THE ATTITUDES OF SERBIAN CONSUMERS TOWARDS CULTURED MEAT

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I. INTRODUCTION

Cultured meat, also known as lab-grown, cell-cultured, or in-vitro meat, represents a pioneering frontier in food technology aimed at producing meat products directly from animal cells without the need to raise and slaughter animals. The concept was first introduced in the early 2000s, with significant scientific interest sparked by the potential for reducing the environmental impact and ethical concerns associated with traditional animal farming [1]. Efforts are being made aiming, not only to scale up production and improve the texture and taste of cultured meat products, but also to make them cost-competitive with conventional meat by streamlining the manufacturing processes and sourcing more efficient growth mediums. As of the early 2020s, several products have approached regulatory approval stages in different countries, promising a future where cultured meat might become a common feature in supermarkets and restaurants worldwide, offering a sustainable alternative to traditional meat production [2]. The aim of this research was to reveal, for the first time, the attitudes of Serbian consumers toward cultured meat.

II. MATERIALS AND METHODS

The survey was conducted during 2024 through an online questionnaire directed at 450 consumers of the Republic of Serbia. The consumers were selected as previously described in Tomasevic et al [3] and collected as explained in Miloradovic et al [4]. Only the fully answered questionnaires (414) were considered for data analysis. A questionnaire containing two parts was developed to investigate consumer's attitudes towards cultured meat. The first part was about the main demographic characteristics of participants including sex, age, education, place of living and household incomes. The second part consisted of questions regarding their opinions and beliefs towards cultured meat. Because the data depicted here are only preliminary results of a much larger survey involving consumers from other countries, we have used only descriptive statistics for their presentation in this short manuscript.

III. RESULTS AND DISCUSSION

Out of 414 respondents, 59.4% were females, 39.1% were males and 1.4% preferred not to reveal their gender. All of consumers had some kind of educational background while majority of consumers (more than 60%) were highly educated, holding an university degree. Most of them (65%) were living in urban areas with more then 100,000 inhabitants, while a minority of 55 respondents (13.3%) lived in rural areas. Almost half of the consumers (43.7%) considered that

they are living well, but can only set a little money aside, while only 6.1% regularly or sometimes had difficulties in meeting daily costs in their households. More than 43% of the Serbian consumers had completely negative, while only 7% of them had completely positive attitudes towards cultured meat. The majority of Serbian consumers (288 or 65.3%) believed that cultured meat is also called "artificial meat" and 237 of them (53.7%), that it contains protein of animal origin. Very few (5%) believed that it contains only plant-based ingredients or that it is completely plant-based (3.8%). If they would have the opportunity to eat cultured meat, 37% of the Serbian consumers would do so because of curiosity. This is similar to the situation in Germany (38%) [6] or in Belgium (39.3%) [7]. but much less welcoming compared to Brazil, where over 85% of the consumers were curious enough to do the same [8]. When it comes to motivation for eating cultured meat, Serbian consumers mostly mentioned environmental reasons (12.6%), animal welfare reasons (12.5%), reason to reduce meat consumption (9.7%), health reasons (3.9%) and other causes. When asked if cultured meat meets people's nutritional needs, more than 42% of the Serbian consumers did not know, 16% thought it lacked some and another 16%, it lacked several important nutrients, while only 5.6% thought it was somewhat or much richer in nutrients compared to conventional meat. IV. CONCLUSION

Consumer acceptance of cultured meat in a Serbian market is a complex and evolving issue, influenced by a variety of factors including health perceptions, ethical consideration and other issues. While the idea of meat grown from cells in a lab might initially seem off-putting to some,key motivators for acceptance include the potential for cultured meat to reduce the environmental footprint of meat production and diminish animal suffering. However, regarding Serbian consumers big challenges still remain, such as overcoming the "yuck" factor associated with lab-grown foods, addressing concerns about naturalness and processing, and ensuring that the products meet expectations for nutritional requirements.

REFERENCES

- 1. Yap, W. S.; Choudhury; D.; Suntornnond, R. (2023). Towards biomanufacturing of cultured meat. Trends in Biotechnology, 41(3): 292-294.
- 2. Ye, Y., Zhou; J., Guan; X.; Sun, X. (2022). Commercialization of cultured meat products: Current status, challenges, and strategic prospects. Future Foods, 6: 100177.
- 3. Tomasevic, I.; Novakovic, S.; Solowiej, B.; Zdolec, N.; Skunca, D.; Krocko, M.; Djekic, I. (2018). Consumers' perceptions, attitudes and perceived quality of game meat in ten European countries. Meat Science, 142: 5-13.
- 4. Miloradovic, Z.; Blazic; M.; Barukcic I.; Font i Furnols M.; Smigic N.; Tomasevic I.; Miocinovic, J. (2022). Serbian, Croatian and Spanish consumers' beliefs towards artisan cheese. British Food Journal, 124(10): 3257-3273.
- 5. Weinrich, R.; Strack, M.; Neugebauer, F. (2020). Consumer acceptance of cultured meat in Germany. Meat Science, 162: 107924.
- Verbeke, W.; Hung, Y.; Baum, C. M.; De Steur, H. (2021). The power of initial perceived barriers versus motives shaping consumers' willingness to eat cultured meat as a substitute for conventional meat. Livestock Science, 253: 104705.
- Gómez-Luciano, C. A.; de Aguiar, L. K.; Vriesekoop, F.; Urbano, B. (2019). Consumers' willingness to purchase three alternatives to meat proteins in the United Kingdom, Spain, Brazil and the Dominican Republic. Food Quality and Preference, 78: 103732.