



MEDIA MYTHCRUSHER

Plant Based and Cultured Alternative Protein Products

In recent years there have been many new “meat alternative” products on the marketplace, as well as the ongoing development of lab grown or cultured meat products. These products have generated extensive media coverage and comparisons to traditional meat, though many claims made in the media are often unproven, misleading or downright false. This guide addresses the most common misperceptions and provides the facts.

#1: Plant based and Cultured Products are Not the Same

Although both generally are new products in the marketplace generating extensive media attention, plant based and cultured products are not the same and shouldn't be confused. Some plant based products have been on the marketplace for many years, and while newer players in the market highlight the technology they use to make their products more “meat-like,” they are still derived from plant based ingredients, such as pea protein or wheat protein. Cultured or lab grown products attempt to make meat from animal cells grown or cultured in a lab, and so are derived from animals.

#2: Odds Are You Have Not Tasted Cultured Meat

Although plant based products are commercially available, there are no cultured meat products available for purchase by consumers. To date, they have only been sampled by people with ties to the companies and a select few journalists. One company estimates it will have a lab grown beef or chicken product supplemented with “[plant based filler](#)” on the market by the end of 2018, but development costs remain high for most cultured products to be commercially

available. Most experts [estimate](#) that some cultured products will be ready for commerce around 2021.

#3: “Clean Meat:” Just a Marketing Term.

Recognizing that “lab grown,” or “cultured meat,” or “fake meat” products face significant challenges with consumer acceptance, the Good Food Institute conducted [at least 28](#) focus groups, surveys, and studies to figure out what marketing term would be most palatable. Through that process the term “clean meat” was born. However, as noted below, there is little evidence to suggest that meat grown in a lab is any “cleaner” than traditional meat, both environmentally and from a food safety perspective.

#4: Meat Is Defined

A [petition](#) from the US Cattlemen's Association asking USDA to define “meat” has led to confusion about some of the regulatory considerations related to plant based and lab grown products. USDA has had a definition of meat on the books for many years. A read of [9 CFR 301.2](#) suggests that the lab grown products most likely fit within the “meat” or “meat byproduct” definitions, which are regulated by USDA (underlined portion for emphasis):

a. **Meat** “part of the muscle of any cattle, sheep, swine, or goats which is skeletal or which is found in the tongue, diaphragm, heart, or esophagus, with or without the accompanying and overlying fat, and the portions of bone (and bone-in product such as T-bone or porterhouse steak), skin, sinew, nerve, and blood vessels with normal accompany the muscle tissue and that are not separated from it in the process of dressing.”

b. **Meat food product.** Any article capable of use as human food which is made wholly or in part from any meat or other portion of the carcass of any cattle, sheep, swine, or goats, except those exempted from definition as a meat food product by the Administrator in specific cases or by the regulations in part 317 of this subchapter, upon a determination that they contain meat or other portions of such carcasses only in a relatively small proportion or historically have not been considered by consumers as products of the meat food industry, and provided that they comply with any requirements that are imposed in such cases or regulations as conditions of such exemptions to assure that the meat or other portions of such carcasses contained in such articles are not adulterated and that such articles are not represented as meat food products. This term, as applied to food products of equines, shall have a meaning comparable to that provided in this paragraph with respect to cattle, sheep, swine, and goats.

c. **Meat byproduct.** “Any part capable of use as human food, other than meat, which has been derived from one or more cattle, sheep, swine, or goats. This term, as applied to products of equines, shall have a meaning comparable to that provided in this paragraph with respect to cattle, sheep, swine, and goats.”

#5: Know the facts on Greenhouse Gasses and Environmental Impact

Common claims about the benefits of plant based or lab grown meat products often focus on environmental impact. The Meat Institute has a [Media MythCrusher](#) specifically dedicated to environmental issues, but most importantly, [Environmental Protection Agency data](#) show that livestock production in the U.S. accounts for around four percent of total greenhouse gas (GHG) emissions. A recent [study](#) from the Proceedings of the

National Academy of Sciences evaluated the potential impact if everyone in the US adopted a meatless diet and found that it would only reduce total U.S. GHGs by 2.6 percent, and there would be a greater number of deficiencies in essential nutrients.

Limited research has been done on the potential impacts of large scale production of plant based or lab grown products, but a study by [Smetana et al.](#), which performed a lifecycle assessment of all the possible inputs showed that, compared to meat and other meat alternatives, cultured muscle tissue had the greatest impacts on climate change, human health, ozone depletion, radiation, metal depletion, and fossil depletion, mainly due to the massive amounts of energy it would take to produce cultured muscle tissue. In the same study, vegetable proteins showed lower impacts compared to the production of chicken, but all products’ impacts were lower than production of muscle tissue via cell culture.

#6: Nutrition Benefits are Unclear

Cultured products are not on the marketplace, so exact nutrition data is not available, though as a product directly derived from meat, the nutrition should be similar. New plant based products on the marketplace most commonly imitate 80 percent lean burgers and offer similar amounts of calories, fat, protein and iron. Sodium levels in plant based products are considerably higher ranging from [380-430 mg](#) of sodium compared to just [75 mg for beef](#). Consumers also have the option to reduce the fat and calories from beef hamburgers by choosing leaner ground beef blends. This flexibility is not available with specific plant based products. The number of ingredients per product is also considerably different, with plant based burgers commonly featuring [20+ ingredients](#) compared to just one for beef.

#7: Safety Benefits Unknown

To date there is no research available on food safety differences between traditional meat production and cultured or plant based products. All raw agricultural products carry some level of bacterial risk and human handling can also introduce risk. This is true whether the product is animal or plant based. Americans currently eat approximately 285 billion servings from the meat and poultry group per year. An estimated 99.999 percent of these servings are consumed safely. Although the report has [flaws](#), recent DNA testing of plant based and meat based burgers found that [nearly a quarter](#) of plant based products had food quality issues ranging from inaccurate ingredient labels,

pathogens or foreign DNA.

#8: Animals are Currently Necessary for Cultured Meat

In order for animal cells to grow in a lab, cells from an animal are needed. There also needs to be nutrients added for them to grow. Scientific journals [cite](#) the most commonly used and effective nutrient used to grow meat cells as fetal bovine serum, which comes from fetal calves obtained during the commercial harvest of cattle for meat products. Researchers are actively looking for growth serum that does not come from an animal source and some companies claim they are using alternative options, though these are typically proprietary and unclear how effective they are growing cells at a commercial scale.

#9: Replacing Animal Agriculture Has Consequences Beyond Meat

Many proponents of alternative protein products cite a desire to eliminate or drastically reduce animal agriculture, though such a change would have major consequences across the economic and production spectrum. The meat industry employs millions of people, contributing more than a [trillion dollars](#) to the US economy. [Studies](#) have shown that land used for grazing or growing animal feed is often unsuitable for other agriculture purposes. Consideration also must be given to the range of other products that come from animals which would also need to be replaced. Losing [meat byproducts](#) would mean losing, at least in part, many chemicals used in cleaning supplies, cosmetics, plastics, soaps, gelatins, and pharmaceutical and medical supplies. While it is possible that these can be replicated another way, the environmental and economic implications of replacing those many products is unknown.

#10: All Food is Regulated

Recent calls for regulators to evaluate cultured meat have generated considerable media attention, though all foods are regulated by FDA or USDA and any products developed through novel technologies for human consumption will be regulated as well. The North American Meat Institute has adopted a position unanimously approved by its Board of Directors that USDA, through the Food Safety and Inspection Service (FSIS), should assert jurisdiction over these products. We believe this will ensure that lab-grown, cultured meat and poultry products are wholesome and safe for consumption and are labeled and marketed in a

manner that ensures a level playing field in the marketplace.

#11 Inspection Occurs in ALL Meat Plants

Some have claimed there is no need for inspection in facilities where animals are not being harvested, however this ignores a key fact: USDA inspection is required for all federal meat plants, whether harvesting occurs or not. Even in plants where meat is simply processed into ground beef, hot dogs or deli meats, USDA inspectors are there daily. There may be fewer USDA inspectors, but these plants are still subject to daily inspection.

#12: Meat Alternatives are Not New

Plant based meat imitators or replacements date back to [tofu in China](#) in the year 965. More recently there have been many different products available at grocery stores and restaurants for consumers to choose from that seek to imitate or replace meat. Newer plant based products aim to compete with meat in the meat case or on restaurant menus, though industry confidence remains high that meat will maintain its popularity thanks to its great taste, natural nutrition and integral role in our food culture.

#13: Americans Still Love Meat

USDA estimates Americans will eat a [record amount of meat](#) and poultry in 2018 as demand remains strong. Meat consumption typically ebbs and flows from year to year primarily based on prices. During times when prices are higher, consumption may slightly decline. This has been a trend for many years and is further backed by many studies consistently showing that 95 percent of Americans enjoy meat.

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