

DEMOGRAPHIC CHARACTERIZATION AND CONSUMPTION HABITS OF PORTUGUESE HUNTERS

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Abstract

Hunting is the most popular rural activity in Portugal. Currently, the number of licensed hunters in Portugal is around 115 000, preferentially hunting large game, particularly wild boar. The objective of this study is the demographic characterization of the hunters who consume game meat. In an ongoing anonymous survey of hunters on 'wild boar consumption habits', were raised questions about personal demographic data (age, gender, scholar level, and residency) and wild boars' meat self-consume, such as the number of hunted animals per season and their self-consume and if, they consume it undercooked or make traditional products, as sausages. Of the 206 hunters from all over Portugal who responded to the survey, the majority are males aged between 31 and 50 years ($n = 106$; 51.5%) and practice self-consumption of wild boar meat they hunt (average wild boar hunted per hunting season is 4). 177 do not make traditional products based on raw game meat (86%), nor do they consume it undercooked. Knowing these data is important to understand the attributable risk of self-consuming game meat and the perception of hunters about this.

Key words: game meat, social data, wild boar, zoonoses.

INTRODUCTION

Hunting is the most popular rural activity in Portugal. Currently, the number of licensed hunters in Portugal is around 115000, preferentially hunting large game, particularly wild boar (*Sus scrofa*).

Meat from larger game species, such as wild boar, is increasingly consumed and recognized for its sustainable character. In the eyes of hunters and society, this is meat that animals are not raised for consumption; therefore, until they are hunted, they live outdoors with no anthropogenic pressure to grow and not use products (Bruinderink et al., 1994). Thus, together with its flavour and sensory quality, game meat is increasingly consumed throughout Europe (Lizana et al., 2022).

In Portugal, particularly, hunters who hunt in associative hunting areas have the habit of self-consumption of the game they hunt. This is a habit that, despite being healthy, can put people who consume meat at risk. As is known, the state of health of wild animals that are hunted is unknown, and as such, self-consumption poses risks to the consumer since meat and its by-products are not subject to prior inspection (Lizana et al., 2022; Vieira-Pinto et al., 2021).

The risk of exposure to zoonotic foodborne pathogens is high when there is no official inspection in a slaughterhouse or a game-handling establishment. Worse still, most of these hunters self-consume the meat without even the initial examination being done (Abrantes et al., 2023). Although the initial examination (internal and external evaluation of the carcass by a trained person) is not an official inspection, it is a crucial step to ensure on-spot food safety, even before the hunted animals' carcasses are transported to the hunters' homes, are eviscerated, and dismantled by those who do not know how to recognize injuries compatible with infectious diseases dangerous to human health (Abrantes & Vieira-Pinto, 2023).

It is known that the most significant risk is related to the consumption of raw or undercooked meat and, for example, edible viscera such as the liver. In Portugal, it is common to transform wild boar meat into derived products, such as sausages and other traditional products. These are mostly consumed raw after drying or smoking processes. But, despite being traditional processes for preserving meat products, they do not inactivate the majority of potentially zoonotic infectious agents for consumers (Vieira-Pinto et al., 2021).

The objective of this study was to characterize the demographic of Portuguese hunters who self-consume large game meat, especially wild boar meat and derived products.

MATERIALS AND METHODS

An ongoing anonymous survey of Portuguese hunters was placed about demographic data, hunting handling practices and wild boar's meat consumption habits during the hunting seasons 2020/2021 and 2021/2022. The survey was distributed randomly during the driven hunts, and all hunters filled it out willingly. Informed consent was obtained from all hunters.

The first part of the survey raised questions about demographic data: age, gender, scholar level, and local residency.

Then the second part is about the wild boars' meat self-consume: the number of hunted animals per season, their self-consume and if, they consume it undercooked or make traditional products, such as sausages.

RESULTS AND DISCUSSIONS

Two hundred and six hunters ($n = 206$) from all over Portugal (randomly hunters from north to the south of Portugal) responded to the survey entitled "Self-consumption of game meat and hygiene practices".

Of the respondents aged between 18 and 70 years, the majority were males aged between 31 and 50 ($n = 106$; 51.5%). These results are indicative of what most of the literature states, that the population of hunters is made up mostly of males, and the age bar is high. However, in our study, we see a large majority (51.5%) in middle ages (31 to 50 years), but this may not be very objective since to answer the survey, it was necessary to read and write, and young hunters are more receptive to answering in these cases. Regarding the place of residence (in relation to the structure of Portugal), the North of the country is represented in the majority with more than 140 hunters who answered the survey (approximately 68%).

More than 95% of the respondents practice self-consumption of wild boar meat they hunt without prior initial examination or inspection in a slaughterhouse or a game-handling establishment. In the answers to the survey, the

average of wild boar hunted per hunting season is 4.

These results are expected since the north of the country is an area where it is not mandatory to carry out an initial examination on-spot in the collection points. Therefore, hunters in that area are not very aware of the need to carry out an initial examination prior to your safety.

Despite self-consuming game meat without prior initial examination, 177 hunters responded (86%) that they do not make traditional products based on raw game meat (86%) or consume it undercooked. Consumption of edible viscera, such as liver, is also avoided, according to the responses of these hunters (Figure 1).

The northern part of the country, which has more hunters and those of advanced Mayan age, is also the one where I least often have to resort to the initial examination, it is the one that most self-consumes wild boar meat and that traditionally transforms it into derivative products, such as sausages. The risk in this population is increased, since, as previously mentioned, the risk of consuming wild boar meat without a health check by a veterinarian, or by a trained person, is high (Lizana et al., 2022). Diseases such as trichinellosis, hepatitis E, salmonellosis or yersiniosis are described in the literature as foodborne diseases to be taken into account when it comes to game meat (Gomes-Neves et al., 2021). If consumed raw or undercooked, it is even more dangerous. There are several records of people who consumed game meat and derivative products and were later diagnosed with diseases such as hepatitis E or trichinellosis. Trichinellosis is more related to meat, and hepatitis E is more related to the consumption of liver, since the consumption of these raw or undercooked products is the main cause of human infection (Sgroi et al., 2023; Vieira-Pinto et al., 2021).

The hunters reveal a great ignorance of the risk they run. Their lack of risk perception and poor hygiene, handling and consumption of game meat are alarming (Abrantes et al., 2023; Lizana et al., 2022).

Improper consumption without hygiene care and to preserve food safety and consequently reduce the risk inherent in the consumption of uncontrolled meat must be minimized and hunters must be alerted to the bad practices they commit.



Figure 1. Scheme of self-consumption and main consumption habits of wild boar meat in Portugal

CONCLUSIONS

Knowing these data is essential to understand the attributable risk of self-consuming game meat and the perception of hunters about this.

It is evident that the initial examination is an excellent tool for prevention and plays an essential role in food security and the very health of hunters. Also, this survey revealed that many of them are interested in knowing more and learning, and even transforming themselves into trained people with authorization to carry out the initial examination in areas where it is not mandatory for a veterinarian to perform the initial examination, as provided for in the Reg. (EU) 853/2004, that lays down specific rules on hygiene of food of animal origin (Bonardi et al., 2021; Ranucci et al., 2021).

It is necessary to continue to inform stakeholders, especially hunters. Since prevention is better than cure, this motto must take into account new measures for training hunters and preventing the transmission of zoonoses transmitted by the consumption of meat that is not sanitary controlled (Orsoni et al., 2020).

Cooperation and reaching a consensus between academia, health and hunting regulatory authorities, hunters and all interested parties is extremely important and necessary.

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