

## RURAL-URBAN DIFFERENCES IN MEAT CONSUMPTION IN ROMANIA

Elena Narcisa POGURSCI<sup>1</sup>, Melania MUNTEANU<sup>2</sup>, Carmen Georgeta NICOLAE<sup>1</sup>,  
Monica Paula MARIN<sup>1</sup>, Corina Aurelia ZUGRAVU<sup>3</sup>

<sup>1</sup>University of Agronomic Sciences and Veterinary Medicine of Bucharest,  
59 Marasti Blvd, District 1, Bucharest, Romania

<sup>2</sup>Vasile Goldis Western University of Arad, 94 Revolutiei Blvd, Arad, Romania

<sup>3</sup>University of Medicine and Pharmacy Carol Davila, 37 Dionisie Lupu Street, Bucharest, Romania

Corresponding author email: corina.zugravu@umf.ro

### Abstract

*In the last three decades the perceptions of Romanian consumer's food has evolved quickly in response to socio-economic changes. Because Romania is crossing a transitional phase, both economically and socially, the socio economic status (SES) and the settlement type distribution of population generated particular food consumption patterns. Approximately 45% of Romanian population live in rural areas, most of them being either land owners or growing potential food stuffs around the household. Therefore, the food consumption pattern of the rural population is greatly dependant on the household purchasing power and their own food production capacity. On the other hand, the urban population (approximately 55% of total Romanian population) is strictly dependant on the household purchasing power, which in this case is significantly higher than the rural inhabitants (Gfk, 2016), and on whether they still have relatives living in rural areas and the amount of food they receive from them. The overall aim of this study is to show the factors that may affect consumer's attitude towards quantity and origin of food consumed.*

**Key words:** consumer preferences, food origin, meat consumption, Romania.

### INTRODUCTION

Agriculture is an important branch of the economy in Romania, providing sufficient amounts of food from both animal and plant origin. In our days consumer's choice of food is a more complex matter than producers expecting (Conte, 2014). Consumers are becoming more demanding about the type of food they buy and consume (Corcoran, 2001; Pogurschi, 2009). Even though the consumer behaviour in a "western" style society has changed in relation to the type of food consumed, it still subscribes, to some extent, to the family income levels and food price paradigm. The two before mention factors play a major role in the type of food consumers choose to buy, although we feel that the new era of education through widespread information access could tip the scale towards a more balanced diet even in the ranks of less fortunate population groups. The food group of meat and meat products remains an important part of our nutritional plans. Meat brings proteins and minerals, especially iron, and

offers a wide range of alternatives, some of them low in fat and calories. On the other hand, meat products are more and more popular, but their composition is rarely as nutritious as meat per se.

In Romania, an important part of the population is still rural and food often originates in one's own household production capacities. In the present study, we focused on finding out if any differences can be spotted between meat and meat products consumption in urban versus rural area and if meat intake is in accordance with food pyramid's indications.

### MATERIALS AND METHODS

The food product consumption data has been compiled following the analysis of a questionnaire conducted on a national representative sample of 1495 Romanians in 2014. The survey has been designed to assess the frequency of food consumption over a one year period by inquiring about the type and portion size of food consumed on a daily basis during a week, by means of a validated food

frequency questionnaire. Anthropometric, demographic and socio-economic data has also been collected in relation to the survey respondents. Fresh meat, fresh meat products and processed meat products, were included. We quantified one portion of meat as having 85 g, as stated by many nutritional boards around the world ([http://www.heart.org/What is a serving\\_UCM-301838\\_Article.jsp](http://www.heart.org/What%20is%20a%20serving_UCM-301838_Article.jsp)).

Descriptive statistics, correlative and chi square tests and graphics were carried out by SPSS 13.0, and p for statistical significance was considered below 0.05

## RESULTS AND DISCUSSIONS

Approximately 45% of Romanian population live in rural areas, most of them being either land owners or growing potential food stuffs around the household. Therefore, the food consumption pattern of the rural population is greatly dependant on the household purchasing power and their own food production capacity. On the other hand, the urban population (approximately 55% of total Romanian population) is strictly dependant on the household purchasing power, which in this case is significantly higher than the rural inhabitants (Gfk, 2016), and on whether they still have relatives living in rural areas and the amount of food they receive from them. In Tables 1 and 2 we have summarised the result of the survey, establishing meat consumption by gender, age, settlement type. According to the survey performed, the average total meat consumption (TMC) of the Romanian population, including fresh meat, fresh meat products and processed meat products is situated at 1.010 Kg/week or 54.2 Kg/year. Average distribution of consumption on age and gender is represented in figure 1.

### THE YOUNG ADULT POPULATION GROUP (18-24/25-34)

The results of the meat frequency questionnaire show that the young adult males (18 – 24 years old) from rural areas, register the highest total meat product consumption values (1.324 kg/week) when compared to other groups maybe due to higher caloric requirements and possibly motivated by the nature of the labour they perform.

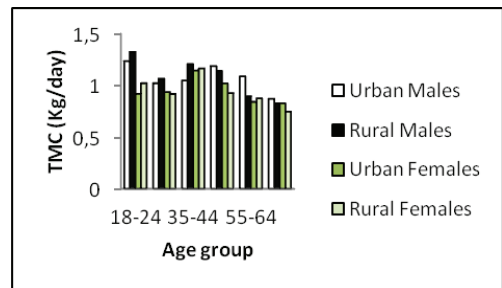


Figure 1. Total meat consumption (TMC) of Romanian males and females from rural and urban areas

The smallest quantity of meat consumption is registered by the females living in the urban areas with values lower than the national average by approximately 10%. Although young adult males (18 – 24) from urban areas consume 20% more meat than the national average this might be an advantage, since at this age males are still growing and have higher protein necessities.

### THE MIDDLE AGED POPULATION GROUP

The total meat consumption of the middle aged population group follows the distribution of the national average, exception from this being registered by the male population from rural areas, with a maximum situated at 1.206 Kg/week, and by the female counterparts from the same habitual environment registering the minimum value with 0.926 Kg/week.

### THE OLDER PEOPLE POPULATION GROUP

The average total meat consumption values for the older population group drop to figures situated well beneath the national average. Consumption pattern partially motivated by the sedentary lifestyle, possible dentition problems and lower total household purchasing power. The nutritional requirements of elderly adults are different than those of young growing individuals or compared to adults that still engage in high energy consuming activities. However, we do not know anything of the quality of meat consumed and might assume that lower meat consumption might be an advantage at this age, since some cheap and popular meat products are frequently a source of unhealthy fats and cholesterol.

Table 1. Meat and meat products consumption profile of males by age and socioeconomic status

Males n = 717		n (%)	Consumption of fresh meat, kg/week (SD)	Consumption of fresh meat products, kg/week (SD)	Consumption of processed meat products, kg/week (SD)
18-24	U	40 (5.57)	0.934 (0.504)	0.195 (0.194)	0.105 (0.077)
	R	45 (6.27)	0.919 (0.479)	0.292 (0.400)	0.113 (0.140)
25-34	U	78 (10.87)	0.779 (0.436)	0.173 (0.222)	0.069 (0.075)
	R	55 (7.67)	0.819 (0.436)	0.179 (0.197)	0.068 (0.066)
35-44	U	79 (11.01)	0.813 (0.467)	0.170 (0.168)	0.065 (0.060)
	R	77 (10.73)	0.989 (0.681)	0.162 (0.182)	0.055 (0.064)
45-54	U	66 (9.20)	0.920 (0.620)	0.199 (0.300)	0.068 (0.066)
	R	43 (5.99)	0.888 (0.501)	0.184 (0.194)	0.069 (0.080)
55-64	U	62 (8.64)	0.850 (1.089)	0.195 (0.330)	0.044 (0.054)
	R	54 (7.53)	0.730 (0.396)	0.130 (0.181)	0.036 (0.045)
65+	U	57 (7.94)	0.716 (0.537)	0.114 (0.176)	0.040 (0.052)
	R	61 (8.50)	0.667 (0.384)	0.129 (0.209)	0.032 (0.046)

Table 2. Meat and meat products consumption profile of females by age and socioeconomic status

Females n = 778		n (%)	Consumption of fresh meat, kg/week (SD)	Consumption of fresh meat products, kg/week (SD)	Consumption of processed meat products, kg/week (SD)
18-24	U	52 (6.68)	0.674 (0.422)	0.137 (0.155)	0.108 (0.138)
	R	29 (3.72)	0.796 (0.343)	0.136 (0.215)	0.089 (0.125)
25-34	U	78 (10.02)	0.771 (0.513)	0.120 (0.154)	0.045 (0.055)
	R	51 (6.55)	0.749 (0.598)	0.117 (0.175)	0.051 (0.060)
35-44	U	74 (9.51)	0.909 (0.665)	0.169 (0.238)	0.065 (0.093)
	R	72 (9.25)	0.937 (0.598)	0.156 (0.196)	0.071 (0.125)
45-54	U	66 (8.48)	0.818 (0.480)	0.156 (0.301)	0.046 (0.071)
	R	45 (5.78)	0.754 (0.477)	0.124 (0.166)	0.048 (0.061)
55-64	U	71 (9.12)	0.702 (0.424)	0.097 (0.169)	0.042 (0.059)
	R	60 (7.71)	0.744 (0.428)	0.099 (0.130)	0.032 (0.041)
65+	U	107 (13.75)	0.687 (0.412)	0.109 (0.225)	0.031 (0.044)
	R	73 (9.38)	0.647 (0.472)	0.081 (0.156)	0.017 (0.027)

Meat and meat products consumption did correlate significantly with gender ( $P < 0.05$ ), probably due to differences in caloric intake between men and women.

This might come as a negative finding, since women have greater needs of iron, than men

and meat is an excellent source of iron. Men eat more meat and meat products in every settlement and every age group.

However, differences in consumption between rural and urban areas were minimal and non-significant.

Men in rural and urban settings eat exactly the same amount of meat per week (fresh meat: 0.835 g), as for women, urban ones eat 0.769 g and rural, 0.771. We expected more meat consumption in urban people, since rural dwellers rely, in theory, mainly on what is produced in the household. Urban/rural differences have been found in other developing or third world countries (Shawel, 2009; Yldirim, 2008). We presume that the absence in differences show an improvement in the economic power in Romanian rural households and it also might be a consequence of subventions offered to farmers, encouraging them to grow more meat animals.

Regarding fresh and processed meat products, again no differences have been found between rural and urban consumers.

With a weekly intake of 0.239 g in rural areas and 0.244 g in urban ones for men, and 0.187 g for urban women and 0.169 g, for rural ones, one can notice that the daily intake of these products is steady, but small.

When converted in daily grams, the average value of meat products consumption is around 30 g, which is the weight of a slice of bologna, salami or a small sausage.

However, the consumption pattern shows that meat products are commonly present in the Romanians daily diets and not an occasional snack. Nutritional value of meat products is generally low, because recipes include always lard or other type of fats, providing too many saturated fats and calories. They also have some preserving ingredients, which are by no means healthy, like high levels of salt and nitrites. The presence of meat products in the daily diet is not a sanogenic habit, but research has shown that consumers know it and limit the intake, in spite of the sensorial attractiveness of this category of foods (Schmid, 2017). In Romania, most of the meat products are industrial ones and only small quantities originate in the household, were they are mainly seasonally produced, like around Christmas. Industrial products have generally a more complex yet unhealthy composition, especially the most popular and cheap ones.

The synchronicity between the indigenous livestock production and the localized meat product industry has suffered greatly during the past 28 transitional years and, at present, the

high volume meat product processing industry is heavily relying on frozen raw materials (frozen meat). From a food technology point of view this is translated in higher levels of additives introduced to the recipes in order to better stabilize the frozen raw materials, as opposed to lower levels of the same additives to be added, if refrigerated raw materials are used instead. The consumption of meat products with high levels of additives would also raise consumer health concerns, if consumption frequency and quantity surpasses certain levels. However, Romanians seem to have low level of consumption.

Summing up meat intake both from fresh meat and from products, the average daily consumption is of 0.153 g, for urban men, 0.154 g for rural men, 0.136 g for urban women and 0.134 g, for rural women. Taking into consideration that the Romanian Nutrition Society's indications of healthy eating, a healthy adult has to eat approximately 2-3 portions of meat, eggs and other protein sources (like beans) per day, in order to acquire the due level of nutrients. Meat remains the best source of iron, and when excluded from diets, iron deficiency might be a health threat. Taking into account the above recommendations and the fact that one portion of lean meat has around 85 g, we notice that all groups of ages, genders and settlements eat below indications. Women, especially, tend to have far lower intake of meat than ideal, the presumed consequences being serious health problems. It is well known that iron deficiency and anaemia are public health topics for certain population groups and especially for women at fertile ages (Coad, 2011). Since vegetarianism is not a popular trend in Romania, we might infer that lower meat intake has nothing to do with on-purpose avoidance of meat, but probably a consequence of poor purchasing power and of low nutritional knowledge.

## LIMITATIONS

Our study is, as far as we know, the most recent one that evaluates directly, by means of a food frequency questionnaire, the meat intake on a representative sample of Romanians. The National Institute of Statistics does similar evaluations, but the method used (Household

Budget Survey) misses frequently products that originate in the household and that do not require special expenses. Our data gives an accurate perspective of meat consumption in all Romanian counties, for rural and urban settlements alike. However, some inaccuracies might be present, since figures have been obtained by interview and not by direct measurements on meat consumption. Food Frequency Questionnaires have, however, been recognised as good tools for food intake evaluation and are used currently in nutrition investigations.

## CONCLUSIONS

Our study concluded that there is no significant difference between meat and meat products consumption in rural and urban areas of Romania. However, the level of meat intake is marginally insufficient especially for women, and this might lead to different nutrition problems, among which iron deficiency is the most common. A better nutrition training of interested groups and subventions for meat industry might correct and prevent in time deficiencies arising from insufficient meat consumption.

## ACKNOWLEDGEMENTS

Data gathering was financed by a private grant from the Centre of Studies on Beer, Bucharest, Romania.

## REFERENCES

- Coad J., Conlon C., 2011. Iron deficiency in women: assessment, causes and consequences. *Curr. Opin. Clin. Nutr. Metab. Care*, 14(6), 625-34
- Yıldırım Ibrahim, Melike Ceylan, 2008. Urban and rural households' fresh chicken meat consumption behaviors in Turkey. *Nutrition & Food Science*, 38(2), 154-163.
- Pogurschi Elena, Marin Monica, Drăgoteiu D., Dumitru M., 2009. Researches regarding the influence of two different vegetables oils upon the fatty acid profile of porks. *Scientific Papers, seria D*, vol. LII, 119-123, ISSN 1224-4295.
- Shawel Betru, Kawashima H., 2009. Pattern and determinants of meat consumption in urban and rural Ethiopia. , article 143.
- Schmid A., Gille D., Piccinali et al., 2017. Factors predicting meat and meat products consumption among middle-aged and elderly people: evidence from a consumer survey in Switzerland. *Food Nutr. Res.*, 61(1), 1308-1311.
- <http://www.gfk.com/insights/press-release/pp-europe>  
[http://www.heart.org/What\\_is\\_a\\_serving\\_UCM-301838\\_Article.jsp](http://www.heart.org/What_is_a_serving_UCM-301838_Article.jsp)



REPRODUCTION,  
PHYSIOLOGY,  
ANATOMY

