



## Consumer's attitude towards the consumption of cereals and oil products

<sup>1</sup>Camelia Oroian, <sup>2</sup>Bianca Moldovan, <sup>1</sup>Iulia C. Mureșan, <sup>2</sup>I. Valentin Petrescu-Mag, <sup>2</sup>Dragoș Oroian

<sup>1</sup> University of Agricultural Sciences and Veterinary Medicine, Faculty of Horticulture, Cluj-Napoca, Romania; <sup>2</sup> University of Agricultural Sciences and Veterinary Medicine, Faculty of Agriculture, Cluj-Napoca, Romania. Corresponding author: B. Moldovan, bianca.moldovan@usamvcluj.ro

**Abstract.** We are witnessing, in our current society, the manifestation of some important changes regarding the consumer's behavior of agri-food products and the market management of these products. The present paper emphasizes a study on consumers' attitudes regarding the consumption of cereal and oil products in Cluj County, Romania. From the data analysis obtained using a sociological survey, by applying a questionnaire on a sample of 210 respondents, it appears that most respondents purchase and consume cereal and oil products, bread (86.67%) and oil (72.86%) being most often purchased and consumed.

**Key Words:** consumer behavior, agri-food products, market management.

**Introduction.** By processing raw materials, the agri-food industry produces high quality food in terms of nutritional, sensory and aesthetic quality (Cowburn & Stockley 2005). Cereals, namely oilseeds, represent the mostly spread group of plants in all cultivation areas, worldwide, and in our country (Zanettia et al 2013), that are being processed by the agri-food industry. Cereal grains represent the basic food for almost the entire population, managing to provide about 70% of the total carbohydrates, 60% of protein, 15% of fat and about 60% of the calories consumed worldwide in our days (Seal et al 2006).

From the world's cereal production, only 40% is used directly in human food under various forms (especially wheat, rye, triticale and rice), the rest is being used either in animal feed or in industry (Urala & Lähteenmäki 2007). Also, vegetable fats play a significant role in human nutrition, being used both in direct nutrition, due to their high caloric power and high digestibility, and also in the food industry (Ivkova et al 2019). Among oil plants, in our country, sunflower has the most varied uses in human nutrition, being consumed as a series of products (Stanciu & Stanciu 2007), reason why it gained a prominent place in the world agriculture (Soare & Chiurici 2018).

For these reasons and in order to provide more implications for the sustainable security of cereals and oilseeds, this study has performed an analysis regarding the consumption of various cereals and oilseeds in Cluj County, Romania. The final objective was to obtain information, so that farms and companies in the production of cereals and oilseeds field can make innovations in response to consumer's wishes.

**Material and Method.** The aim of the study was to analyze consumer's attitude regarding the consumption of cereal and oil products. The survey method and the structured questionnaire tool were used to collect data from the respondents. The sample consisted of food consumers from Cluj County, Romania. A questionnaire consisting of 25 questions was applied to consumers between February and June 2021. A number of 210 questionnaires were validated. The collected data were analyzed using descriptive statistics and Fisher's exact test in order to determine if differences were highlighted between various consumer categories. The questionnaire is structured in two main parts: the first part includes questions related to the socio-demographic aspects of the

respondents, and the second part includes questions related to the categories of products most often consumed, categories of cereal products preferred by consumers, categories of oilseed products preferred by consumers, acquisition and consumption frequency of cereal and oilseed products depending on the existence of children in the family.

From the total number of respondents (Table 1), 90.95% were female, while only 9.05% males. This could be explained by the fact that women are the ones responsible for/or enjoying more household shopping (Ramprabha 2017). Also, it can be noticed that 33.81% of the respondents are between 25-34 years old, and 69.53% of the cases declared that in the household are also children, and 48.10% of the subjects have achieved higher education. The average monthly income is higher than 956.41 USD in 45.24% of the cases.

Table 1

Socio-demographic profile of respondents

<i>Characteristic</i>	<i>Category</i>	<i>n</i>	<i>Percent %</i>
Gender	Female	191	90.95
	Male	19	9.05
Age	18-24 years old	57	27.14
	25-34 years old	71	33.81
	35-44 years old	55	26.19
	45-54 years old	20	9.52
	over 55 years old	7	3.33
Children in the household (under 18 years old)	no	64	30.47
	yes	146	69.53
Education level	Primary education	11	5.24
	High-school studies	89	42.38
	Higher education	101	48.10
	Postgraduate studies	9	4.29
Residential environment	Rural	98	46.67
	Urban	112	53.33
Income	<155.5 USD	3	1.43
	155.5-239.1 USD	12	5.71
	239.34-478.21 USD	41	19.52
	478.44-956.41 USD	59	28.10
	>956.41 USD	95	45.24

**Results and Discussion.** By analyzing the category of cereals and oilseeds consumed, we can observe that the most frequently consumed product is bread (86.67%), followed by pasta (73.33%) and oil (72.86%) (Figure 1). At the opposite side, halva is being consumed by only 24.29% of the respondents. The consumption of bread and bakery products steadily increases in the world (Market Trends 2008; AIBI 2015). The consumption of bread per capita is very diverse in European countries. According to the International Association of Plant Bakeries (AIBI), the highest consumption of bread per capital is reported in Turkey (104 kg) and Bulgaria (95 kg), while the lowest is reported in the UK (approximately 32 kg). In Romania, according to ROMPAN (www.rompan.ro), bread consumption has decreased in the last decade from 92 kg inhabitant<sup>-1</sup> in one year to 82 kg inhabitant<sup>-1</sup> year<sup>-1</sup>, but still remaining above the European average of 78 kg inhabitant<sup>-1</sup> year<sup>-1</sup>. This aspect can also explain the results obtained in the present research, as bread is being ranked first in the categories of products most frequently consumed.

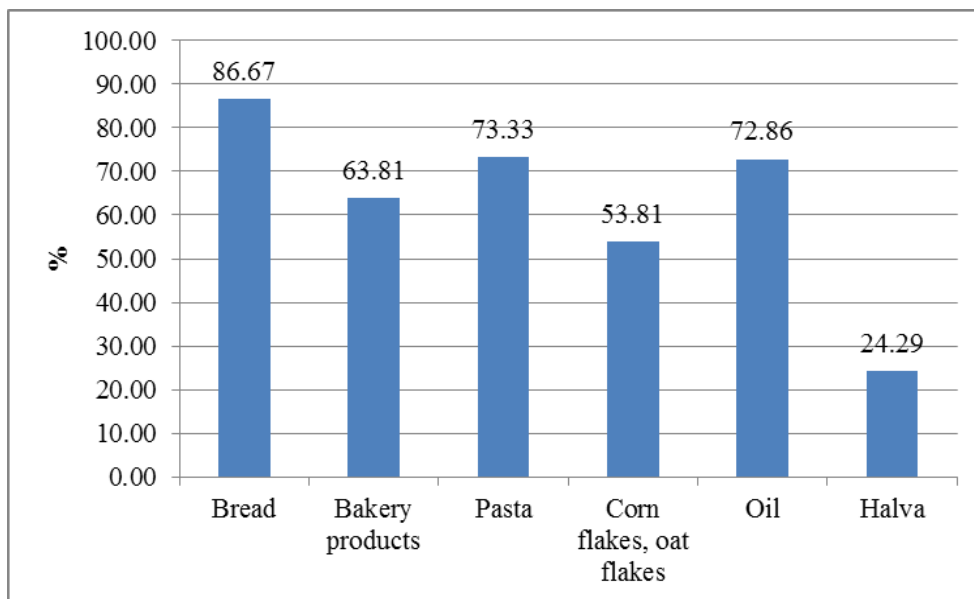


Figure 1. Categories of products most frequently consumed.

By analyzing the raw materials from which the purchased cereal products are obtained, it was found that in 91.9% of cases respondents prefer bakery products obtained from wheat, 54.29% prefer corn products, and 38.10% prefer those obtained from rice (Figure 2). The least consumed products are those obtained from buckwheat (3.81%) and barley (5.71%). The reason why respondents prefer food products obtained from wheat, corn and rice at a higher frequency than those obtained from oat, rye, barley, or buckwheat may include the classic and pleasant taste of the food products obtained from the first mentioned cereals category and the wide range of products that can be obtained from these in relation to cereals that are consumed by a only a low percentage of consumers (Dean et al 2007).

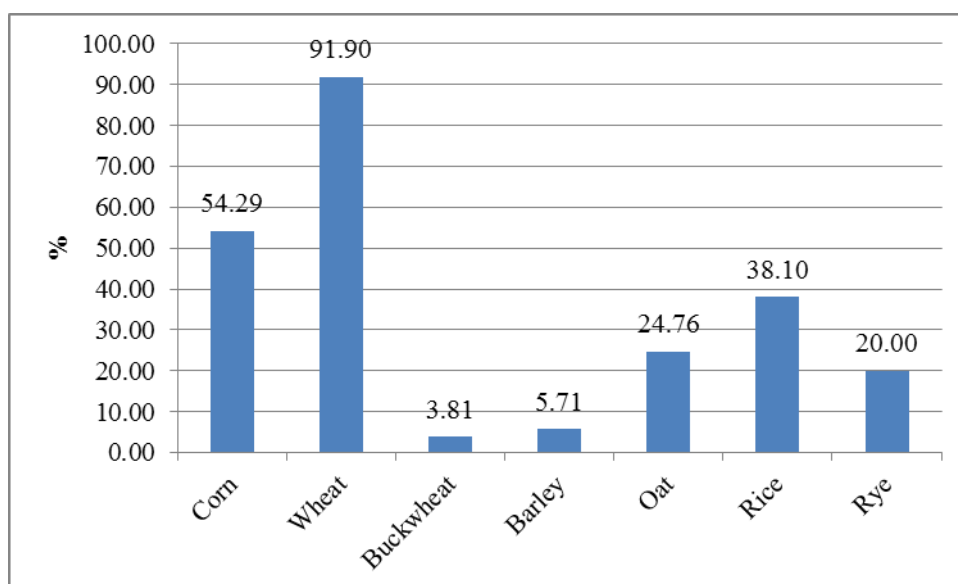


Figure 2. Categories of raw materials from which cereal products are obtained.

By making an inquiry on row oilseed products we note that most frequently consumed oilseeds are those obtained from sunflower (99.05%), and least consumed are those obtained from flax (3.81%). This phenomenon is due to the large share of the sunflower culture in our country. Sesame, flax and rapeseed oils and products, although characterized by a high intake of nutrients with multiple benefits on human health, are consumed less due to respondent's lack of knowledge regarding their benefits (Soare et

al 2014) and possibly due to the higher prices that these products score, compared to those obtained from sunflower (Grunert et al 2001).

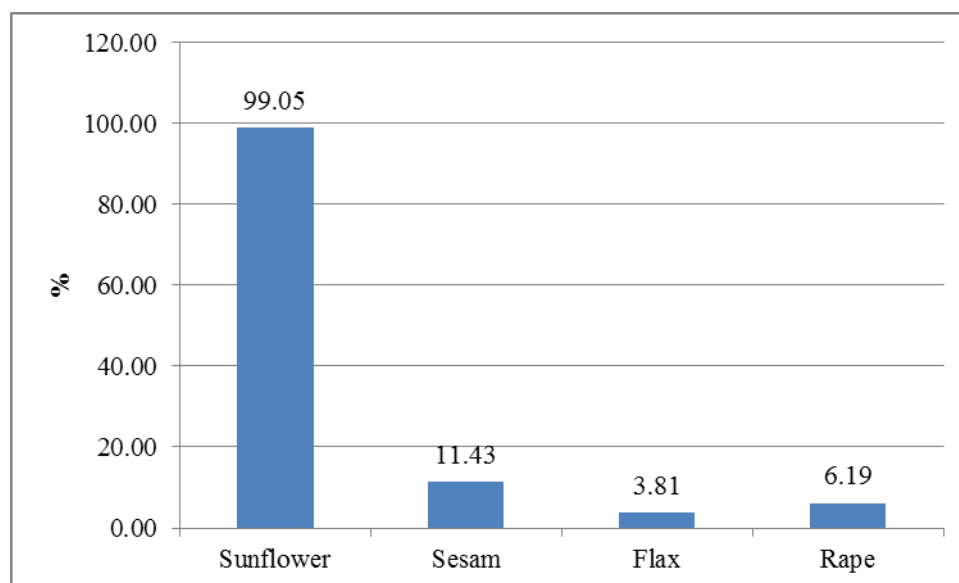


Figure 3 Categories of raw materials from which oil products are obtained.

By analyzing the purchase frequency of cereals and oilseeds, it was observed that 73.68% of the respondents purchase bread on a daily basis, while 20.95% purchase oil daily. Products with a lower purchase frequency are those included in the cornflakes and oatmeal category, 50% of respondents declaring that they purchase this products monthly, while 12.5% of them stating that they purchase these products only several times a year. Regarding halva, 23.41% of the respondents stated that they never purchase this product, while 40% stated that they purchase it on a monthly basis.

Table 2

Purchase/consumption frequency of cereal and oil products

Product type	Daily (%)	Weekly (%)	Monthly (%)	A few times a year (%)	I do not buy (%)
Bread	73.68	24.40	1.44	0.48	0.00
Bakery products	11.59	58.94	24.64	3.86	0.00
Pasta	0.96	51.20	44.98	2.87	0.00
Corn flakes, oat flakes	5.29	30.29	50.00	12.50	0.48
Oil	20.95	31.90	42.86	4.29	0.00
Halva	0.00	9.76	40.00	26.83	23.41

By analyzing the consumption frequency of cereal and oil products depending on the existence of children in the family, it was found that there is a statistically significant difference between the two family groups in terms of consumption of flour based products ( $p < 0.05$ ), respectively, flakes from various cereals ( $p < 0.01$ ). Families with children consume pasta in 57.3% of the cases on a weekly basis, while in the case of families without children the consumption frequency is lower (57.6% of respondents stated that they monthly consume this category of products).

Flakes consumption from different cereals is more common in the case of families with children. From these, 41.5% stated that they consume such products in their families at least on a weekly basis, compared to the group of families without children who consume such products in proportion of 22.8%, on a weekly basis. Consumers easily accept flakes consumption from different cereals, because it consists a nutritionally balanced snack, rich in fiber. Also, due to the fact that they maintain an adequate

balance between energy, fats, vitamins and minerals, flakes are beneficial to the consumer's health (Ryland et al 2010).

Table 3

Consumption frequency of cereal and oilseed products depending on the existence of children in the family

Type of product	Children in the family	Frequency of buying (%)				
		Daily	Weekly	Monthly	A few times year <sup>-1</sup>	I do not buy
Bread	Yes	76.4	22.2	1.4	0.0	0.0
	No	66.7	28.8	3.0	1.5	
		p=0.154				
Bakery products	Yes	14.1	56.3	23.9	4.9	0.7
	No	6.2	64.6	26.2	1.5	1.5
		p=0.301				
Pasta	Yes	0.7	57.3	39.2	2.8	0.0
	No	1.5	37.9	57.6	3.0	0.0
		p=0.036*				
Corn flakes, oat flakes	Yes	4.9	36.6	48.6	8.5	1.4
	No	6.1	16.7	53.00	21.2	3.00
		p=0.008**				
Oil	Yes	22.9	31.3	41.7	4.2	0.0
	No	16.7	33.3	45.5	4.5	0.0
		p=0.778				
Halva	Yes	7.8	14.8	43.5	20.0	13.9
	No	4.6	40.0	26.2	29.2	0.0
		p=0.285				

\*significant at 0.05; \*\* significant at 0.01.

**Conclusions.** The survey conducted in this present study, which includes mostly female subjects, aged between 25-34, married, with children under 18 years old, who graduated from a higher education institution and obtain incomes higher than 956.41 USD month<sup>-1</sup>, emphasizes that respondents usually buy and consume cereal and oil products on a daily basis, of these bread and oil occupying the highest percentages.

**Conflict of interest.** The authors declare no conflict of interest.

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Authors:

Camelia Oroian, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Horticulture, Department of Economics Sciences, 3-5 Mănăştur Street, 400372 Cluj-Napoca, Romania, e-mail: [camellia.oroian@usamvcluj.ro](mailto:camellia.oroian@usamvcluj.ro)

Bianca Moldovan, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Agriculture, Department of Environmental and Plant Protection, 3-5 Mănăştur Street, 400372 Cluj-Napoca, Romania, e-mail: [bianca.bordeanu@usamvcluj.ro](mailto:bianca.bordeanu@usamvcluj.ro)

Iulia Cristina Mureşan, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Horticulture, Department of Economics Sciences, 3-5 Mănăştur Street, 400372 Cluj-Napoca, Romania, e-mail: [iulia.muresan@usamvcluj.ro](mailto:iulia.muresan@usamvcluj.ro)

Ioan Valentin Petrescu-Mag, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Agriculture, 3-5 Calea Mănăştur Street, 400372 Cluj-Napoca, Romania, European Union, e-mail: [zoobiomag2004@yahoo.com](mailto:zoobiomag2004@yahoo.com)

Dragoş Oroian, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Agriculture, Department of Environmental and Plant Protection, 3-5 Mănăştur Street, 400372 Cluj-Napoca, Romania, e-mail: [dragosoro@gmail.com](mailto:dragosoro@gmail.com)

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