Unters uchung der Beteiligung einiger Teilen von Schweinehälften, die für die Herstellung von Halbkonserven gemeint sind

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Die Untersuchung bezog sich auf drei Gewichtsgruppen (65-75, 76-100, und 101-110 kg warmer Hälften) von Fleischschweinen - Kreuzlinge zwischen dem grossen Yorkshire und den schwedischen und holländischen Landrass, die mittels Methode der zufälligen Wahl ausgewählt wurden. Der Fleischanteil darin wurde parallel mit Hilfe der jugoslawischen Standardmethode, als auch mittels der Dissektion bestimmt. Es sollte dadurch festgestellt werden wie hoch ist die Beteiligung der Muskelgewebe in den vorderen und hinteren Schinken, wobei die Zusammensetzung von unseren heimischen Schweinrassen und die Art der Fütterung berücksichtig worden war. All das hat man hauptsächlich vom Standpunkt der Herstellung von Halbkonserven betrachtet, als auch von den zweckmässigen Wahlmöglichkeiten unter den Schweinhälften an den Schlachtlinien.

Durch die statistische Databehandlug über die einzelnen Gewichtsgruppen wurde festgestellt das sich die Gewichtsmittelwerte der warmen Hälften zwischen 70,17 und 105,87 bewogen haben. Daraufhin wurde der Schinkenanteil nach der industriellen Zerlegung auf die Grundteile behandelt, als auch Muskelgewebeanteil im Schinken, zusammen mit dem Muskelgewebeanteil im Schinken im Verhältinis zur Hälfte. Dabei hatte man den Anteil der Vorderschinke in der Hälfte festgestellt, als auch Muskelgewebeanteil in dem Vorderschinken, zusammen mit dem Muskelgewebeanteil des Vorderschinken im Verhältnis zur Hälfte. Es sind auch die Angaben geäussert worden, die sich auf die untersuchten Hälften bezogen haben. Der Anteil des Muskeln- beziehungweise Fettgewebes wurde näher erklärt.

Examination of the participation of some parts of hog sides in the production of canned pasteurized products

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The examinations were performed with three weight groups (65-75, 76-100, and 101-110 kg of warm sides) of meaty hogs - crossbreeds produced by mixing Large Yorkshire and Swedish and Dutch Landrace breeds, being randomly selected. Participation of meat in these hog breeds was determined simultaneously by the Yugoslav standard method and by dissection. The purpose of these determinations was to establish, in the conditions of Yugoslav breed composition of hogs and feeding way, the participation of muscular tissue in legs and shoulders of hog sides. This was considered first of all from the aspect of the production of canned pasteurized products and then from the aspect of possible shoice of hog sides for that purpose on the slaughter line.

By statistical evaluation of data according to the weight groups, it was established that mean values of weights of warm sides ranged from 70.17 to 105.87 kg. The following evaluations were also performed: participation of leg in the hog side after industrial cutting into primal cuts; participation of muscular tissue in the leg; participation of leg muscular tissue in the hog side; participation of shoulder in the hog side; participation of muscular tissue in the shoulder; and participation of shoulder muscular tissue in the hog side. In addition, the data referring to all examined sides, explanation of the participation of muscular namely fatty tissue as well as which weight groups of hog sides are more or less suitable for the production of canned pasteurized products, were also presented.

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Etude de la part de certains morceaux de demi-carcasses de porc destinées a la fabrication de conserves a durée limitée

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Les examens ont été effectués sur trois groupes de poids différent (65-75, 76-100 et 101-110 kg de demi-carcasses encore chaudes) de porcs charnus, croisement de races de grand Yorkshire et de landras suédois et hollandais, sans choix particulier. La part de la viande de ces porcs a été déterminée par la méthode parallele du standard yougoslave et de la dissection. Notre but a été, par ces croisements spécifiques de races et le mode d'alimentation choisi, de constater la part du tissu musculaire dans le jambon et dans la palette des demi-carcasses de porc.

Par un examen statistique des données d'apres les groupes de poids on a constaté que les valeurs moyennes de poids des demi-carcasses encore chaudes évoluent entre 70,17 et 105,87 kg ensuite on a étudié la part du jambon dans les demi-carcasses sur la base de la maniere industrielle du découpage a prtir de morceaux, c'est-a-dire la place du tissu musculaire par rapport aux demi-carcasses. On a également constaté pour la palette sa place dans la demicarcasse. On a également mentionné des données qui se rapportent a toutes les demi-carcasses examinées, puis on a exposé la part du tissu musculaire, c'esta-dire graisseux de meme que de savoir quels sont les groupes de poids des demi-carcasses de porc les plus rentables pour la fabrication de conserves a durée limitée.

Исследование участия некоторых частей полутуш свиней назначенных для производства полуконсерв

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Исследлвания проведены на трех весовых групп (65-75, 76-I00 и I0I-II0 кг парных полутуш) мясистой свини полученной скрещением большого йоркшира со шведским и голандским ландрасом и отобранных методой случайного отбора. Участие мяса в них паралельно определялось методой югославского стандарта и диссекцией. Это сделано с целью что бы, в условиях состава наших пород свиней и способа корма, установить какое участие мышечной ткани заднем и переднем окорке полутуш свиней. Это рассматрывано превасходно с точки зрения производства полуконсерв, а также с точки зрения возможностей выбора полутуш свиней для этой цели на линиях убоя.

Посредством статистической обработки по весовым группам установлено что средние ценности веса парных полутуш двигались в пределах 70,I7 и I05,87 кг. Потом разработано участие заднего окорка в полутуши после промышленного способа разрубки на основные части и участие мышечной ткани в заднем окорке, а также участие мышечной ткани заднего окорка в отношении к полутушам. Также установлено участне переднего окорка в полутуши,участие мышечной ткани в переднем окорке и участие мышечной ткани переднег окорка в отношении к полутуши. Вынесены данния, относящиеся к всем исследованным полутушам, потом образложено участие мышечной или жирной ткани, а также вопрос о том какие весовые группы полутуш свиней лучше или хуже понадобятся для производства полуконсерв.

Examination of Weight Values of Some Parts of Pork Sides Intended for the Production of Canned Pasteurized Products

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Introduction

Regardless of the perfection of technological processes, technologically well equipped plants and highly trained personnel, the quality of raw material has a great economic importance in meat industry.

The conception of pork carcass quality is very complex and it can be considered from many aspects. This work was orientated only to the examination of those quality properties of pork carcasses which are evaluated on the slaughter line.

The evaluation of qualty of pork carcasses and their classification are very important for the orientation of hog breeding and industrial meat processing, and they have been the subject of numerous examination.

The majority of countries has its own methods for the evaluation of meat quantity in carcasses, namely sides, and its own procedures for classification of pork sides, prescribed according to specific conditions of its production and trade.

Yugoslav standard for meaty hogs intended for industrial processing (JUS E Cl 021/69) prescribes the procedure for classification and evaluation of all breeds of meaty hogs and crossbreds thereof, including both sexes aged up to 10 months and being of 65-110 kg in dressed weight (the weight of both sides of a hog with head, feets, teil, leaf fat and kidneys, measured not later than two hours after slaughter).

The quantity of meat in pork carcasses is evaluated on the slaughter line by using objective criteria: measurement of the weight of sides and linear measurement of back fat thickness on two places.

Using the method of side quality evaluation and appliying dissection, with the aim to establish - from the aspect of meat industry - the weight groups of hogs, namely pork sides being most favourable for industrial production of canned pasteurized products, the following was examined:

1. Weight values of leg and shoulder and the percentage of their participation in the side weight;
2. Quantities of leg meat and shoulder meat and the percentage of their participation in the side weight; and
3. Quantities of meat in the leg and in the shoulder and the percentage of their participation in these parts.

Materials and Methods

A total of 174 carcasses derived from domestic meaty hogs (crossbreds: Large Yorkshire, Swedish and Dutch Landrace), selected by random method, was examined.

The examinations included three weight groups of pork carcasses:

41 pork carcasses weighing 70.17 kg on average
105 pork carcasses weighing 87.14 kg on average

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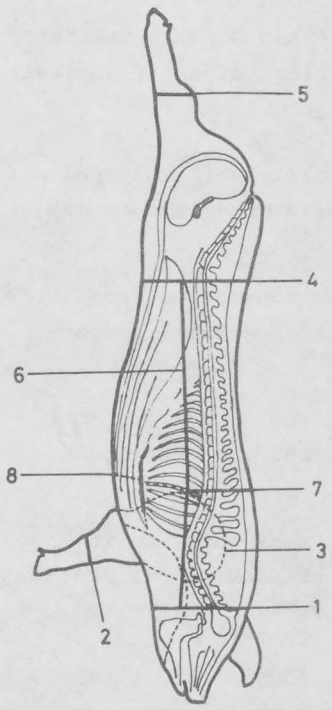
28 pork carcasses weighing 105.87 kg on average.



Scheme I
Industrial cutting of pork sides

According to the Yugoslav standard, the carcasses were classified into three groups:

- Group I which includes light meaty hogs weighing 65-75 kg;
- Group II which includes meat hogs weighing 76-100 kg;
- Group III which includes heavy meaty hogs weighing 101-110 kg.

Previously evaluated on the slaughter line by the Yugoslav standard method and classified into weight groups, chilled sides were cut in industrial way (Scheme I):

Fore legs were separated by making an incission between the ossa antebrachii and the first row of carpal bones (Scheme I, incision 2).

Shoulders were separated from the pork side by making a circular incision and by cutting the muscles of synsarcous connection (Scheme I, incision 3).

Legs were separated from the pork side by making an incision between the 5th and the 6th lumbar vertebrae (Scheme I, incision 4).

Hind legs were separated at the tarsal joint, by making an incision between the ossa cruris and the first row of tarsal bones (Scheme I, incision 5).

Legs and shoulders obtained by industrial cutting were prepared for canning (cut, faced, boned and trimmed) in the way adapted in the production of canned pasteurized products. On that occasion,meat for canning, meat trimmings, fatty tissue, skin, connective tissue and bones, including shank in the case of leg, were obtained.

The examinations of weight values of legs and shoulders as well as meat quantities used in the production of canned pasteurized products were conducted separately for each carcass, namely side.

Results and discussion

Percentage of legs and shoulders in side weight, percentage of meat from these parts in side weight and percentage of meat in the weight of legs and shoulders as well as their mutual relations, were evaluated statistically and presented in tables 1, 2 and 3.

By analysing the data for all three weight groups, the following was established:

- participation of legs in sides decreases with the increase of side weight ($r=-0,75^{**}$),
- participation of leg meat in sides decreases with the increase of side weight ($r=-0,76^{**}$),
- participation of meat in legs decreases with the increase of leg weight ($r=-0.65^{**}$),
- participation of shoulders in sides increases with the increase of side weight ($r=0.53^{**}$),
- participation of shoulder meat in sides increases with the increase of side weight ($r=0.46^{**}$),
- participation of meat in shoulders increases with the increase of shoulder weight ($r=0.18^{**}$).

By analysing the data within each weight group, different regularities can be observed:

- participation of leg in relation to side weight in weight group I ($r=0.75^{**}$) increases and in weight groups II and III ($r=-0.68^{**}$ and -0.70^{**}) decreases with the increase of side weight,
- participation of leg meat in relation to side weight in weight group I ($r=0.67^{**}$) incre-

Percentage of the participation of examined parts

Table 1.

Participation, %	Weight Groups	$\bar{X}$	$m_{\bar{X}}$	V%
Leg in side weight	I	28.63	0.11	2.58
	II	27.61	0.06	2.25
	III	26.61	0.06	1.16
	Total	27.69	0.06	3.18
Leg meat in side weight	I	11.57	0.03	1.73
	II	11.00	0.03	2.72
	III	10.13	0.02	1.28
	Total	10.99	0.04	4.64
Meat in leg weight	I	40.51	0.13	2.07
	II	39.83	0.08	1.13
	III	38.06	0.07	1.05
	Total	39.70	0.07	2.39
Shoulder in side weight	I	13.64	0.03	1.61
	II	15.29	0.09	6.34
	III	16.67	0.03	0.90
	Total	15.03	0.09	8.11
Shoulder meat in side weight	I	5.22	0.02	2.68
	II	6.00	0.04	8.03
	III	6.34	0.02	1.58
	Total	5.87	0.04	8.68
Meat in shoulder weight	I	38.23	0.18	2.93
	II	39.60	0.06	1.56
	III	38.05	0.09	1.29
	Total	39.03	0.07	2.46

$\bar{X}$ - mean value

$m_{\bar{X}}$ - error of mean value

V% - variance coefficient

Correlation coefficients (r)

Table 2

Correlation	Weight Group I n=1+1	Weight Group II n=105	Weight Group III n=28	Total n=174
Side weight: % of leg in side	0.75**	-0.68**	-0.70**	-0.75**
Side weight: % of leg meat in side	0.69**	-0.77**	-0.73**	-0.76**
Leg weight: % of leg meat in leg	-0.52**	-0.56**	-0.44**	-0.65**
Side weight: % of shoulder in side	0.12	0.52**	-0.79**	0.53**
Side weight: % of shoulder meat in side	0.71**	0.80**	-0.38**	0.48**
Shoulder weight: % of shoulder meat in shoulder	0.39**	0.22**	0.05	0.18**

*P $<$ 0.05 **P $>$ 0.01

Regression coefficients (b)

Table 3

Participation, %	Weight Group I n=41	Weight Group II n=105	Weight Group III n=28	Total n=174
Leg in side weight	0.155	-0.057	-0.106	-0.052
Leg meat in side weight	0.038	-0.031	-0.046	-0.030
Meat in leg weight	-0.301	-0.146	-0.451	-0.194
Shoulder in side weight	0.007	0.068	-0.089	0.051
Shoulder meat in side weight	0.027	0.049	-0.018	0.019
Meat in shoulder weight	0.080	0.073	0.102	0.063

ases and in weight groups II and III (r=-0.77** and -0.73**) decreases with the increase of side weight,

- participation of leg meat in relation to leg weight decreases within each weight group (r=-0.52**, -0.56** and -0.44**),
- participation of shoulder in relation to side weight in weight groups I and II (r=0.12 and 0.52**) increases and in weight group III (r=-0.79**) decreases with the increase of side weight,
- participation of shoulder meat in relation to side weight in weight groups I and II (r=0.71** and 0.80**) increases and in weight group III (r=-0,38**) decreases with the increase of side weight,
- participation of shoulder meat in relation to shoulder weight increases in weight groups I and II (r=0.39** and 0.22**), whereas in weight group III there was not established any significant correlation (r=0.05).

Conclusion

1. From the standpoint of meat industry, namely canned ham production, sides belonging to weight group I are desirable due to the high percentage of participation of legs and leg meat in them. Positive correlation was established in this group between the side weight and the percentage of participation of legs and leg meat.

   In addition to sides from group I, sides belonging to weight group II are specially desirable for the production of canned shoulder because of their high percentage of participation of shoulders and shoulder meat in them. Positive correlation was established in these groups between the side weight and the percentage of participation of shoulders and shoulder meat.
   Positive correlation was also established between the shoulder weight and the percentage of participation of its meat.

2. According to the presented results, sides belonging to weight group III are not desirable for the production of canned pasteurized products due to the negative correlation among the examined parameters.

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