In Vitro Meat: Could We Be a Culture of Cultured Meat?

Test-tube meat, cultured meat, and in vitro meat are among the many names used to label meat that is grown in laboratories. In basic terms, it can be defined as the growing of animal muscle tissue within a lab setting. In her essay "Meat and Mortality: Alternatives to Factory Farming," Dr. Evelyn Pluhara, professor of moral philosophy, describes the process as being one that “…calls for a single stem cell to mature and divide in a nutrient rich soup, eventually resulting in billions of cells fused into a solid slab of meat” (299). As with all muscle, this would then need to be exercised in order to grow. Scientists are able to exploit the muscle’s natural tendency to contract and stretch them using Velcro tabs in the Petri dish to build strength, giving the meat a familiar texture (Post 294). Although the basic methods for creating in vitro meat have been established, it still is a relatively new scientific breakthrough that will take many years before it will be able to be marketed and sold in grocery stores. Supporters of in vitro meat claim that not only could it replace industrially farmed meat, it could potentially be modified to create a healthier product. They also contend that it will solve the farming industry’s well-documented animal cruelty issues and reduce the millions of cases of food-borne illnesses that occur every year. In contrast, opponents argue that the process of growing meat apart from an animal is not only unnatural but unappealing as well. They also insist that the high cost of in vitro meat is a major drawback that will hinder its effectiveness as a meat substitute. A review of these positions will demonstrate that a middle ground argument should be established where in vitro meat should be produced, but not genetically modified to work in conjunction with an improved, more humane version of industrial farming.
Supporters of in vitro meat believe that conventional meat production is highly ineffective and look to lab grown meat as a potential replacement for industrial farming. Supporters also claim in vitro meat also carries the possibility of being able to produce a healthier product by altering the meat’s fat content. Omega 6 fatty acids could be replaced with a more beneficial Omega 3, thereby creating a more heart-healthy protein. Zachary Schneider, in his Houston Law Review article "In Vitro Meat: Space Travel, Cannibalism, and Federal Regulation," points out:

Genetic engineering and cloning are already being implemented to help ease some of the burdens on the world food supply. In 2005, 52% of corn, 87% of soybeans, and 79% of cotton planted in the United States were genetically engineered. Creating fast-growing animals and inherently insect-resistant plants can alleviate strains on the environment and the global food supply. (993)

Many fruits and vegetables in stores today have been genetically modified. It is a practice that has grown dramatically in the past decade and has gained an increasing amount of shelf space in grocery stores across the country.

The animal cruelty that occurs in industrial farming facilities is another major reason for support of in vitro meat. Researchers at John Hopkins have compared concentrated animal feeding operations (CAFO’s) to nightmare hospitals “…where everyone is given antibiotics, patients lie in unchanged beds, hygiene is nonexistent, infections and re-infections are rife, waste is thrown out the window…”(Post 78). PETA, one the largest animal rights organizations, has backed the development of lab-grown meat and has even offered a $1 million incentive to the first group of researchers to
produce a marketable product. Ingrid Newkirk, president of PETA, explains their support, “People are surprised to learn that PETA is interested in lab-grown meat, but we have overcome our own revulsion at flesh-eating to champion a breakthrough that will mean a far kinder world for animals” (Edwards 30).

In vitro meat supporters also point out that industrial farming is to blame for millions of food borne illnesses each year. In the United States alone, 76 million are stricken annually by contaminated meat, 5,000 of them fatally (Pluhar 457). Pathogens such as Salmonella, Campylobacter and E. coli are not only found in the meat itself, but also in the water supply and contaminated produce from improper livestock waste disposal. The heavy use of antibiotics in livestock has also been blamed for the emergence of increasingly resistant strains such as MRSA, which can invade hospitals.

Views like these only see the positive aspects of the heavy-handed use of technology. Genetically modified foods are also fraught with controversies over ethics, moral implications, and possible health effects. They have been linked to many types of cancer, allergic reactions, reproductive problems such as endometriosis and other serious health problems.

Those against in vitro meat insist that the process of growing meat in a Petri dish is highly unnatural and should not occur. The thought of consuming lab grown meat may be very unappealing for many and perhaps will be slow to catch on. There is also a high degree of uncertainty regarding the possible long-term effects of cultured meat. Another disadvantage of lab grown meat is the initial cost; the current production is very time- and labor-intensive. In Chris Edwards’ article “Factory-Fresh Flesh” Edwards elaborates:
A preliminary economic analysis carried out by Exmoor Pharma on behalf of Professor Stig Omholt of the Agricultural University of Norway—one of the leading in vitro meat researchers—found that the cost per tonne of meat produced synthetically would probably be around €3,000. The cost of chicken or pork produced conventionally today is around €1,500. (Edwards 32)

As with most emerging technologies, cost is likely to drop over time. Moreover, the long-term cost of the current unsustainable methods of farming will only increase over time, not only financially but environmentally, ethically, and medically as well.

As an alternate position, a middle ground between pro and con arguments can be established. Industrial farming is not a sustainable method of meat production, and in vitro meat could lessen the reliance on the deeply flawed industry. There are many known health risks associated with genetically modified food therefore the lab-grown meat should not be altered from its natural state. The goal should be to acquire meat in a humane fashion to lessen the risk of illness, not increase it. Meat should be grown in labs but not genetically modified. With proper regulation from the FDA and USDA and responsible use of technology; it is possible to reach a happy medium.

In 1932 Winston Churchill declared, “Fifty years hence, we shall escape the absurdity of growing a whole chicken in order to eat the breast or wing, by growing these parts separately under suitable medium” (36). Although we are past his 50-year prediction, the time has come for this idea to become a reality. At present, the industrial farming industry is unhealthy and unethical due to the spread of disease among humans and mistreatment of animals. The unsustainable nature of our current farming methods has created a need for an alternate source of meat to feed our growing population. In
vitro meat, created without scientifically altering the genetic makeup of the muscle tissue, is precisely the humane, healthy, and environmentally conscious compromise the world needs to deal with the appetites of the 21st century.

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