

## Summary of PhD thesis

# EXAMINING THE FACTORS INFLUENCING GAME MEAT CONSUMPTION AND PURCHASE IN HUNGARY

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## **1. Introduction and aims of the study**

Wild game meat can be considered a healthy food rich in vitamins and trace elements, which has been consumed by humans since ancient times. It can easily be incorporated into health-conscious diets, as wild animals do not receive veterinary treatment, so their meat is practically free of pharmaceutical residues and antibiotics.

In Hungary, game management has changed over the past fifty years due to changes in the composition of the game population. The previously significant small game management has been pushed into the background, and large game is now much more prevalent. However, the significant increase in large game stocks has not been accompanied by an increase in the amount of game meat consumed by the general public, despite the fact that Hungarian game meat is of excellent quality and the amount of game hunted each year would allow for much more frequent consumption. In Hungary, game meat consumption is only 0.4 kg per capita per year, which is extremely low by international standards. From a nutritional and economic point of view, it would be desirable to further increase the share of game meat in the domestic food chain. Current national legislation

allows for the trade of a specified quantity of hunted game as a basic product, but the largest quantity leaves the country through game meat dealers in the form of fur/skin or in basic processed form and is further processed and consumed in other member states of the European Union.

In order for a product group to attract greater consumer interest, it is necessary to understand the needs of the population and the information relating to the product. Consumer surveys provide a detailed analysis of consumer habits, which can be used to determine the conditions for economical production. It has been nearly a decade since the last comprehensive study was published in Hungary on the quantity and frequency of game meat consumption and preferences for game meat types, so providing new data on domestic game meat consumption and purchasing habits can help in preparing measures aimed at increasing game meat consumption among the population.

The fundamental objective of my research is to examine the determining factors of game meat consumption and purchasing habits in Hungary, with particular regard to socio-demographic differences.

Within this framework, I sought answers to the following research questions:

- How much game meat does the Hungarian population consume?
- What is the reason for the low level of game meat consumption?
- If they consume game, why do they choose to consume game meat?
- What are the most popular types of game meat?
- If they consume game, when, where, and who purchases and consumes it?
- How do sociodemographic factors (sex, age, place of residence, income, education) affect game meat consumption and purchasing?
- How do animal keeping, as well as the perceived importance of nature conservation, affect game meat consumption and purchasing?

## **2. Summary of the results**

The large-scale questionnaire survey (n = 1002) was conducted through personal interviews between August 31, 2020, and October 31, 2020. Data collection was carried out by interviewers in all official regions of the country. Based on the sample size, it is comparable to other relevant studies examining consumer behavior in this field. The questionnaire included both open-ended and closed-ended questions. In most cases, the closed-ended questions were evaluated on a 5-point Likert scale. After the questions related to game meat consumption, the questionnaire included questions on socio-demographic data, as well as one question each on animal husbandry practices and nature conservation.

Based on 2020 data of the Hungarian Central Statistical Office, the data collection was nationally representative in terms of age, gender, and geographical distribution.

### **2.1. Frequency of game meat consumption and preference for different game species**

In our survey, only one in ten of the 1,002 respondents had never eaten game meat. Based on the responses of the others, the average per capita consumption of game

meat was 2.63 kg/year. This amount corresponds to less than 4% of the meat consumption per person (71.6 kg/person/year in 2021, the year of the questionnaire survey; HCSO, 2025).

68.0% of respondents consumed less than 1 kg of game meat per year. Of the game meats listed, more than 50% of respondents said they had consumed four species. Nearly three-quarters of respondents (74.3%) had eaten red deer, and more than half had eaten wild boar (69.0%), roe deer (63.0%), and pheasant (57.7%).

Based on the responses, winter and the winter holidays are the peak season for consumption, with 40.9% of game meat consumers eating game at this time, followed by autumn (31.1%), summer (17.0%), and spring (11.1%).

## **2.2. Factors influencing game meat consumption**

According to respondents, the greatest advantage of game meat is that it is free of antibiotics and drug residues (Likert 4.1), followed by low fat content, excellent protein levels (Likert 4.0) and overall "healthiness" (Likert 3.9).

There are two main reasons for consuming small amounts of game meat or rejecting it altogether: high price (Likert 3.2) and limited availability (Likert 3.2). Other significant

reasons include respondents' dislike of game meat (Likert 2.8), rejection of its consumption for emotional reasons (Likert 2.5), and its variable, unpredictable, and inadequate quality (Likert 2.2).

### **2.3. The impact of socio-demographic factors on game meat purchases**

Nearly half of respondents (48.6%) stated that they do not purchase or obtain game meat, while 51.4% stated that they do. The majority of consumers purchased game in the form of fresh meat, frozen meat, or processed meat products (e.g., ham, sausage, salami). Significantly more women (55.8%) than men ( $p < 0.0001$ ) reported that they do not purchase or obtain game meat.

Significantly more people living in the capital reported that they did not buy game meat than those living in other cities or villages. A higher proportion of the latter purchased fresh game meat. The frequency of purchasing fresh game meat was directly related to income level: those with higher incomes purchased more game meat. More people with a university or college degree (24.8%) bought frozen game meat than those with basic/vocational training (19.6%) or a high school diploma (16.9%) ( $p < 0.05$ ).

Respondents who purchase food daily (40.3%) were significantly ( $p < 0.05$ ) less likely to purchase game meat than those who purchased it rarely (51.6%), several times a week (50.7%), or a few times a month (51.9%). Those who purchased food daily were more likely (2.1%) to purchase game meat in the form of frozen ready meals.

Respondents who did not keep any animals or only kept companion animals were significantly less likely ( $p < 0.05$ ) to purchase game meat than those who kept farm animals or both companion and farm animals.

#### **2.4. Where game meat is purchased**

More than half of respondents (51.4%) stated that they purchase game meat or receive it as a gift. Most often, they received it as a gift from hunters or obtained it directly during hunting, including those who were hunters themselves. Significantly ( $p < 0.01$ ) more men received game meat directly from hunters ( $p < 0.0001$ ) or were hunters themselves (25.2%). Significantly more men than women purchased game meat in butcher shops (21.4%), hypermarkets (15.2%), or markets (14.8%). With increasing age, significantly fewer ( $p < 0.0001$ ) respondents over the age of 60 reported obtaining game meat from hunters or being hunters themselves (12.4%).

Respondents with above-average incomes were significantly more likely ( $p < 0.01$ ) to obtain game meat from hunters or to be hunters themselves. Those with average incomes were significantly more likely ( $p < 0.05$ ) to purchase game meat in butcher shops or hypermarkets. In hypermarkets, supermarkets, and discount stores, people with a university or college degree were significantly ( $p < 0.05$ ) more likely to buy game meat (14.2%) than those with primary education (5.4%) or secondary education (10.9%). Households with children under the age of 15 were also significantly more likely to purchase game meat from markets or online than those without children ( $p < 0.05$ ).

## **2.5. Assessment of game meat prices**

37.0% of respondents ( $n = 990$ ) were unable to determine the price of game meat, while 63.0% ( $n = 624$ ) were able to do so. Nearly 80.0% of those who assessed the price considered it expensive or very expensive. Significantly more women than men considered game meat to be expensive or very expensive. None of the age groups, respondents' place of residence, income status, frequency of food purchases, or animal husbandry habits

had a significant influence on their opinion of the price of game meat.

## **2.6. The importance of domestic origin when purchasing game meat**

36.6% of respondents (n = 953) did not consider the domestic origin of game meat to be important, but 63.4% (n = 604) considered it to be important. More than half of the respondents considered the domestic origin of game meat to be a very important factor. Our survey shows that the domestic origin of game meat is an important factor for many consumers, especially older consumers (aged 40-59). In our study, rural residents (63.7%) were more likely to attach great importance to the Hungarian origin of game meat than urban residents (Budapest 55.7%; other cities 51.7%). This may be consistent with the fact that rural residents have a closer connection to nature and consider environmental protection to be important.

## **2.7. Frequency of purchasing game meat for cooking purposes**

73.2% of respondents (n = 1002) did not purchase game meat for cooking purposes at all, and only 8.6% purchased it five or more times a year.

Respondents who purchased game meat daily (50.8%) or several times a week (39.1%) were significantly more likely ( $p < 0.01$ ) to purchase game meat for cooking purposes than those who purchased it only a few times a month (32.8%), less frequently (32.3%), or practically never (16.7%).

### **3. New scientific results**

1. The average annual consumption of game meat is 2.63 kg/person, which is less than 4% of total meat consumption.

2. More than half of the respondents have eaten red deer (74.3%), wild boar (67.0%), roe deer (63.0%), and pheasant (57.7%).

3. Nearly half of Hungarian consumers (48.6%) do not buy game meat, and among them, there are significantly ( $p < 0.0001$ ) more women (55.8%). A significantly higher proportion ( $p < 0.05$ ) of Budapest residents do not buy game meat (55.6%) than those living in other parts of Hungary (41.7-47.0%).

4. Hungarian consumers who keep companion or farm animals receive significantly ( $p < 0.0001$ ) more game meat as gifts or hunt themselves than those who do not keep any animals.

5. Hungarian consumers who do shopping daily purchase game meat less frequently, but they buy frozen processed meals made from game (2.1%) significantly ( $p < 0.05$ ) more often than those who buy less frequently.

6. Significantly ( $p < 0.01$  and  $p < 0.0001$ ) more men (25.2%) purchase game meat directly from hunters or

butchers than women (21.4%). A significantly higher proportion ( $p < 0.01$ ) of Hungarian consumers with higher incomes hunt or obtain game meat from hunters (28%).

7. Nearly two-thirds of respondents (63.4%) consider the domestic origin of game meat to be important, especially for those aged 40-59, men, those with higher education, and consumers who consider environmental protection important.

#### **4. Publications related to the topic of the dissertation**

##### ***4.1. Publications in peer-reviewed scientific journals with impact factor***

**Gyurcsó A.**, Kasza Gy., Szakos D., Máté M., Ózsvári L. (2025) Game meat purchasing frequency and influencing factors – Findings of a representative consumer study from Hungary. *Acta Alimentaria Hungarica* 54(4): 671-684. <https://doi.org/10.1556/066.2025.00190>

Kasza Gy., **Gyurcsó A.**, Lámfalusy T., Szakos D., Ózsvári L. (2025) Game meat consumption – Frequency, quantity, preferences of venison and consumer clusters in Hungary. *Heliyon* (under review)

Zorkóczy O., **Gyurcsó A.**, Ózsvári L., Lehotzky P., Ravindranathan S., Zenke P. (2025) Development of a Loop-Mediated Amplification Technique for Sex Detection in Cervidae Species. *Mammalian Biology* (2025) 105:113-121 <https://doi.org/10.1007/s42991-024-00457-9>

**Gyurcsó A.**, Kasza Gy., Ózsvári L. (2023) Az illegális vadászat elleni jogi szabályozás és a vadvédelem története Magyarországon – Irodalmi áttekintés esettanulmányokkal. *Magyar Állatorvosok Lapja* 145(5):297-308.

**Gyurcsó A.**, Kasza Gy., Ózsvári L. (2022) A vadhús közfogyasztásának története és élelmiszerlánc-biztonsági előírásai Magyarországon – Irodalmi áttekintés. *Magyar Állatorvosok Lapja* 144: 623-639.

Battay M., Lehotzky P., **Gyurcsó A.**, Bleier N., Csirke L., Illés B., Ózsvári L. (2020) Kárcsökkentési lehetőségek az afrikai sertéspestis elleni védekezésben, *Magyar Állatorvosok Lapja* 142(6): 377-384.

Lehel J., Laczay P., **Gyurcsó A.**, Jánoska F., Majoros Sz., Lányi K., Marosán M. (2016) Toxic heavy metals in the muscle of roe deer (*Capreolus capreolus*) – food toxicological significance. *Environmental Science and Pollution* 23:4465-4472. <https://doi.org/10.1007/s11356-015-5658-1>

#### ***4.2. Publications in peer-reviewed scientific journals without impact factor***

**Gyurcsó A.** (2021) Az orvvadász nem vadász, hanem bűnöző. *Nimród Vadászújság online* 2021. 11. 14. <https://nimrod.hu/hirek/azorvvadasz>

**Gyurcsó A.** (2021) A nyomon követhetőség, valamint az élelmiszerlánc-biztonsági feltételek biztosítása a közfogyasztásra szánt elejtett vadnál (tárolás

vadbegyűjtő helyen, szállítás) Magyar Vadgazdálkodók Egyesületének országos tájékoztató kiadványa

#### **4.3. *Proceedings at Hungarian conferences***

**Gyurcsó A.**: A vadbegyűjtő helyek létesítésének és üzemeltetésének feltételei Magyarországon a jogszabályváltozás tükrében. A hazai vadegészségügy és vadgazdálkodás aktuális kérdései konferencia – *Konferenciakiadvány (2025)* ISBN 978-963-7149-49-8., online kiadvány ISBN 978-963-7149-50-4. és előadás Budapest, Magyarország Állatorvostudományi Egyetem 2025. április 3.

**Gyurcsó A.**, Kasza Gy., Ózsvári L.: Az orrvadászat elleni jogi szabályozás és a vadvédelem története hazánkban. A hazai vadegészségügy és vadgazdálkodás aktuális kérdései konferencia Budapest, Magyarország Állatorvostudományi Egyetem 2023. március 30.

#### **4.4. *Other scientific publications***

Farkas, R. & **Gyurcsó A.** (2006) Mit tudunk a kutyák fülét támadó legyekről? Magyar Állatorvosok Lapja 128:222-226.

Farkas, R., **Gyurcsó, A.**, Börzsönyi L. (2003) Fly larvicidae activity in the faeces of cattle and pigs treated

whit endectocide products. Medical and Veterinary  
Entomology 17: 301-306.