

HONEY CONSUMPTION PATTERNS OF YOUNG PEOPLE IN ROMANIA

Cristina Bianca Pocol¹, Peter Šedík², Elena Horská³

University of Agricultural Sciences and Veterinary Medicine¹

Department of Animal Production and Food Safety,

Cluj Napoca, Romania

Slovak University of Agriculture in Nitra^{2,3}

Department of Marketing and Trade

Tr. Andreja Hlinku 2

Nitra, Slovakia

e-mail^{1,2,3}: cristina.pocol@usamvcluj.ro, sedik.peter@gmail.com, elena.horska@gmail.com

Abstract

The aim of the study was to identify and explore honey consumption patterns of young people (aged 18 – 30) in the Cluj region, Romania, based on primary data collected from questionnaire surveys conducted on a sample of 585 respondents. Questionnaires were distributed online via emails and social media in November 2017. Non-parametric statistical tests were applied to examine correlations between selected variables. The results showed that the majority of young people consume honey a few times per week or occasionally and their annual consumption is up to 1 kg. The highest consumption is during the winter period and honey is mostly consumed in the morning as a sweetener in beverages. Two interesting dependencies were confirmed. The first correlation was proven between frequency of consumption and healthy eating habits: respondents who consider themselves to be eating healthy have a higher frequency of honey consumption. The second correlation was proven between honey consumption habits during childhood and individual consumption: respondents with higher honey consumption per year used to consume it during their childhood on a regular basis. In conclusion, honey should be promoted among children in order to develop a positive attitude towards its consumption in their early years. The practical implications of the study are related to the possibility to initiate educational campaigns among young generations in Romania, aiming to develop sustainable honey consumption behaviour.

Keywords: consumer behaviour, honey, Romania, young segment

JEL Classification: Q13, M31, D12

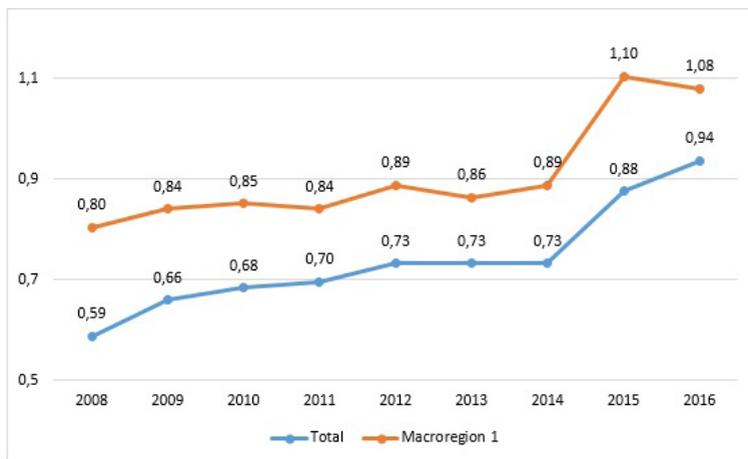
1 Introduction

Since the dawn of time, people have been using honey as a natural sweetener to obtain energy and strength. However, honey has been appreciated not only for the higher nutrient value, but also due to its healing effects, being widely used as an ointment by many nations (Bogdanov, Jurendic, Sieber & Gallmann, 2008). Honey is considered a concentrated source of glucose and fructose, as well as a source for a rich spectrum of minerals, vitamins, amino-acids and flavonoids (Crittenden, 2011). Therefore, honey has been perceived as an important component in human diet and it is becoming more popular among consumers mainly due to its nutritional properties and benefits (Schifani et al., 2016; Cosmina, Gallenti, Marangon & Troiano, 2015). Motivation for honey consumption is commonly associated with product properties and depends on current trends connected with healthy eating habits (Ismail, Kahtani, Adgaba, Al-Ghamdi & Zulail, 2014). However, each consumer may associate honey differently (Stolzenbach, Bredie & Byrne, 2013). According to consumer research in Ireland, besides the product's healthy and nutritional qualities, consumers consider the following attributes: texture, colour, source and price (Murphy, Cowan, Henchion & O'Reilly, 2000).

1.1 Honey Consumption Patterns in Romania

Romanian consumers perceive honey as a natural product with various health benefits and consider its consumption as part of a healthy lifestyle (Pocol & Bolboaca, 2013). Furthermore, the correlation between healthy lifestyle and honey consumption was proven in another Romanian consumer study (Pocol & Ványi, 2012). The existing consumer interest in honey can be explained by the high attention paid to natural products and alternative medicine. Despite the positive attitude towards honey as an alternative sweetener to sugar, the quantity consumed in Romania was low for a certain period of time (Pocol & Marghitas, 2008). Another study in Romania identified honey as a product, which is regularly included in consumers' diet. One third of consumers ate honey once per week or once per month, however the overall honey intake was decreasing at that time (Krystallis, Petrovici & Arvanitoyannis, 2007). According to the National Institute of Statistics in Romania (see Figure 1), there has recently been an increasing trend in annual honey consumption per capita. In 2016, each person consumed 0.94 kg on an average. The survey shows that the annual honeyconsumption for the Macro-region 1, including the Cluj region, has increased over the years.

Figure 1 Annual honey consumption per capita in Romania



Source: National Institute of Statistics in Romania, 2018.

In addition, the amount consumed depends on consumer age structure. Young people (18 – 30 years) tend to consume lower quantities, while older generations (46 years and older) consume higher quantities. The 32 – 45 age category exhibits “normal” consumption patterns (Pocol & Teselios, 2012). Another study conducted by Pocol (2011) identified a higher honey consumption in case of elderly consumers. Moreover, a higher consumption was revealed in the case of women and in households with children aged younger than 14 years. Lower honey consumption among young consumers presented itself in several countries including the Slovak Republic, Hungary, Poland and the Czech Republic (Guziy, Šedík & Horská, 2017; Vanyi, Csapo & Karpati, 2010; Pidek, 2001; Šánová, Nový, Svobodová & Šeráková, 2015).

The aim of the study was to evaluate the honey consumption behaviour among Romanian young people and to identify consumption patterns in terms of consumption frequency, annual consumption, purpose of use and health aspects.

2 Data and Methods

Consumer behaviour research was based on primary data obtained by conducting questionnaire surveys in Romania. Questionnaires were distributed via social media and emails in November 2017. The research sample has reached 585 respondents by purposive sampling targeted for young consumers (18 – 30 years)

living in the Cluj region. The majority of respondents can be characterised as students with university education living in cities, with a personal monthly income up to 1 800 lei (see Table 1).

Table 1 **Socio – Demographic Profile of the sample N = 585 (%)**

Gender		Occupation	
female	64.8 %	employed	35.6 %
male	35.2 %	maternity leave	3.6 %
Age		entrepreneur	2.4 %
18 - 24 years	67.9 %	unemployed	1.9 %
25 - 30 years	32.1 %	student	56.6 %
Level of Education		Household structure	
secondary	21.7 %	with parents	40.9 %
university	78.3 %	with husband/ partner without children	23.1 %
Personal Monthly Income		with husband/ partner with children	7.5 %
up to 1800 lei	66.5 %	alone	28.5 %
1801 – 2700 lei	19.1 %	Household members	
more than 2700 lei	14.4 %	1	11.3 %
Residence		2	22.4 %
rural	23.3 %	3 - 4	54.4 %
urban	76.8 %	5 and more	12.0 %

Source: Questionnaire surveys – own processing, 2017.

The results were processed and statistically tested in SAS Enterprise Guide 7.1

The following Statistical methods were used:

Chi-square test of independence

This statistical test is used for testing correlation between two qualitative variables,

$$RCA = RXA = \frac{X_{ij} / \sum_n X_{nj}}{\sum_k X_{ik} / \sum_k X_{nk}} \quad (1)$$

where: E_i – empirical frequencies,
 T_i – theoretical frequencies,
 k – number of columns
 m – number of rows

Cramer's V test measures the strength of the dependencies.

$$RCai = \frac{X_i - M_i}{X_i + M_i} - \frac{\sum(X_i - M_i)}{\sum(X_i + M_i)} \quad (2)$$

Coefficients attain values within the $<0, 1>$ interval

- $<0, 0,1>$ represents trivial correlation
- $<0,1, 0,3>$ represents weak correlation
- $<0,3, 0,5>$ represents medium correlation
- $<0,5, 1>$ represents strong correlation (Matejková, Pietriková & Poláková, 2013).

For correlation testing the following hypotheses were formulated:

H1: Socio-demographic determinants have an impact on individual honey consumption per year.

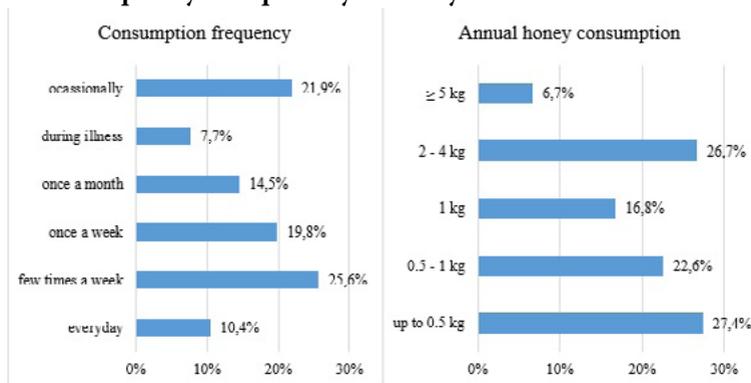
H2: There exists a correlation between honey consumption frequency and healthy eating habits.

H3: There exists a correlation between annual honey consumption per person and intake of honey throughout respondents' childhood.

3 Results and Discussion

The consumption frequency is considered to be one of the most important indicators in the evaluation of consumption patterns. The results of the questionnaire surveys showed (see Figure 2) that the young segment consume honey a few times per week (25.6 %) or occasionally (21.9 %). More than one third consume it once a month or less. The overall honey consumption of young respondents in Romania per year is low. The majority of respondents eat only up to 1 kg per year, where 27.4 % consume only up to 0.5 kg yearly. Approximately 26.7 % consume between 2 to 4 kilograms per year.

Figure 2 The frequency and quantity of honey consumed

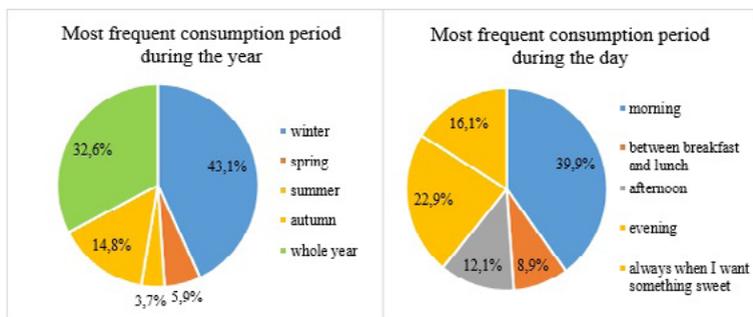


Source: Questionnaire surveys – own processing, 2017.

In the Cluj region, honey is consumed by all family members, as they consume from 2 to 5 kg yearly. The same consumption patterns occurred in Poland, where the young generation consume honey only occasionally and a maximum of 250 grams per month (Żak, 2017). The first hypothesis was formulated in the context of annual honey consumption. It assumes dependences between socio-demographic determinants, which impact on individual honey consumption per year. Due to the nature of the research sample, the following socio-demographic determinants were selected: gender, education, income and place of residence. Based on the results of the Chi-square test of independence, the only dependence confirmed for the significance level ($\alpha = 0.05$) was in terms of gender, exhibiting a weak strength of dependence (Cramer's $V = 0.1551$).

Another aspect in the consumption patterns is the period when honey is consumed. Based on the results, the young generation in Romania mostly consume honey in the winter period (43.1 %) or throughout the whole year (32.6 %). Furthermore, the season influences consumer needs and wants. For example, during the festive season, people purchase honey as the ingredient to confectionery products and cakes (Pocol & Marghitas, 2006). During the day, the most frequent consumption is in the morning (39.9 %) or in the evening (22.9 %). Similar results were obtained in the province of Vojvodina, where the majority of consumers eat honey throughout the year and increase consumption in winter (Ćirić, Ignjatijević & Cvijanović, 2015).

Figure 3 Most frequent period of honey consumption in Romania

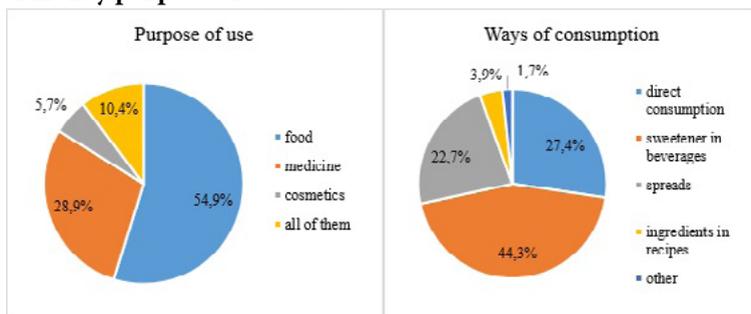


Source: Questionnaire surveys – own processing, 2017.

Honey can be used as food, medicine and in cosmetics, therefore it is perceived by consumers as a multi-purpose product (Addam, Rifai, Naous, Matraji & Mezher, 2017). The results showed (see Figure 4) that honey is mostly used as food (54.9

%) and as medicine (28.9 %), while only few respondents make use of it in cosmetics (5.7 %). Approximately 10 % fully enjoy its multi-functionality. Another study claims that herbal products attract Romanian consumers and therefore, honey is used as remedy by one in five respondents (Arvanitoyannis & Krystalis, 2006). Moreover, increasing attention granted to the health benefits of honey among consumers was proven by Polish research studies, which showed the high interest of consumers towards the topic of honey in medicine (Roman, Popieła-Pleban, Kozak & Roman, 2013). The majority of young consumers in Romania prefer to consume honey in beverages as a sweetener (44.3 %). Another frequent way of consumption is direct consumption (27.4 %) or as a spread (22.7 %). In general, consumers eat honey in combination with other products. The most frequent options are: beverages, spreads, marinades and porridge (Batt & Liu, 2012; Pocol & Marghitas, 2007; Żbikowska, Kowalska, Rutkowska, Kozłowska & Onacik-Gür, 2017).

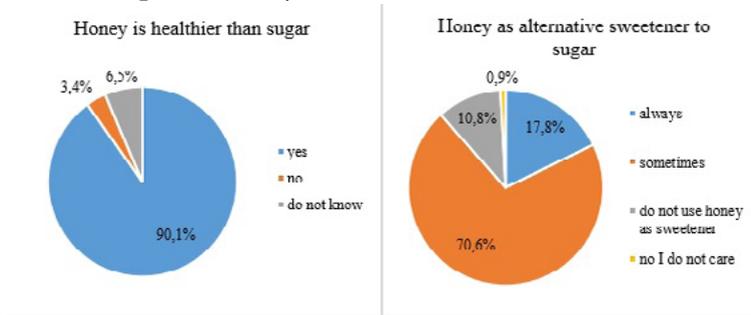
Figure 4 Honey purpose of use



Source: Questionnaire surveys – own processing, 2017.

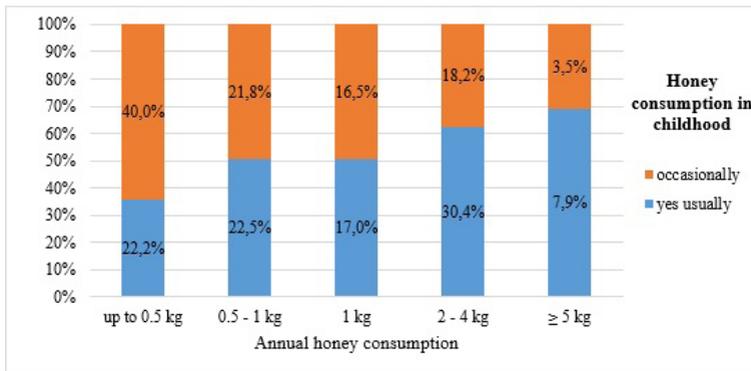
In the context of honey usage in medicine, the majority of young Romanian consumers know about the healing effects of honey (85.8 %), mostly using it for curing illness on a regular basis (40.7 %) or sometimes (46.2 %). Around 80 % of them increase the consumption of honey during illness. Based on the results, approximately 90 % consider honey healthier than sugar and almost 89 % use it as an alternative sweetener to sugar. Only 10.8 % do not sweeten with honey at all (see Figure 5).

Figure 5 Health aspect of honey



Source: Questionnaire surveys – own processing, 2017.

Figure 7 Influence of honey consumption during childhood on annual honey consumption



Source: Questionnaire surveys – own processing, 2017.

According to the type of honey, approximately 36 % prefer to consume monofloral honey, 20 % prefer polyfloral honey and 44 % do not have a particular preference. Among monofloral honey varieties, the most preferred one is acacia honey (60.5 %), followed by linden honey (21.2 %). The same results were obtained by Pocol (2012) in questionnaire surveys conducted in the North West Region of Romania, where the majority of respondents preferred acacia, linden and sunflower honey.

4 Conclusion

The study identifies consumption patterns among young honey consumers in the Cluj region and based on the results, several main findings may have outlined:

- The young generation mostly consume honey few times per week or occasionally with annual consumption up to 1 kg. Socio-demographic determinants such as the level of education, personal monthly income and place of residence do not exert a significant influence on respondents' consumption per year. The only impact was proven with the respondents' gender.
- The majority of respondents consume honey throughout the year or in the winter period, both in the morning and in the evening. Honey is consumed by the whole family with annual consumption ranging from 2 to 5 kg. The most preferred type of monofloral honey is acacia and linden honey.
- In general, honey is mostly used as food and medicine, for drinks, spreads and direct consumption. Nearly each respondent considers and uses honey as a healthier sweetener alternative to sugar. The majority of respondents know about its healing effects and use it for curing illnesses.
- Customs and traditions, together with healthy eating habits and lifestyle significantly influence consumption patterns in Romania. The consumers, who consider themselves as having healthy eating habits, consume honey more frequently (H2). Moreover, consumers who used to consume honey on a regular basis during their childhood, consume a higher amount of honey per year in their adulthood (H3).

In conclusion, promoting honey among children at schools and at home, where they should be educated about its benefits and nutritional value, should increase honey consumption for young generation. This approach will establish a good basis for healthy eating habits and ensure a higher consumption of honey in their adulthood.

References

1. ADDAM, K., RIFAI, F., NAOUS, H., MATRAJI, S., MEZHER, B. (2017). Fallacies and behaviors of Lebanese consumers towards marketing of honey. *International Journal of Commerce and Management Research*, 3(6), p. 177-183. doi:10.22271/manage.2017.v3.i6.39
2. ARVANITTOYANNIS, I., KRYSTALLIS, A. (2006). An empirical examination of the determinants of honey consumption in Romania. *International Journal of Food Science & Technology*, 41, p. 1164-1176. doi:10.1111/j.1365-2621.2006.01174.x

3. BATT, P. J., LIU, A. (2012). Consumer behaviour towards honey products in Western Australia. *British Food Journal*, 114(2/3), p. 285-297. doi:10.1108/00070701211202449
4. BOGDANOV, S., JURENDIC, T., SIEBER, R., GALLMANN, P. (2008). Honey for Nutrition and Health: A Review. *Journal of the American College of Nutrition*, 27(6), p. 677-689. doi: 10.1080/07315724.2008.10719745
5. ČIRIĆ, M., IGNJATIJEVIĆ, S., CVIJANOVIĆ, D. (2015). Research of honey consumers' behaviour in province of Vojvodina. *Economics of Agriculture*, 62(3), p. 627-644.
6. COSMINA, M., GALENTI, G., MARANGON, F., TROIANNO, S. (2016). Attitudes towards honey among Italian consumers: A choice experiment approach. *Appetite*, 99, p. 52-58. doi:10.1016/j.appet.2015.12.018 PMid:26719101
7. CRITTENDEN, N. A. (2011). The importance of honey consumption in Human Evolution. *Food and Foodways: Explorations in the History and Culture of Human Nourishment*, 19(4), p. 257-273. doi:10.1080/07409710.2011.630618
8. GUZIY, S., ŠEDÍK, P., HORSKÁ, E. (2017). Comparative study of honey consumption in Slovakia and Russia. *Potravinárstvo*, 11(1), p. 472-479. doi:10.5219/784
9. ISMAIEL, S., AL KAHTANI, S., ADGABA, N., AL-GHAMDI, A. A.y, ZULAIL, A. (2014). Factors That Affect Consumption Patterns and Market Demands for Honey in the Kingdom of Saudi Arabia. *Food and Nutrition Sciences*, 5, p. 1725-1737. doi:10.4236/fns.2014.517186
10. KRYSTALLIS, A., PETROVICI, D., ARVANITOYANNIS, I. (2007). From Commodities to the Consumption of Quality Foods in Eastern European Context. *Journal of East-West Business*, 12(4), p. 5-37. doi:10.1300/J097v12n04_02
11. MATEJKOVÁ, E., PIETRIKOVÁ, M., POLÁKOVÁ, Z. (2013). *Praktikum zo Štatistiky A*. Nitra: Slovenská poľnohospodárska univerzita.
12. MURPHY, M., COWAN, C., HENCHION, M., O'REILLY, S. (2000). Irish consumer preferences for honey: a conjoint approach, *British Food Journal*, 102(8), p. 585-598. doi:10.1108/00070700010348424
13. National Institute of Statistics in Romania. (2018). *Monthly average agro-food consumption per person by main social categories, macroregions and development regions*. Available at TEMPO-Online Time series.
14. PIDEK, A. (2001). Youth preferences in honey consumption. *Journal of apicultural science*, 45, p. 115-119.

15. POCOL, C. B. (2011). Modelling the honey consumption behaviour in Romania by using socio-demographic determinants. *African Journal of Agriculture Research*, 6(17), p. 4069-4080.
16. POCOL, C. B. (2012). Consumer preferences for different honey varieties in the North West Region of Romania. *Agronomy Series of Scientific Research*, 55(2), p. 263-266.
17. POCOL, C. B., BOLBOACA, S. D. 2013. Perception and trends related to the consumption of honey: A cse study of North-West Romania. *International Journal of Consumer Studies*. 37, p. 642-649. doi:10.1111/ijcs.12046
18. POCOL, C. B., MARGHITAS L. A. (2008). A comparison between the segmentation of honey market in Romania and Ireland. *Bulletin UASVM*, 65(2), p. 279-282.
19. POCOL, C. B., MARGHITAS, L. A. (2006). Factors that influence supply and demand for bee products. *Buletin USAMV-CN*, 62, p. 133-136.
20. POCOL, C. B., MARGHITAS, L. A. (2007). Market study about honey consumption in Romania. *Buletin USAMV-CN*, 64(1/2).
21. POCOL, C. B., TESELIOS C. M. (2012). Socio-economic determinants of honey consumption in Romania. *Journal of Food, Agriculture & Environment*, 10(2), p. 18-21.
22. POCOL, C. B., VÁNYI G. A. (2012). A comparison between Hungarian and Romanian consumption. *Bulletin UASVM*, 69(2), p. 244-252.
23. ROMAN A., POPIELA-PLEBAN E., KOZAK M. (2013). Factors influencing consumer behavior relating to the purchasing of honey. Part 1. The buying process and the level of consumption. *Journal of Apicultural Science*, 57(2), p. 163-178. doi:10.2478/jas-2013-0026
24. ROMAN, A., POPIELA-PLEBAN, E., KOZAK, M., ROMAN, K. (2013). Factors influencing consumer behavior relating to the purchase of honey part 2. product quality and packaging. *Journal of apicultural science*, 57(2), p. 175-185. doi:10.2478/jas-2013-0027
25. SCHIFANI, G., ROMEO, P., SCHIMMENTI, E., COLUMBA, P., MIGLIORE, G. (2016). Conventions of quality in consumer preference towards local honey in Southern Italy. *Calitatea: Acces la Success*, 17(153), p. 92-97.
26. STOLZENBACH, S., BYRNE, D. V., BREDIE, W. L. P. (2011). Sensory local uniqueness of Danish honeys. *Food Research International*, 44(9), p. 2766-2774. doi:10.1016/j.foodres.2013.02.030
27. ŠÁNOVÁ, P., NOVÝ, J., SVOBODOVÁ, J., ŠERÁKOVÁ, P. (2015). Pilot analysis of key factors in honey consumption. *Proc. 24th Conference Agrarian Perspectives – Global Agribusiness and Rural Economy*, Prague, Czech Republic, p. 416-424.

28. VANYI, G. V., CSAPO, Z., KARPATI, L. (2010). Honey consumption in Europe with especial regard to Hungary. *45th Croatian & 5th International Symposium on Agriculture: Agricultural Economics and Rural Sociology*, pp. 200-204.
29. ŽAK, N. (2017). Honey market in the opinion of young consumers, *Handel Wewnętrzny 1*, p. 424-438.
30. ŻBIKOWSKA A., KOWALSKA M., RUTKOWSKA J., KOZŁOWSKA M., ONACIK-GÜR S. (2017). Conditions of honey consumption in selected regions of Poland. *Acta Sci.Pol. Technol. Aliment.* 16(1), p. 101-112. doi:10.17306/J.AFS.2017.0446