# Taking the Beef Out of Burgers

Source: TheWeek.com, January 12, 2020

# Why are meatless burgers so popular?

Food scientists have been making plants look and taste like meat. Plant-based (vegan) burgers exploded in popularity last year, led by companies Beyond Meat and Impossible Foods. Beyond Meat sold food in 20,000 U.S. grocery stores plus 53,000 fast-food restaurants such as Dunkin' Donuts and Carl's Jr., while McDonald's is testing a Beyond Burger in Canada. Burger King's Impossible Whopper and White Castle's Impossible Sliders were almost *too* successful, causing a supply crisis. Overall, restaurant sales of plant-based meat grew by 400 percent last year. People spent nearly $1 billion on plant-based products in 2019. Plant-based burgers attract eaters who are health conscious and environmentally concerned but aren't willing to give up familiar tastes and textures. Ninety-five percent of Impossible's customers eat meat. In taste tests, half of them can't tell Impossible Burgers from the real thing.

The new "fake" burgers are made to imitate the way ground meat sizzles on the grill, bleeds in the middle, and crumbles in your mouth. That's not easy, considering cooked beef contains 4,000 different molecules. These burgers get that pinkish color and savory flavor with an ingredient called "heme," the iron-carrying molecule in blood and some plant roots. Plant based burgers are also made of plant proteins — usually soy, but sometimes pea, bean, or wheat — and plant fats. These ingredients are cooked in big pressure cookers, which use low heat and compression to replicate the fibrous texture of meat

**Is that healthier than meat?**

Yes and no. Consuming meat is believed to increase the risk of cardiovascular disease and certain cancers. Commercial beef, pork, and poultry often carry bacteria and viruses that may cause illness if not properly cooked or handled. Critics of alternative meat, however, say that companies are exploiting the healthy sound of "plant-based" while providing heavily engineered products. Whole Foods CEO John Mackey, for example, has warned customers that these burgers "are super, highly processed foods." However, meatless burgers are cholesterol free and contain about the same calorie count as hamburgers but have more sodium. For example, The Impossible Whopper has 1,240 milligrams of sodium, 260 more than the beef version. Coconut oil gives Beyond and Impossible Burgers saturated fat levels similar to beef, and their proteins are considered less nutritious.

# Is the meat industry worried?

Stanford University biochemist Patrick Brown, who founded Impossible Foods, says it should be. "We plan to take a big portion of the beef market within five years," he said. However, that is unlikely. Americans on average eat three hamburgers a week. Still, the meat industry clearly feels threatened: The meat industry convinced 12 state governments last year to ban products from using words such as "burger" and "meat" if they do not come from animals.

# The environmental impact of livestock

Environmental Scientists estimate that eating 4 pounds of beef contributes as much to global warming as flying from New York to London. The annual farming of 50 billion animals for meat worldwide leaves a massive carbon footprint in terms of land use, crop consumption, emissions, and water pollution. In the past 25 years, an area larger than South America has been set aside for cattle. Cows releasing methane, mostly through burping, after digesting grains and grass causes two-thirds of the livestock sector's greenhouse gas emissions. A landmark report in *Science* found that avoiding meat and dairy is the "single biggest way" to reduce a person's environmental impact. A recent University of Michigan study found that a plant-based burger generates 90 percent less greenhouse gas, requires 46 percent less energy, and has 99 percent less impact on water scarcity than a quarter pound of U.S. beef.