating that their meat was lighter on the surface in relation to our first two groups. Oliver *et al.* [3] studied the colour of *m. longissimus dorsi* from five different crossbreeds, which included Duroc (DU), Landrace (LR), Large White (LW) and Belgian Landrace (BL). The measured values for meat of Duroc were: *L** (54.06±0.60), *a** (7.55±0.32), *b** (6.48±0.27). *L** values were higher than ours (Table 4), indicating that their meat was lighter than ours in the first two groups. On the other hand, colour of meat, measured after seven days, from *m. longissimus lumbrorum* taken from the slaughtered pig breeds Large White Landrace [30] was darker (*L** 45.9, *a** 9.3, *b** 8.1) than meat from our first two groups (Table 3).

For wild boar, Postolache et *al*. [31] investigated the chemical composition of *m. longissimus dorsi* in shot wild pigs in Romania, aged 3–4 years. Their findings were 75.36% for water, 21.81% for protein, fat 2.58%, and the pH value measured after 24 h (post mortem) was 5.56. Results regarding water, proteins and fats were not in agreement with our results, while the pH value was in accordance with our findings. That difference can be explained by a different diet and different age. With respect to pH value in the wild boars meat, our results (5.48±0.02) were consistent with the results (5.46±0.14) from Marchiori *et al*. [27], but the pH value of our measurements was the lower from pH values (5.80±0.18) that were measured by Kasprzyk *et al*. [26].

Quaresma *et al.* [32] examined intramuscular lipids, cholesterol and fatty acid composition in major muscle of shot wild boars in Portugal. They found that the fat content was 4.75%, cholesterol 58.7 mg/100 g, fatty acid – myristic C14:0 (1.00), palmitic C16:0 (20.70), palmitoleic acid C16:1 (2.20) stearic C18:0 (10.50), oleic acid C18:1 (39.70) and linoleic C18:2 (15.90). Our results were consistent with the results of these authors.

Marchiori *et al.* [27] had also measured the colour of the wild boars *m. longisimus dorsi*. *L** value

(49.00±3.48), a^* (9.50±1.46), b^* (12.99±1.33) were measured after 48 h of the moment of slaughter. L^* value was higher than ours (Table 4), suggesting that their wild boars meat was lighter than ours.

It is difficult to compare the results of sensory analysis between different authors. It is also difficult to compare different techniques. But, our results can be compared with the results of Kasprzyk *et al.* [26]. These authors evaluated Pulawska meat, wild boar and Pulawska×(Hampshire×Wild boar). In meat of those wild boars authors received the lowest rating, while the meat of the cross-breed got a perfect score. Morrison *et al.* [33] investigated the effect of different cultivation methods on sensory qualities. Evaluation was carried out by panel test. The scores varied slightly, but did not differ ($P > 0.05$) in tenderness, juiciness, pork flavour or overall desirability of pork produced from the two housing treatments. The results of Morrison *et al.* [33] were similar to ours. Although our results have got slight differences in the sensory evaluation of appearance, they did not affect the acceptability of meat.

CONCLUSIONS

1. Based on the obtained results, it can be concluded that there was a statistically significant difference ($P < 0.05$) between all three groups in the average water content, total fat, average protein value and ash content. Regarding live weight and pH values there was no statistically significant difference ($P > 0.05$) between D×Y and D×Y×WB, while it was noted between D×Y and WB, as well as between D×Y×WB and WB ($P < 0.05$).

2. According to the obtained results regarding fatty acids profile and cholesterol content there was a statistically significant difference ($P < 0.05$) between all three groups.

3. By instrumental measurements of the colour characteristics of meat samples it can be concluded that for L^* there was a statistically significant difference ($P < 0.05$) between all three groups. But, regarding a^*, b^*, hue angle and chroma there was no statistically significant difference ($P > 0.05$) between D×Y and D×Y×WB, while however it was noted between D×Y and WB, as well as between D×Y×WB and WB ($P < 0.05$).

Based on the total number of points, *i.e.*, mean sensory quality score, the order would be as follows: D×Y (93.80/4.69), D×Y×WB (92.00/4.60) and WB (92.0/4.50).

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IZVOD

KVALITET MESA SVINJA RASE DUROK×JORKŠIR, DUROK×JORKŠIR×DIVLJI VEPAR I DIVLJI VEPAR

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Meso svinja zbog svog sastava, pre svega količine visoko vrednih proteina, i esencijlnih aminokiselina, masti i esencijalnih masnih kiselina, vitamina (svinjsko meso, na primer, sadrži visok nivo tiamina i on je 5–10 puta veći nego u mesu ostalih vrsta stoke za klanje) i minerala, predstavlja visokokvalitetnu i koncentrovanu hranu i zato ima važnu ulogu u ishrani ljudi. U zavisnosti od, rase, pola, starosti i stepena uhranjenosti, kao i položaja u telu, meso može da sadrži različite količine mišićnog, masnog i vezivnog tkiva, što neposredno uslovljava hemijski sastav ove namirnice. Cilj ovog rada je bio da se ispita hemijski sastav i pH vrednost, sastav masnih kiselina, sadržaj holesterola, boja (instrumentalno) i senzorna analiza svežeg mesa svinja za: Durok×Jorkšir, Durok×Jorkšir×divlji vepar i divlji vepar. Iz uzoraka *m. longissimus dorsi,* uzetih nakon klanja navedenih životinja, ispitivan je hemijski sastav primenom ISO metoda. Sastav masnih kiselina i sadržaj holesterola određivani su standardnom metodom primenom gasne hromatografije (GC6890N, Agilent Tech., USA) poređeni sa standardom masnih kiselina (standard mix of FAMEs 37, Supelco, USA). Boja svežeg mesa je takođe određivana u *m. longissimus dorsi* upotrebom Minolta chromameter CR-400. Senzornu analizu su radili obučeni ocenjivači u skladu sa ISO metodom. Dobijeni rezultati su statistički obrađeni primenom programa MS-Excel 2003, ANOVA i utvrđene razlike srednjih vrednosti poređene t-testom na nivou značajnosti 99 i 95%. Iz prikazanih rezultata vidi se da je postojala statistički značajna razlika u kvalitetu mesa između ispitivanih uzoraka.

Ključne reči: Kvalitet mesa • Durok • Jorkšir • Divlji vepar