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EVALUATION OF TRADITIONAL AND REGIONAL MEAT PRODUCTS MADE IN POLAND

Summary. Production, protection and promotion of traditional food play greater and greater role in European Union states. At present, production of food with the use of traditional and regional technologies is perceived as a chance for small and medium-size food businesses. It makes communities of small towns and villages become active, contributing to the decrease of unemployment and giving regions a chance for development. The award of "regional indication" increases product competitiveness and can also become an important element of having an impact on a prospective client. Regional and traditional products are well-perceived and desired by consumers, which tempts some dishonest producers to forge their brand names and make use of them. Such activities mislead consumers as to the genuine origin of a product and thereby make traditional product manufacturers incur economic losses. In order to prevent such practices, the European Union has adopted a system of protection of regional and traditional products. A number of regulations have been issued in order to protect the foodstuffs. Also Poland maintains an inventory of food products of a definite origin or manufactured with traditional methods. Special laws and ordinances underlie their legal basis. Consumers are manifesting an increasing interest in that sort of food and they are usually a demanding type of consumers, ready to pay a higher price for such products but at the same time expecting to receive products of good quality and, first of all, safe, in return. Owing to customers' interest, the number of business people willing to enter traditional food manufacturing is growing. But it is frequently the case that those who take up that type of food processing business are not prepared to that work. First of all, they lack elementary knowledge with respect to food product properties, their transformation during storage and, which is the most important, food-borne hazards. The lack of knowledge renders it impossible for them to maintain a reasonable approach to the establishment and running of food processing businesses so as to prevent the risk of food poisoning from taking place. At the same time, government competent food supervision authorities do not always play their role adequately. There are more than 732 products registered as traditional and regional in Poland among them 141 in meat category. In the year 2007, within the framework of a project funded by AGROSMAK, the Polish Association of Food Technologists conducted a questionnaire survey among producers of traditional and regional food products. The survey had a nation-wide character and was conducted by a telephone

interview method among 40 producers. About 67% of plants have implemented the HACCP system, 80% have developed a plant Good Manufacturing Practice code. Other aspects of food safety issues were also discussed in the article. It should be mentioned that raw materials used "yesterday and today" for production of traditional and regional food are incomparable; e.g. 40 – 50 years ago, pork was characterized by different properties as compared with today's meat raw material. All breeding conditions have substantially changed. In this connection, production, and mainly requirements with regard to health safety assurance, should also change in comparison with production from the previous period since the raw material has changed. Technological and product parameters and their positive/negative impact for regional and traditional product quality were also discussed in the article.

Key words: traditional products, regional products, quality, safety

Introduction

In the times of industrial production and food processing, regional and traditional products constitute a specific alternative and they counterweigh the products made by means of industrial methods, both on the world and local markets. Production using traditional methods most frequently concerns the regions with the predominance of non-industrial, extensive agriculture, which refers to poor regions occupying a special place in the European regional policy. Traditional products, due to the labour-consuming production, generate new workplaces, they are a significant element of promotion for the places where they are produced, they constitute the tourist attractiveness of the regions, and – most importantly – they make it possible to increase the profitability of agricultural production, which is followed by a better standard of living for the inhabitants of the country and rural areas.

Polish agriculture is still traditional to a considerable extent. Meat, cheese, fruit, vegetables, fish are traditionally processed into traditional regional products according to years-old traditions, and next they are promoted in shops and restaurants, being enormously attractive, which is why they can ensure high profitability to the producers.

European policy in the sphere of food quality focuses on the promotion and protection of their original products, which have strictly defined geographical origin or specific quality resulting from the traditional way of production. Hence, regional and traditional products are treated within the European Union as exceptional good and unique cultural heritage of the whole continent. One of the ways to realize the policy of European Union standards of quality is to implement the system of protecting geographical indications and names of origin. Implementation of the system will contribute to the promotion of local food products which are characterized by traditional production methods, at the same time ensuring their high and unchanged quality, which should increase the interest in traditional food. Protection of regional and traditional products from dishonest appropriation of the name or forgery is at the same time expected to help increase the supply of this kind of agricultural and food products and to better inform the customers on the values of the purchased products.

Protection and promotion of traditional and regional food in EU and in Poland

The production, protection and promotion of traditional food play an ever-increasing role in the countries of the European Union. The production using traditional and regional technologies is now perceived as a chance for small and medium-sized food companies. It gives rise to activation in the environment of small towns or villages, contributing to lower unemployment and giving a chance for the development of the regions. Awarding "regional indications" increases the competitiveness of products and can also have an important effect on the potential customer. The products whose origin is guaranteed by the European Union help create the image of the area from which it comes and hence encourages people to visit a given region (making a contribution to the development of tourism). The consumer who has access to a higher quality product simultaneously gets acquainted with its product, as well as the natural and cultural environment where the product was made.

These products are well perceived and desired by the consumers, which is taken advantage of by dishonest producers who want to forge them and use their names unfairly. Such activities mislead the consumer as to the true origin of the product, which results in economic losses of the producers of traditional goods. With the aim of counteracting such practices, the European Union introduced a system of protecting regional and traditional products. The system of registering and protecting these products is regulated by the basic regulations: the Council Regulation (EC) No 509/2006 (THE COUNCIL... 2006 a), the Council Regulation (EC) No 510/2006 (THE COUNCIL... 2006 b) and the Council Regulation (EC) No 1898/2006 (THE COUNCIL... 2006 c).

On the one hand, having an indication is supposed to testify to the authenticity of a given product and, on the other, be a warranty of quality. Owing to this, a potential buyer has more data which allow him to make a choice while shopping. The price ceases to be the only or the most important argument to support a given product. Owing to the relation between the product and the region, the purchase becomes the beginning of contact with exceptional culture, tradition, history, community and nature of a given area.

Names of products can be registered as:

Protected Designation of Origin – when the name directly or indirectly refers to the region, a specific place or – in exceptional cases – to the country where a given product is made; the whole technological process takes place in the area to which the product's name refers and the characteristic features and the quality of the product are distinctly connected to the specific character of the geographical area where it is produced.

Protected Geographical Indication – when the product's name refers to the region, a specific place or – in exceptional cases - to the country where a given product is made. The product must enjoy popularity, it must have specific features or quality resulting from or assigned to the geographical origin. The product's quality can result from the geographical area (e.g. climate, vegetation, lay of the land), local know-how of the producers or other natural or human factors.

Traditional Speciality Guaranteed – the product can be registered as traditional speciality guaranteed when its name is specific in itself or expresses a specific character

of the agricultural product or foodstuff and the very product is specific, which means that it possesses a feature or a set of features distinguishing it from other products of the same category and it has a traditional character that can be reflected in the use of traditional raw materials, traditional composition or a traditional method of production.

The right to use of geographical designation and a registered name is given only to those producers who come from the registered area, who make the product according to the specification and from the raw materials that were reported while registering the raw materials. Therefore, granting the designation serves the protection of producers from the unauthorized use of the product's name, while on the other hand it allows the consumers to recognize the unique product.

In Poland, the entity responsible for keeping the system of registering products of definite geographical origin and a specific, traditional quality is the Ministry of Agriculture and Rural Development. According to the act on registration and protection of names of agricultural products and foodstuffs (THE ACT... 2005) and on traditional products together with executive acts amended to this act, the Ministry of Agriculture and Rural Development is responsible for accepting, evaluating and forwarding applications for registration and applications to change the product's specification to the European Commission.

The registration consists of two stages and includes the proceedings before the proper organ of the Member State and the proceedings before the European Commission. The name of origin, geographical indication or traditional speciality guaranteed acquire protection at the moment when the European Commission issues a decision on the entry in the register. Such protection is without any time limit. The act on registration and protection of names of agricultural products and foodstuffs and on traditional products regulates the following issues:

1) principles and course of assessing the motions for the registration of designation of origin, geographical designations and certificates on the specific character;
2) conditions of temporary protection of the names of agricultural products and foodstuffs on the national ground before the registration in EU;
3) principles and course of controlling agricultural products and foodstuffs possessing the protected name of origin, protected geographical indication or a certificate of specific character;
4) conditions of keeping an inventory of traditional products;
5) penalties for forgery of products the names of which are protected.

In Poland, the so-called Inventory of Traditional Products, which is an informative and promotional tool, is kept by the Minister of Agriculture and Rural Development, as well as the head of voivodship and it includes the products with 25 years of documented history. The legal basis of this list is the aforementioned Act (THE ACT... 2005) together with executive acts (THE REGULATION... 2005 a, b, 2006).

According to the regulation of the Minister of Agriculture and Rural Development *on the model of a motion for an entry in the inventory of traditional products*, the products that can be entered in the Inventory of Traditional Products were divided into ten categories. The second category includes fresh meat and meat products. According to the state from 15 May 2010, 141 products are found in this group, for example:

– pulawska breed pigs, Lublin district, registered on 29 May 2009,

- podhalańska lamb, Małopolska district, registered on 26 June 2008,
- nadwieprzańska loin, Lublin district, registered on 18 February 2008,
- sausage – wòrszta from the Kaszuby region, registered on 31 March 2010,
- meat pie in a jar, traditional, from Górna, Podkarpackie district, registered on 23 March 2010,
- lisiecka sausage, Małopolska district, registered on 28 September 2005,
- metka meat spread, Pomeranian district, registered on 15 June 2009,
- krotoszyńska smoked meat, wielkopolskie district, registered on 27 April 2007.

The quality of traditional and regional meat products

Traditional and regional products, which use the technologies of home-made food, provide products with specific quality characteristics. These characteristics are not always of positive character, which especially concerns the health safety of products. Table 1 specifies technological characteristics and quality features of traditional and regional meat products and their character.

Table 1. Technological characteristics and quality features of traditional and regional meat products
Tabela 1. Wyróżniki technologiczne i cechy jakościowe tradycyjnych i regionalnych produktów mięsnych

Technological characteristics and quality features	Positive effects	Negative effects
Nitrate curing	Aroma and flavour values	Lack of control of the amount of nitrites, a possibility of overdosage or insufficient curing
Traditional smoking	Aroma and flavour values	Presence of harmful chemical compounds
Increased NaCl addition	Increased storage durability	Lower dietetic value, "masking" the spoilage processes
Low efficiency (especially concerning smoked products)	Increased storage durability, Aroma and flavour values	Lower economic efficiency
Use of unconventional additives (e.g. fruits, vegetables, herbs, etc.)	Aroma and flavour values	A possibility of introducing new hazards (non-meat), decreased storage durability
Production in small enterprises with a low degree of production mechanization, big share of manual labour	A possibility of working on each product individually, a possibility of using unconventional technologies	Low hygiene level, low qualifications of the staff, difficulties in obtaining repeated quality of products

High demands in the field of health safety are set for food production nowadays. Producers of traditional and regional products should use good hygienic and production practices, as well as HACCP system with great flexibility. These problems are perceived by the producers of traditional food in various ways. It should be mentioned that espe-

cially lack of observing the Good Manufacturing Practice, which is careful dosing of additives, e.g. nitrates, nitrites or salt, can lead to overdosage, in this way causing a health risk. The process of smoking, if not controlled, can lead to considerable contamination of the surface of products with different substances, above all with polycyclic aromatic hydrocarbons (PAHs), e.g. benzopyrenes.

It is also dangerous to affect (e.g. through adding a big amount of NaCl, spices, intense smoking) the aroma and flavour that "mask" the signs of microorganisms. An addition of unconventional elements, e.g. fresh or dried fruit and vegetables, herb spices, besides their unquestionable flavour values, introduces other microbiological and chemical hazards apart from the meat.

Production in small enterprises with a low degree of production mechanization, followed by a big role of manual labour, requires careful training of the staff, rigorous hygiene, systematic medical examinations, including those for infectious diseases, supervision from the managers. Unfortunately, owners of small enterprises with traditional production do not always show understanding for the issue of ensuring the safety of products. This is reflected for example in the research conducted at the end of 2007 by the Polish Society of Food Technologists' within the project financed by AGROSMAK. Those were surveys among the producers of traditional and regional products (DIAGNOZA... 2007). It was research on the national scale and it was conducted using the method of a telephone interview among 40 producers. It was found out that not all the enterprises producing traditional and regional products, despite their declaration of being acquainted with the binding food law concerning food hygiene (69% of the respondents fulfilled those requirements).

Documentation of Good Practice – GMP and GHP – was kept in 80% of the enterprises belonging to the meat sector; however, HACCP system was declared as implemented and used by 67% of enterprises, while 11% of enterprises were at the stage of implementing it and 22% declared that they did not implement the principles of HACCP (Fig. 1). This situation could be changed within about a year after the research but it nevertheless points to the existing problem.

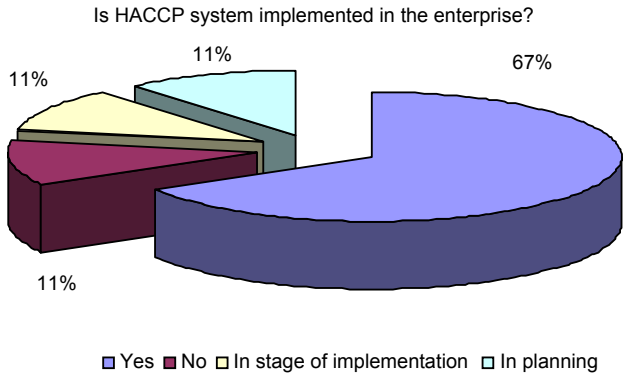

Fig. 1. The state of implementation and application of HACCP system in meat enterprises as declared in surveys
Rys. 1. Deklarowany w ankietach stan wdrożenia i stosowania zasad HACCP w zakładach mięsnych

Unfortunately, as seen in the results of studies, as many as 48% of enterprises did not have any trainings on Good Practices, which is not a good prognosis for the future as for the improvement of the employees' knowledge and awareness.

Concern is also raised by the issue of obtaining, assessing and documenting the raw materials. In the production of traditional and local goods, the raw materials come from their own production in 53% of enterprises. In 69%, the enterprises that use purchased raw materials always order them with the same supplier who in the majority of cases (62%) is a qualified supplier (possessing certification). This points to the fact that as much as 40% of raw materials can pose a health threat. Conditions of storing the raw materials and products are not monitored in as many as 33% of cases and in as many as in 50% of enterprises, clean paths cross with dirty ones.

It should also be said that the raw materials used for the production of traditional and regional foodstuffs in the past and now are incomparable; for example, 40-50 years ago pork meat was characterized by different properties in comparison to the state at present. All breeding conditions have changed in a significant manner. Hence, production and especially the requirements concerning health safety should also undergo a change as compared to the production from the previous period, which is due to the changed raw materials.

Traditional and regional meat products made from organic materials

In Polish conditions, the production using traditional methods is realized with organic materials. In Poland, a relatively small part of the society declare the consumption of organic food, with the origin of this food being differentiated. Organic products are bought in food shops, directly from the farmers or they come from one's own cultivation. The most frequently consumed products from organic cultivations include fruit, vegetables, grain products, cow's or goat's milk and its products. The consumption of organic meat products is very low. It can be caused by relatively small supply of meat products, their high price as well as the quality which is either low or similar to that of conventional products.

Contamination with harmful elements that occur in meat includes above all the substances that penetrate from the environment, residue of compounds from fodders and preparations used in medicine, substances migrating from the machinery, equipment, packaging or dishes. Environmental pollution with metals, the use of fodder additives containing micro- and macroelements, as well as the possibility of absorbing metal salts by animals as a result of wrong breeding practice are the factors potentially altering the natural physiological level of metals in animal tissues.

Fodder is the main source of lead and cadmium for animals. The greatest amount of these elements is found in animal liver and kidneys. Because in the case of a lot of trace elements the dose that is useful for the organisms is close to the toxic dose, accurate determination of their content in different materials and food products, as well as determination of their daily intake is a problem of grave importance.

The substances that show a toxic effect and whose presence in food raises a special interest of the researchers are the residues of pesticides. Contamination of food of animal origin with pesticides can occur indirectly, through contaminated fodder. Pesticides

can be transported by the wind, from the places of their application to the neighbouring cultivations and areas where they are undesirable. In their original form or in the form of degradation products, they can penetrate into the soil, water and air, in this way posing a threat to people and animals. Direct contamination can take place as a consequence of parasites control, disinsection procedures, rodent control.

A characteristic feature that distinguishes chlorinated carbohydrates from other pesticides is the possibility of their accumulation in animal and human tissues, even when small doses are provided. Complete liquidation of chloroorganic pesticides residue in the environment will take many years. The basic source of chloroorganic pesticides in our food are products of animal origin such as meat and fish. The studies conducted so far point out that organic plant raw materials contain fewer nitrates and pesticide residue, while having more dry weight, vitamin C, B group vitamins, phenolic compounds, total sugars and necessary aminoacids, also containing more mineral elements. Animals fed on organic fodder show better parameters of resistance and fertility.

The analysis of studies presented in the literature on the subject so far justifies the conclusion that the meat of animals from organic breeding is characterized by the following positive quality parameters: greater mass of breast and thigh muscles, lower content of total fat in carcasses, higher content of intramuscular fat, greater marbling, different composition of fatty acids, even nine times smaller relation between fatty acids n-6/n-3 as compared to conventional meat, and higher sensory quality. The undesirable features are smaller total weight of carcasses and higher TBARS value, which means faster processes of fat oxidation. A drawback of this kind of meat is also a shorter period of freshness, meaning worse storage quality. From the breeders' point of view, these are certainly not the features to be desired.

Another problem is maintaining the proper conditions of animal breeding which make it possible to obtain products with acceptable quality features. Unfortunately, a lot of producers of so-called organic products as well as traditional and regional foodstuffs do not observe the requirements and they do not document the basic parameters of the production process commonly called the preliminary conditions of food production.

Researchers of the Department of Meat Technology and Quality Management of the University of Life Sciences in Lublin and the Department of Catering Technology and Food Hygiene of Warsaw University of Life Sciences – SGGW conducted studies in 2009 the aim of which was to assess the quality of traditional and regional cold meats produced from organic raw materials found on the market. Meat products from two establishments: Meat Company "Jasiołka" (Dukla) and Meat Company "Wasąg" (Biłgoraj) (DOLATOWSKI et AL. 2009) were examined. Several products found on the market were submitted to the chemical (content of water and sodium chloride, water activity, pH, fat content and TBARS index, colour parameters), sensory, physical and microbiological evaluation.

Results of studies conducted immediately after the production pointed out that processed meats were characterized by fairly high sensory quality. The overall sensory quality was affected by the markers which were the effect of production treatments and the raw materials used, i.e. odour intensity, flavour of blanched sausage, smoked sausage, spices, and juiciness in the case of sausages and smoked, cured meat, and juiciness in the case of sirloin and ham. On the other hand, the overall quality of the examined meats assessed directly after production was affected by negative marks for flavour intensity and sour odour, acid odour and the content of "visible" fat (Figs. 2, 3).

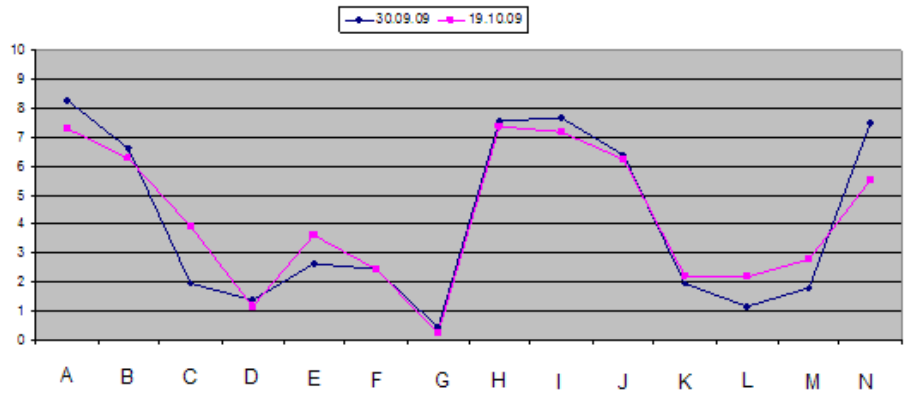

Fig. 2. Sensory profile evaluation (QDA – Quality Descriptive Analysis method) of traditional sirloin after production and storage; A – odour of smoked meat, B – odour of cured meat, C – acid odour, D – fatty odour, E – other odour, F – tone of colour of the meat tissue, G – visible fat, H – juiciness, I – flavour of smoked meat, J – flavour of cured meat, K – salty taste, L – acid flavour, M – other flavour, N – overall quality

Rys. 2. Ocena sensoryczna profilowa (QDA – metoda analizy opisu jakości) polędwicy tradycyjnej po produkcji i po przechowywaniu; A – zapach wędzonego mięsa, B – zapach peklowanego mięsa, C – zapach kwasowy, D – zapach tłuszczowy, E – inny zapach, F – ton barwy tkanki mięśniowej, G – tłuszcz widoczny, H – soczystość, I – smak wędzonego mięsa, J – smak peklowanego mięsa, K – smak słony, L – smak kwasowy, M – inny smak, N – jakość ogólna

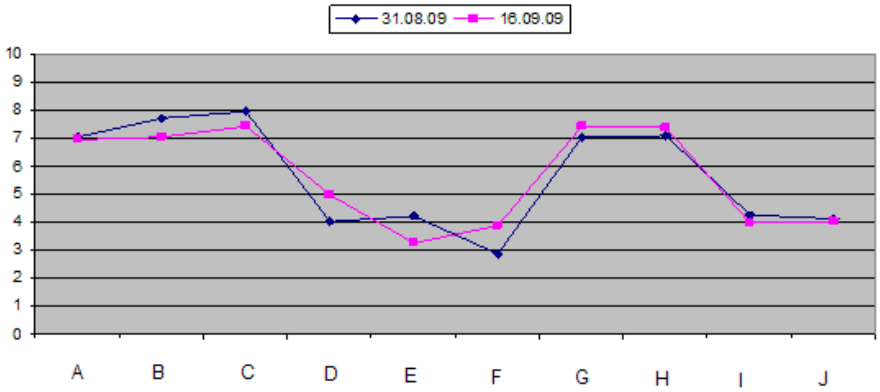

Fig. 3. Sensory profile evaluation (QDA method) of "chłopska" sausage after production and storage; A – odour of blanched sausage, B – odour of smoking, C – odour of spices, D – acid odour, E – fatty odour, F – other odour, G – chopped meat tissue, H – compactness (stuffing), I – visible fat, J – juiciness

Rys. 3. Ocena sensoryczna profilowa (metoda QDA) kiełbasy chłopskiej po produkcji i po przechowywaniu; A – zapach parzonej kiełbasy, B – zapach wędzonkowy, C – zapach przyprawowy, D – zapach kwasowy, E – zapach tłuszczowy, F – inny zapach, G – rozdrobnienie tkanki mięśniowej, H – zwięzłość wsadu, I – tłuszcz widoczny, J – soczystość

The quality evaluation of meat products was made in reference to the producer's declaration on the product's label. It was found out on the basis of the studies conducted that the producer's declarations pertaining to the water content were fulfilled. That parameter fluctuated with the time of storage. A direct cause of the increased water content in the initial period of storage can be humidity absorption from the environment, whereas its loss can point to the progressing storage changes in processed meats, as well as to the lack of proper cover of products during the storage. Moreover, water activity changed during the storage of products.

In some products, the studies showed exceeded content of sodium chloride in reference to the declaration provided by the producer. In addition, considerable differences in the level of salt content were observed in all examined products from particular series (Fig. 4). Remarkable differences were also found in the fat content of products from particular studied series and in certain instances the fat content was exceeded even by about 15% in comparison to the level declared by the producer (Fig. 5).

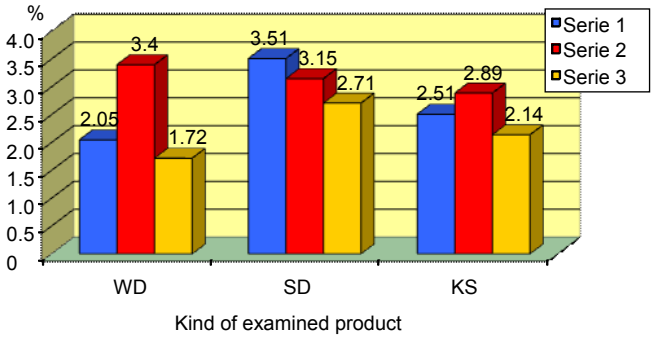

Fig. 4. Content of sodium chloride in the examined products
Rys. 4. Zawartość chlorku sodu w badanych produktach

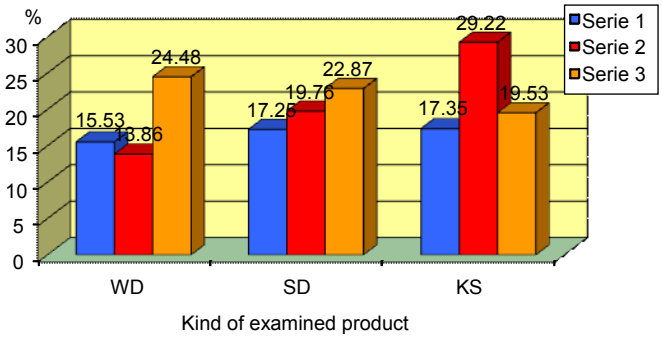

Fig. 5. Content of fat in the examined products
Rys. 5. Zawartość tłuszczu w badanych produktach

Table 2. Microbiological analysis of "pradziad" sausage during the storage, within the use-by period declared by the producer
Tabela 2. Analiza mikrobiologiczna kiełbasy pradziada w czasie przechowywania w okresie deklarowanego przez producenta terminu przydatności do spożycia

Day of storage	OLD	EC	EB	STA
	log cfu/g			
0	3.55	< 10	< 10	< 10
8	5.58	< 10	< 10	< 10
22	7.27	< 10	< 10	< 10
36	7.60	< 10	1.82	< 10

OLD – total number of microorganisms, EC – number of *Escherichia coli*, EB – number of bacteria from genus *Enterobacteriacea*e, STA – number of *Staphylococcus aureus.*

Results of storage studies showed that a few products did not meet the basic microbiological limits (Table 2). At the end of the use-by date suggested by the producer, those 3 f products were unacceptable sensorically due to the distinct acid smell, which made their evaluation impossible (Fig. 6).

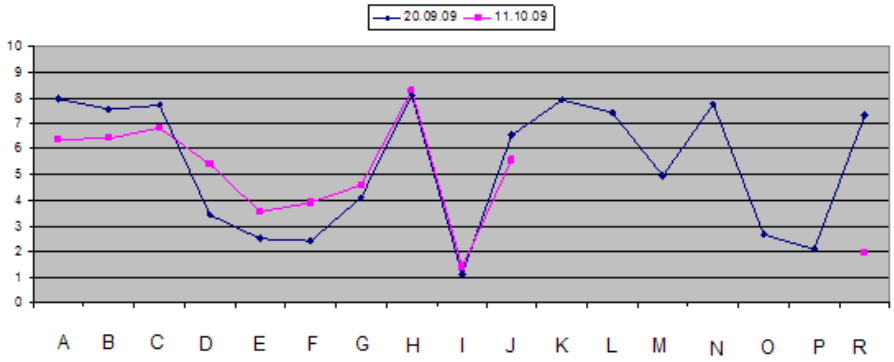

Fig. 6. Sensory profile evaluation (QDA method) of "krakowska" sausage after production and storage; A – odour of blanched sausage, B – odour of smoking, C – odour of spices, D – acid odour, E – fatty odour, F – other odour, G – chopped meat tissue, H – compactness (stuffing), I – visible fat, J – juiciness, K – flavour of blanched sausage, L – flavour of smoking, M – salty taste, N – flavour of spices, O – acid flavour, P – other flavour, R – overall quality
Rys. 6. Ocena sensoryczna profilowa (metoda QDA) kiełbasy krakowskiej po produkcji i po przechowywaniu; A – zapach parzonej kiełbasy, B – zapach wędzonkowy, C – zapach przyprawowy, D – zapach kwasowy, E – zapach tłuszczowy, F – inny zapach, G – rozdrobnienie tkanki mięśniowej, H – zwięzłość wsadu, I – tłuszcz widoczny, J – soczystość, K – smak parzonej kiełbasy, L – smak wędzonkowy, M – smak słony, N – smak przyprawowy, O – smak kwasowy, P – inny smak, R – jakość ogólna

Results of microbiological and sensory analyses were confirmed by physico-chemical evaluation – pH increase testifying to the growth of lactic acid bacteria, increased TBARS index (Fig. 7) and high value of water activity. These unfavourable changes of cold meats quality are a result of hygienic negligence during the production process.

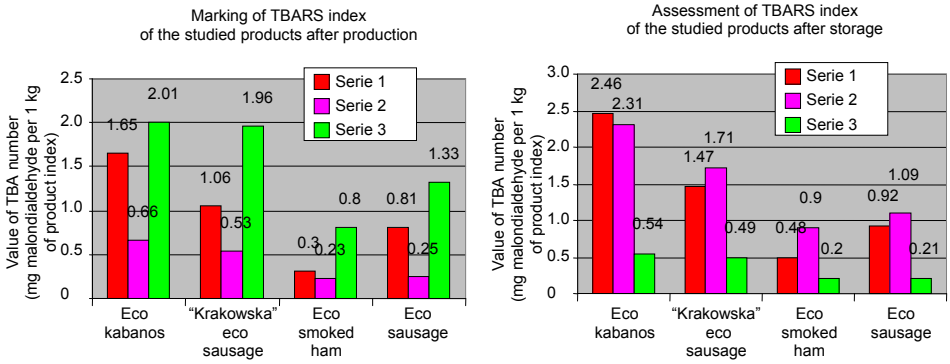

Fig. 7. Changes of TBARS index of the studied products during the storage
Rys. 7. Zmiany wskaźnika TBARS badanych wyrobów w czasie przechowywania

It should be emphasized that the hygienic state of devices, rooms, employees is of fundamental importance in the production of meat products that are safe for health. Frequently used traditional production methods, e.g. intensive, traditional smoking, mask hygienic inadequacies at the very first moment. However, during storage the microflora rapidly grows decreasing the quality of products and, as a consequence, leading to health hazards of the consumers.

The applied method of QDA allowed to obtain precise information on the sensory quality of cold meats and their changes during the storage. It pointed out that the declared shelf-life dates are too long (Table 3). The storage time affected increased intensity of acid odour in all kinds of processed meats. The expression "acid" also appeared to characterize "other" odour and flavour. The evaluation of meat and meat products stored in the modified atmosphere pointed out that after unpacking the products also had a slightly acid odour, which disappeared after 1-2 h. Such an effect is frequently caused by sugar added in the production process with the aim of improving the aroma. Saccharose is a medium for lactic acid bacteria, which accelerate acidification of products. A higher concentration of saccharose also contributes to mucilage on the surface of vacuum packed sausages and smoked meat. While storing the product for 17 days at the temperature of 4-6^{o}C, those bacteria can multiply to the level of 10^{8}-10^{9} cfu/g.

While evaluating the processed meats produced from meat from organic breeding and produced without any chemical additives, the studies found their low sensory quality after storage, and signs of spoilage, while microbiological tests confirmed the occurrence of a high number of microflora (bacteria from genera *Lactobacillus*, *Enterobacteriaceae*). The cause may be sought in pH higher than in traditionally produced meat products which makes the growth of microflora easier. At the same time, lack of chemical substances (nitrites, nitrates) traditionally used for meat curing can result not only in

Table 3. A comparison of the shelf-life date established by the producer for unpacked products with the storage time after which first significant changes of overall quality were observed in the authors' own studies (days)
Tabela 3. Zestawienie ustalonego przez producenta okresu przydatności do spożycia produktów nieopakowanych z czasem przechowywania, po którym stwierdzono pierwsze istotne zmiany jakości ogólnej w badaniach własnych autorów (dni)

Product	Shelf-life date established by the producer	Storage time after which first significant changes in overall quality were observed in own studies
"Pradziad" sausage	10	7-21
"Swojska" sausage	14	12-26
Surloin	14	12-26
Ham	14	1-12

lowered quality but above all in health risk for the consumers, which is related to the development and production of toxins by *Clostridium botulinum* and *Staphylococcus aureus*.

More and more often, consumers look for meat and its products which come from traditional or organic production, which – as follows from the research – are characterized by high nutritional and sensory quality. However, are they safe from the health point of view? Traditional food production largely based on organic raw materials, without any active participation of food specialists, has no chance for a wider use even with very intensive promotion. Therefore, since food is very important for every man it should not be left without any scientific help. Further research concerning meat and its products, and especially health safety is necessary together with activities aiming at better production effectiveness, especially in organic breeding. Organic agriculture means the way of management with sustained plant and animal production at a farm based on biological and mineral origin agents which are not technologically processed. This is only the first, very important stage of food production. The next ones require the specialists' support.

Traditional processing methods, despite the unquestionable positive sides, especially concerning the sensory quality, require adjustment to the present conditions and consumers' expectations. Traditional and regional products must fulfill quality requirements, not only immediately after production but also during the long period of storage. Health safety of those products is the basic feature of their quality and must be absolutely guaranteed.

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OCENA TRADYCYJNYCH I REGIONALNYCH PRODUKTÓW MIĘSNYCH WYTWARZANYCH W POLSCE

Streszczenie. Wytwarzanie, ochrona i promocja żywności tradycyjnej odgrywają w państwach Unii Europejskiej coraz większą rolę. Produkcja wyrobów o tradycyjnej i regionalnej technologii jest obecnie postrzegana jako szansa dla małych i średnich firm żywnościowych. Powoduje ona aktywizację środowisk małych miasteczek czy wsi, przyczyniając się do zmniejszenia bezrobocia i dając szansę rozwoju regionów. Przyznanie „regionalnych oznaczeń" zwiększa konkurencyjność wyrobów i może również być ważnym elementem oddziaływania na klienta. Produkty te są dobrze postrzegane i pożądane przez konsumentów, co budzi wśród nieuczciwych producentów chęć podrabiania i nieuczciwego wykorzystywania ich nazw. Działania takie wprowadzają konsumenta w błąd co do prawdziwego pochodzenia produktu, a tym samym są przyczyną strat ekonomicznych producentów wyrobów tradycyjnych. W celu zapobiegania takim praktykom w Unii Europejskiej wprowadzono system ochrony produktów regionalnych i tradycyjnych. Wiele aktów prawnych zostało opracowanych w celu ochrony produktów tradycyjnych i regionalnych. Także w Polsce produkty wytwarzane z zastosowaniem tradycyjnych metod lub o zdefiniowanym pochodzeniu znajdują się pod ochroną prawną. Konsumenci wykazują wzrastające zainteresowanie tego rodzaju żywnością i są to zwykle konsumenci wymagający, gotowi zapłacić znacznie wyższą cenę za takie produkty, ale jednocześnie oczekujący wyrobu o dobrej jakości,

a przede wszystkim bezpiecznego. W związku z zainteresowaniem konsumentów wzrasta także liczba chętnych do włączenia się w produkcję wyrobów tradycyjnych. Niestety, bardzo często osoby rozpoczynające prowadzenie tego rodzaju przetwórstwa, nie są do tej pracy przygotowane. Przede wszystkim nie mają podstawowej wiedzy o właściwościach produktów żywnościowych, ich przemianach w czasie przechowywania i – co najistotniejsze – o zagrożeniach związanych z żywnością. Obowiązujące przepisy prawne traktują jako ograniczenie i zamach na wolność producenta. Brak wiedzy uniemożliwia rozsądne podejście do założenia i prowadzenia zakładów żywnościowych, tak aby zapobiegać ryzyku powstania zatruć pokarmowych. Jednocześnie urzędowy nadzór nad żywnością nie zawsze spełnia prawidłowo swoją rolę. W Polsce są zarejestrowane 732 produkty tradycyjne i regionalne, w tym 141 to produkty mięsne. Polskie Towarzystwo Technologów Żywności przeprowadziło w 2007 roku, w ramach projektu finansowanego przez AGROSMAK, badania ankietowe wśród producentów wyrobów tradycyjnych i regionalnych. Badania miały charakter ogólnopolski, przeprowadzono je metodą wywiadu telefonicznego wśród 40 producentów. Stwierdzono, że około 67% zakładów ma wdrożony system HACCP, 80% opracowało zakładowy kodeks GMP. Inne aspekty bezpieczeństwa żywności zostały przedstawione w opracowaniu. Należy również stwierdzić, że surowce używane „wczoraj i dzisiaj" do produkcji żywności tradycyjnej i regionalnej są nieporównywalne, np. 40-50 lat temu, mięso ze świń cechowało się innymi właściwościami niż obecny surowiec. Zmieniły się w sposób istotny wszystkie warunki hodowli, w związku z tym produkcja, a głównie wymagania odnośnie do zapewnienia bezpieczeństwa zdrowotnego, również powinny ulec zmianie w stosunku do produkcji z poprzedniego okresu, ponieważ zmienił się surowiec. Wyróżniki technologiczne i produktowe (cechy jakościowe) mięsnych produktów tradycyjnych i regionalnych oraz ich wpływ (pozytywny i negatywny) zostały przedyskutowane w opracowaniu.

Słowa kluczowe: produkty tradycyjne, produkty regionalne, jakość, bezpieczeństwo

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