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LATEST NEWS

Will "cultured meat" transform our food system towards more sustainability?

Decreasing meat consumption and production is often presented as a mean to reduce the environmental impact of human diets. This drives research and innovation towards the development of alternative products, among which cell-based proteins or "Cultured meat". A group of French researchers (J.F. Hocquette, S. Chriki, and M.P. Ellies-Oury) asked whether this product could contribute to a more sustainable food system. The main points of their review article are summarized below.

Although there is a consensus on the challenges of agriculture, food, and the environment (feeding the world while producing safe and high-quality food and protecting the planet and farm animals), the innovations developed to respond to these challenges are diverse. Among these, cell-based food is a hot topic that raises technical, social, ethical, regulatory, and commercial issues. So far, only a few companies have received approval to commercialise what is called "cultured meat" in Singapore, the USA, and Israel. While the culture of muscle cells is well-known, many technical and economic obstacles remain to be solved to move to large-scale production of any meat-like product. Although the cost is decreasing, it is still high to be competitive. Academics are asking for precise research data to be shared for transparency, particularly regarding the safety, composition, nutritional value, and sensory quality of the product. It should not be called "meat" from a biological, semantic, and legal point of view, which is confirmed by the opinions of the majority of consumers surveyed. Academic research is scarce or inconclusive and generally contradictory regarding product characteristics and sustainability. The issue of animal welfare is also central and potential acceptance of cell-based food by consumers, which is difficult to predict. In short, cell-based food raises many debates and controversies. The technical aspects are the least difficult to deal with, as they are easy to check. To become a credible alternative, cell-based food must offer a real and proven added value over meat. This is not (yet) the case, and investments have decreased in 2023. Cell-based food is, therefore, at a crossroads with several possible scenarios. One scenario would be the failure of its development due to unfulfilled promises by private companies and a lack of support from public authorities, investors, and consumers. Another scenario is the opposite, based on increasing investment, spectacular technological progress, and support from governments, safety authorities, and consumers. In this scenario, only positively perceived livestock farming would remain to produce luxury meat. Likely,

cultural factors (such as the culinary history of each country) will play a major role. In addition, the likely limited market penetration of cell-based food would be anyway a major obstacle to solving the current ethical and environmental problems in our food system. There is also a lack of research on any new sustainable model related to cell-based food industry development to tackle the various sustainable development goals. The different dimensions of sustainability are rarely analysed together and compared to current and, more importantly, to future livestock farming systems. There is a need to address and combine environmental, health, social, economic, and legal issues.

Further information can be found in a recent publication
https://doi.org/10.1016/j.animal.2024.101145,
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