

COCOA AND CHOCOLATE PRODUCTS IN PREPARATION OF DESSERTS IN CATERING FACILITIES IN NOVI SAD

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ABSTRACT: *Dessert is the culmination of the meal and no matter how good or not so good the meal was, the dessert certainly leaves the strongest impression. Chocolate as a raw or semi-finished product has an important role for preparing the dessert and it requires a specific approach to defining quality. When purchasing raw materials for the production of desserts it is necessary to take into account all aspects of quality. The main objective of this paper is to determine which aspect will dominate in the decision to purchase cocoa and chocolate products for the preparation of the dessert. At the same time it will be determined what kind of cocoa and chocolate products are used by the caterers, the structure of the offer of desserts made with chocolate and which aspects have the greatest influence on the selection of them in the preparation of chocolate desserts. The hypothesis of this paper is as follows: "Technological quality is a key aspect in the selection of cocoa and chocolate products for the preparation of chocolate desserts." The research results clearly indicate that the most important aspect in the preparation of desserts is the technological quality, price is an important factor that has an influence on the choice, while the sensory quality is the least important aspect of quality.*

Keywords: *dessert, cocoa and chocolate, quality, Novi Sad*

INTRODUCTION

Typically, the meal consists of cold appetizer, soup, hot appetizer, main dish and dessert. The term "dessert" refers to a collection of sweet products that are served after the meal. Accordingly, the subject of this paper are the types of cocoa and chocolate products used for the preparation of chocolate desserts.

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According to the Regulations governing the quality and other requirements for cocoa products, chocolate products, products similar to chocolates and cream products, the following products fall under this regulation: cocoa butter, cocoa powder, chocolate, gianduia, milk chocolate, white chocolate, chocolate *a la taza* and chocolate desserts and pralines („Сл. лист СЦГ“, бр. 1/2005).

A questionnaire was made, based on this Regulation, with the goal to analyse the types of cocoa and chocolate products used by the caterers in Novi Sad and the structure of desserts that are prepared from cocoa and chocolate products.

According to Tešanović (2009, 2012) gastronomic product is a specific type of food product. It represents a collection of several raw foodstuffs, semi-finished products and finished products integrated into one final product, using various methods of mechanical and thermal treatment in special conditions of production and sales. In preparation of chocolate desserts, chocolate has an important role as a raw foodstuff or semi-finished product that requires a specific approach to quality. Consequently, the aim of this study was to determine which aspects of quality (price, nutritional, sensory and technological quality) has the biggest influence on the choice of cocoa and chocolate products for the preparation of chocolate desserts.

The aforementioned research goal can only be realized if the sub-goals are realized, or set a hypothesis as follows: *“The technological quality is the key aspect in the selection of cocoa and chocolate products for the preparation of chocolate desserts.”*

The hypothesis is derived from the following definition: “Technological aspect of quality represents the quality properties of raw materials” (Popov-Raljić, 2013). Therefore, the starting material, in this case cocoa product, is very important in the preparation of desserts and it has to correspond to the purpose. Most chocolate desserts recipes call for a higher percentage of cocoa products that provide a good structure, consistency and colour.

LITERATURE REVIEW

Similar studies in restaurants of Novi Sad were not conducted. In a study conducted in the restaurants of Belgrade it is pointed out that sensory aspect of quality is the most important in the preparation of ready-made dishes, in particular in the preparation of roast pork (Vuksanović et al., 2014).

So far the only studies in the restaurants of Novi Sad were made by analysing the structure of meals and usage of particular parts of meat in the preparation of gastronomic products (Tešanović et al., 2013; Kalenjuck et al., 2013; Dragičević et al., 2014).

The type and use of cocoa and chocolate products will be analysed in this paper, as well as the quality aspect that influence the selection of them for the preparation of desserts. At the same time, the offer of chocolate desserts will also be analysed.

Chocolate desserts

Until the XVII century the word “dessert” signified the act of clearing the table. At that time, the custom was to clear up the table after the meal and put on new tablecloths and napkins. Today, the term “dessert” refers to a collection of sweet products that are served after the meal. Dessert is often associated with reward, happiness and holidays and gives a pleasure after the meal. Desserts must be harmonized with the food which precedes them. They can leave a general impression of the meal. Their selection and preparation must comply with many requirements: diversity, originality, taste, shape, but also the ease of preparation (Tešanović, 2012).

Chocolate desserts are mostly strong, calorific and their taste surely stays for long on the palate and in the memory of the costumer. Keeping that in mind it is most important to take into account what was served before the dessert as well as what beverage is served during the consumption of the chocolate dessert. Overall, wine and chocolate do not mix. The intense flavour of chocolate competes with the aroma of the wine, and the bitterness of the chocolate can mask the acidity of the wine. Particularly awkward is the combination of white wine of champagne and chocolate. Perhaps the best choice, after the meal, is coffee, fine cognac, whiskey or brandy. Professionals, chocolate tasters use a simple glass of water because it quenches your thirst and cleans the oral cavity (Portić, 2011).

The origin and history of cocoa

Cocoa, the main ingredient of chocolate, comes from the tropical lowlands of South America and it is grown for the last three millennia in the area of present-day Central America and Mexico. Around three thousand years ago the people of the Olmec’s, one of the first Central America civilization, was settled in the area south of Veracruz in the Gulf of Mexico. Olmec’s were the first civilization to grow cacao tree and not Aztecs, as it is commonly believed. Another proof of this is the confirmation of the linguists who have found the word “cocoa” in the language of the Olmec’s. The use of cocoa had a lot of ritual, spiritual and political significance for the ancient peoples of Central America (Jacob, Ashkenazi, 2006; Đurašević, 2013).

The creation of chocolate

The chocolate as we know it today was created thanks to the Dutchman Conrad J. Van Houten, who patented the hydraulic press for crushing cocoa beans and making them into cocoa powder in 1828. Singling cocoa butter from ground beans, the industry found itself faced with the question – what to do with the fat. Englishman Joseph Fry discovered, in 1847, how to mix that cocoa powder with sugar and melted cocoa butter. The first chocolate bar was presented by the Fry family in 1849 at a trade fair in Birmingham. Right after that Cadbury presented to the market a box of chocolates, just on the day of St. Valentine, which enshrines the chocolate as a product (Portić, 2011; Hrkalović, 2013).

The division of chocolate

The basic division is on dark, milk and white. They differ in content of cocoa solids, milk fat and cocoa butter.

Dark chocolate must contain a minimum 34% of cocoa mass. The higher the percentage of cocoa content, the better. Today the standard for high-quality dark chocolate is 53% of cocoa.

Milk chocolate – although the most popular one, it is not as high quality. It must contain at least 20% of cocoa. This percentage is generally contained in the chocolates that are mass produced. High-quality milk chocolate contains about 32% of cocoa. Powdered milk is added during the manufacturing process of this type of chocolate.

White chocolate – many argue that this is not really chocolate. It is the cocoa butter with added sugar, artificial flavourings and milk. High-quality white chocolate should have a minimum of 26% of cocoa. White chocolate differs from other types of chocolate as it has no cocoa mass which contains antioxidants, which results in a reduced shelf life of these products (Psodorov, 2014).

The quality of food products in the service of determining the quality aspects

Over the last decade the term “quality” has entered the everyday speech. In order for a product to have quality it has to meet all the requirements of the consumers – an appropriate composition, appearance, safety and an attractive price. On the other hand it must bring profit to the manufacturer.

“The quality represents a sum of all the properties and characteristics of products or services that are related to the satisfaction of expressed and identified needs of consumers” (Kosar, Rašeta, 2005).

When it comes to food products, the extent to which a set of inherent characteristics of such a product meets the requirements is reflected in five groups of requirements: Hygienic and toxicological (Qht), Technical and technological (Qtt), Nutritional (Qn), Sensory (Qs) and Market and consumer (Qtp) (Popov-Raljić, 2013).

Gastronomic quality

Gastronomic product is a specific type of food product. It represents a sum of several agricultural or foodstuff raw materials, semi-finished and finished products integrated into one final product using various methods of mechanical and thermal treatment in special conditions of production and sales. The complexity of gastronomic products and the conditions in which they are prepared requires a specific approach to defining its quality (Tešanović, 2009).

In order to assess the quality of the gastronomic product the following aspects of quality have to be considered (Popov-Raljić, 2013):

- Sensory quality (Qs)
- Hygienic and toxicological quality (Qht)
- Technical and technological quality (Qtt)

- Nutritional quality (Qn)
- Market and consumer quality (Qtp).

In order to fully assess the quality of a gastronomic product it is necessary to enlist an entire team of experts from various fields. Most often, when choosing foodstuffs, products and semi-products, the chefs rely on foodstuff that have a proven quality and on what is written on their declarations. Admission of foodstuff in the facility must always be monitored and a brief sensory quality evaluation should be carried out on the spot.

Sensory quality of gastronomic products

Sensory quality or quality of products evaluated by man's senses is one of the most important in the assessment of quality of gastronomic products, and it usually precedes all the other quality evaluations (Radovanović and Popov-Raljić, 2000; Popov-Raljić, 2013).

Technical and technological quality of gastronomic products

Technical and technological quality – Qtt indicates the characteristics of foodstuffs that affect the quality of the finished gastronomic product (e.g. structure, consistency, viscosity, colour, pH value).

The approach that combines the processes of foodstuff production and the final gastronomic products “from farm to table” imposes a direct cooperation of the entire team of specialists (technologists, microbiologists, veterinarians, caterers, etc.) with a common goal – making a quality gastronomic product (Radovanović and Popov-Raljić, 2000/2001).

Nutritional quality of gastronomic products

Nutrients are all chemical compounds that can be isolated in a pure state from plant or animal foodstuff, and have defined a role in the functioning of the human organism. The basic functions of the body are: physical and mental work, cell renewal, growth and development, heat maintenance, etc (Влаховић, 2002).

Nutrients can be divided into six basic groups: proteins, carbohydrates, fats, vitamins, minerals and water (Škrinjar, Tešanović, 2007).

Market and consumer quality of gastronomic products

The group of market and consumer factors is comprised of supply, demand and price of gastronomic products. These three main factors are determined by a number of additional ones such as: social structure, purchasing power, religious affiliation, customs and acquired habits of consumers.

Requirements placed in the field of Qtp can usually be reduced to the statement that the gastronomic product with its quality and price meets the requirements of the targeted segment of consumers, but also brings in a profit to the catering facility (Radovanović, 2000).

PLACE AND METHODS OF RESEARCH

The research was conducted in the following catering facilities from the territory of Novi Sad: Atelje, La Morena, Fish i zeleniš, Sečuan, Wine & Delli, Zak, Terasa, Paprika, Hedonija and Grapa.

The content of the research determined the use of suitable methods. The results were obtained in following ways:

- Using different literature sources;
- Field research (observation, data collection, interviewing);
- Statistical and graphical methods.

Within the research method the technique of interviewing based on a questionnaire was used. The questionnaire was formed according to the Regulations on quality and other requirements for cocoa products, chocolate products, products similar to chocolate and cream products. Methods of synthesis and analysis that were combined according to specifics of this research were used for literature analysis. The collection of data was conducted between May and June of 2014 which provided us with 10 successfully filled out questionnaires.

Survey data was sorted, statistically processed and graphically presented using Microsoft Office Excel 2010.

RESULTS AND DISCUSSION

Restaurant managers or chefs who are in direct contact with the cocoa and chocolate products that are procured and used were interviewed in the survey.

Analysis of cocoa and chocolate products that are purchased the Novi Sad catering facilities

The survey has enabled the analysis of the products that are purchased by the Novi Sad caterers for the preparation of desserts. Based on the results shown in Figure 1 it can be concluded that the chocolate is most used (35%), followed by white chocolate and cocoa powder (23%), while the least used are milk chocolate (11%), gianduia and chocolate desserts and pralines (4%). Other products such as cocoa butter, stuffed chocolate and chocolate a la taza are not on the chart, which means that they are excluded from use, i.e. the Novi Sad caterers do not use them in the preparation of chocolate desserts.

It is important to point out the restaurant “Terasa” which is located on the Petrovaradin Fortress as a positive example of introducing innovations. In fact, this is the only restaurant that uses gianduia for the preparation of chocolate desserts and thus reaching competitive advantage. Gianduia is used to prepare the decorations and nougat cake, which makes this final gastronomic product unique and gives it special sensory quality.

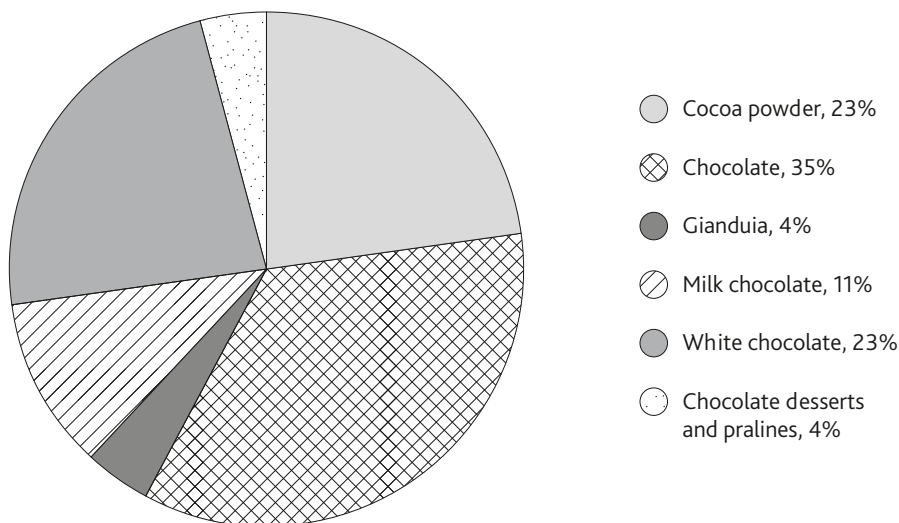


Figure 1. Usage of cocoa and chocolate products

Analysis of cocoa and chocolate products manufacturers

By analysing the structure of the products that are used in the restaurants, shown in Figure 2, it can be concluded that the most common cocoa and chocolate products come from the manufacturer “Callebaut”. Their products are used in restaurants “Terasa”, “La Morena”, “Wine & Delli” and “Zak”.

In the second place are the products from the domestic manufacturer “Menaž” as well as the products from the Swiss manufacturer “Milka”. These products are used in the restaurants “Hedonija”, “Grapa” and “Atelje”.

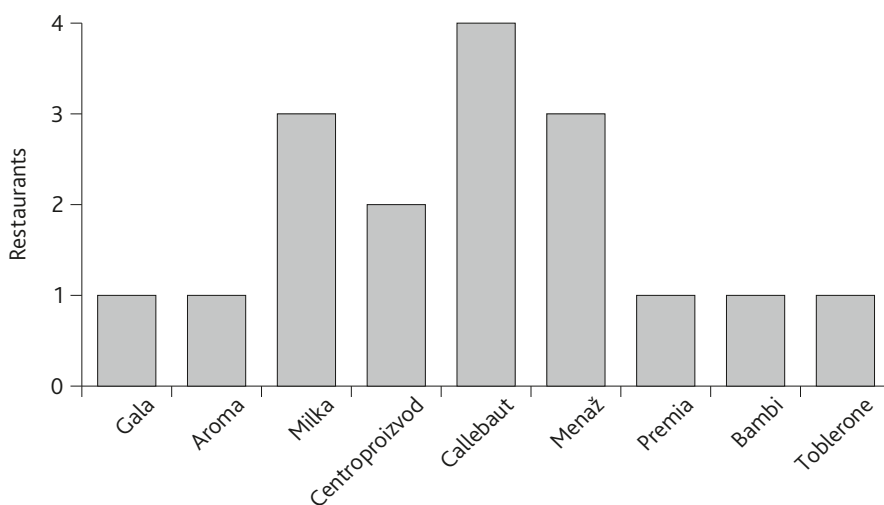


Figure 2. Analysis of cocoa and chocolate products

In the third place are the products of another domestic company, “Centroproizvod” while the least used products used come from the following manufacturers: “Gala”, “Aroma”, “Premia”, “Bambi” and “Toblerone”.

The task of the catering facility management is to, in cooperation with the chef, determine which product is the most suitable for the requirements of the desserts (recipe and normative), as well as to be informed about the range of products on the market.

Analysis of the aspects that influence the selection of cocoa and chocolate products

The analysis of the aspects that influence the selection of products was the next phase in the results. Analysing the results (shown in Figure 3) it can be concluded that in all restaurants the most important is the technological aspect of quality in the selection of cocoa and chocolate products. Based on the obtained results, the hypothesis “*The technological quality is the key aspect in the selection of cocoa and chocolate products for the preparation of chocolate desserts*” was confirmed.

Technological quality is an important aspect because for all the interviewed caterers it is important that the product is suited to the purpose, i.e. for the preparation of chocolate desserts and that the guests get a final product of uniform quality.

The second most important aspect to the Novi Sad caterers is the price. The goal of the management in the catering industry is the profit but also the long-term success through customer satisfaction. In the analysed restaurants, seven out of ten carefully chose their products based on price for the preparation of chocolate desserts.

The sensory quality of the products is in third place and only three restaurants take into account this aspect, namely “La Morena”, “Atelje” and “Wine & Delli”. Accordingly, it can be assumed that the caterers are not familiar with this aspect, whose factors (general appearance, taste, odour, and colour) contribute to the quality of the final gastronomic product.

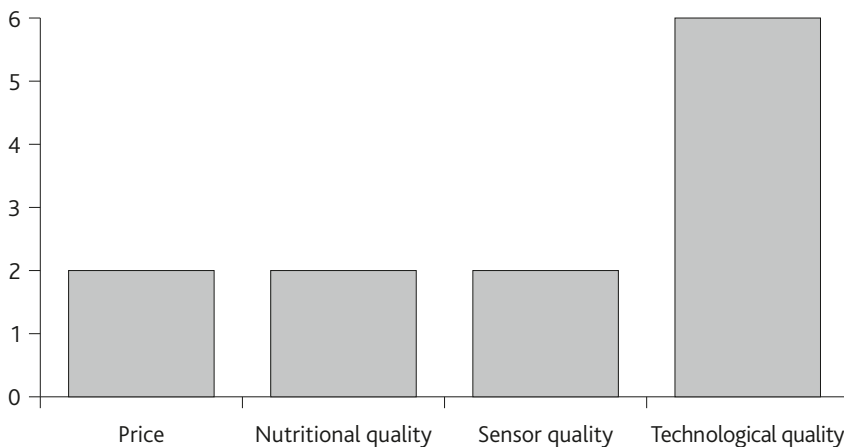


Figure 3. Analysis of the aspects that influence the selection of cocoa and chocolate products

Figure 3 shows the result of the nutritional quality of the product. It may be noted that this aspect has no importance in the purchase of a particular product. The results indicate that catering workers are not yet aware of the importance of knowing the nutritional values of the products or the final gastronomic product. Accordingly, this deficiency is a threat to the domestic catering facilities because they are not in step with world trends and they might lose the race with the competitors. It may also have an impact on the number of guests which record their calorie intake. Lack of commitment to nutritional quality of the product can be also interpreted as a chance that the caterers should take advantage in order to rise above the competition and gain a market advantage.

The structure of the gastronomic products offer

The results of this segment of the research were obtained by field research within which the methods of observation and data collection were used. The structure of the offer in the Novi Sad restaurants is exceptionally heterogeneous, and a significant group is the one that consists of chocolate desserts. Based on the analysis of Figure 4 one can conclude that the chocolate desserts take 30% of the offer while the other desserts account for 70% of the offer.

The overview of the offer structure makes it possible to determine the share of chocolate desserts. Out of 67 desserts (the total number of desserts prepared in the surveyed restaurants) as much as 27 are made out of chocolate. Number of chocolate desserts would be higher if we took into account all the desserts in whose preparation chocolate is used but some other foodstuff is more dominant and thus they are not considered to be chocolate desserts.

According to the analysis of the collected data, tiramisu is the most commonly made dessert made with cocoa products. The next, by the frequency of repeating, is the choc-

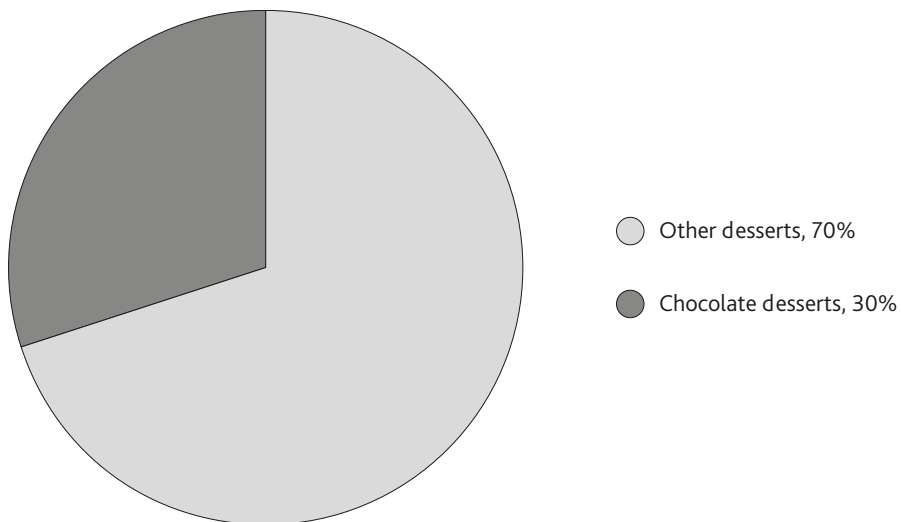


Figure 4. Chocolate desserts offer structure

olate mousse. In addition to these two representatives of the chocolate desserts, only in one of the restaurants they prepare chocolate tart and it is a positive example of changes in the offer since it gives them a differentiation from the competition.

CONCLUSION

Using different sources of literature, conducting a field research involving observation, data collection and surveying, using statistical and graphical methods the following conclusions were made:

- The survey established that the surveyed restaurants do not take into account the nutritional aspect when purchasing cocoa and chocolate products. This lack of attention by the caterers can be interpreted as a chance to include this aspect of quality in order to get a nutritionally balanced menus.
- The research has shown that there are some cocoa and chocolate products that are not used by Novi Sad caterers and which are unknown. Based on these facts, chefs and confectioners can create new desserts and diverse their offer in this way.
- The selection of manufacturers of cocoa and chocolate products from which Novi Sad caterers purchase the products is wide. The reason for this should be sought in the existence of a wide variety of chocolate desserts. The fact that the most commonly used products come from the Belgian manufacturer Callebaut, which produces fine Belgian chocolate that produce high-quality final products, is in favour of Novi Sad caterers.
- Future researches should include a larger number of catering facilities in order to compare the results. Also, the study may include repeated studies in the same restaurants to determine the credibility of the results.
- The research clearly shows that, for the Novi Sad caterers, the most important aspect is the technological quality which confirmed the hypothesis.

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