

Lab Grown Meat or Artificial Meat to Avoid Slaughter, Animal Welfare Issues, Disease Development

Yasuyuki Katsura*

Department of Biochemistry, Shiga General Hospital, Moriyama, Japan

INTRODUCTION

While modern humans have been around for 160,000 years or so, agriculture only developed about 10,000 years ago, probably helping the human population to grow. A stable food source had tremendous impact on the development of our species and culture, as the time and effort once put towards foraging could now be put towards intellectual achievement and the development of our civilization [1,2].

In recent history though, agricultural technology has developed with the goal of securing food supply. We have been using greenhouses to control the environment where crops grow. We use pesticides, fertilizers and genetic techniques to control and optimize output. We have created efficiencies in plant cultivation to produce more plants that yield more food than ever before [3,4].

These patterns in horticulture can be seen in animal husbandry too. From hunting to raising animals for slaughter and from factory farming to the use of antibiotics, hormones and genetic techniques, meat production today is so efficient that we grow bigger animals faster than ever before. In 2012, the global herd has reached 60 billion land animals to feed 7 billion people [5,6].

Now, civilization has come to a point where we are recognizing that there are serious problems with the way we produce food. This mass produced food contributes towards our disease burden, and plays a major role in deforestation and loss of biodiversity. For meat production, in particular, manipulating animals has led to an epidemic of viruses, resistant bacteria and food-borne illness, apart from animal welfare issues.

But we may be seeing change brought by consumer demand. The public has started caring about the ethical, environmental and health impacts of food production. And beyond consumer demand for thoughtful products, ecological limits are forcing us to evaluate the way food is produced.

Making everyone on the planet take up vegetarianism is not an option. While there is much merit to reducing meat consumption, sustainable dietary changes in the Western world will be more than compensated for by the meat intake of the growing middle class in developing countries like China and India.

By doing this we avoid slaughter, animal welfare issues, disease development. This method, if commercialized, is also more sustainable. Animals do not have to be raised from birth, and no resources are shunted towards non-meat tissues. Compared to conventionally grown meat, cultured meat would require up to 99% less land, 96% less water, 45% less energy, and produce up to 96% less greenhouse gas emissions [7,8].

CONCLUSION

Also even without modern scientific tools, for hundreds of years we have been using bacterial cells, yeast and fungus for food purposes. With recent advances in tissue engineering, culturing mammalian cells for meat production seems like a sensible advancement.

Efficiency has been the primary driver of agricultural developments in the past. Now, it should be health, environment and ethics. We need for cultured meat to go beyond the proof of concept. We need it to be on supermarket shelves soon.

REFERENCES

1. Tobler C, Visschers VHM, Siegrist M. Eating green. Consumers' willingness to adopt ecological food consumption behaviors. *Appetite* 2011;57:674-682.
2. Willett W, Rockstrom J, Loken B, Springmann M, Lang T, Vermeulen S, et al. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. *Lancet* 2019;393:447-492.
3. Scollan ND, Greenwood PL, Newbold CJ, Yanez Ruiz DR, Shingfield KJ, Wallace RJ, et al. Future research priorities for animal production in a changing world. *Anim Prod Sci* 2011; 51:1-5.
4. Ryschawy J, Dumont B, Therond O, Donnars C, Hendrickson J, Benoit M, et al. Review: an integrated graphical tool for analysing impacts and services provided by livestock farming. *Animal* 2019;13:1760-1772.
5. Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, de Haan C. *Livestock's Long Shadow* 2006.
6. Aleksandrowicz L, Green R, Joy EJM, Smith P, Haines A. The impacts of dietary change on greenhouse gas emissions, land use, water use, and health: a systematic review. *PLoS ONE* 2016;11.

*Correspondence to: Dr. Yasuyuki Katsura, Department of Biochemistry, Shiga General Hospital, Moriyama, Japan, E-mail: ykatsura@mdc.med.shiga-pref.jp

Received: August 06, 2021; Accepted: August 20, 2021; Published: August 27, 2021

Citation: Yasuyuki K (2021) Lab Grown Meat or Artificial Meat to Avoid Slaughter, Animal Welfare Issues, Disease Development. *J Microb Biochem Technol*. 13:484. DOI: 10.35248/1948-5948.21.13.484.

Copyright: © 2021 Yasuyuki K. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

7. Oliver SP, Murinda SE, Jayarao BM. Impact of antibiotic use in adult dairy cows on antimicrobial resistance of veterinary and human pathogens: a comprehensive review. *Foodborne Pathog Dis* 2011 8:337-355.
8. Gerber PJ, Mottet A, Opio CI, Falcucci A, Teillard F. Environmental impacts of beef production: review of challenges and perspectives for durability. *Meat Sci* 2015;109:2-12.