Review Research

REVIEW ON THE BURGER EFFECT : BEEF INDUSTRY AND CLIMATE CHANGE

Rehab A. Rayan

Department of Epidemiology, High Institute of Public Health, Alexandria University.

Corresponding author: rayanr@alexu.edu.eg

ABSTRACT

The world needs to decrease emissions from agriculture, and fossil fuels to halt global warming adequately. Animal-based meals are nourishing and very vital to livings and nutrition in developing nations, though they are a similarly incompetent source. Producing beef is growing further dynamic, yet forests are still being cut down. People state they desire to consume more plants, although eating beef is yet increasing. Consuming meat is among the main factors for global warming. Provided that the globally growing market for meat, and the severe effect of manufacturing meat on the planet, cutting down animal protein regarded as public health and food security concern. A future with sustainable food would need a variety of approaches from the farmer to the consumer. This review explores the relation between producing beef and the emission of greenhouse gases (GHGs) and the debate of consuming more or fewer resources. It also displays the beneficial impact of cutting down beef consumption. Finally, it suggests some methods to produce beef sustainably.

Keywords : Sustainability, Environmental health, Climate change, Global warming, beef.

Introduction

Growing beef production demands to expand land. Modern grasslands are usually formed by cutting trees and thereby emitting the housed carbon dioxide in the woods. As cows and other ruminant animals such as sheep and goats feed on plants and grasses, they release methane (a strong greenhouse gas) in a process called enteric fermentation, and it is where the regurgitates of cows come from., methane is also released from compost. Nitrous oxide (another potent greenhouse gas) is released from the wastes of ruminant animals on grasslands and synthetic fertilizers applied on farmed crops for feeding cattle (Bryan et al., 2013).

In 2019, the Food and Agriculture Organization (FAO) estimated that the cumulative emissions per year from animal agriculture were about 14.5% of all man's emissions, of which beef contributed 41% (FAO, 2019). The need for meat and other ruminant meats worldwide may grow by 88% from 2010 to 2050, adding immense burden on biodiversity, woods and the climate., Grassland might yet extend approximately 400 million hectares to satisfy this increasing need. The resulting deforestation might raise greenhouse emissions, which can make the aim of limiting temperature rise by 1.5-2℃ unachievable (Pendrill et al., 2019; US EPA, 2019).

Producing Beef Consumes More or Fewer Resources

Ruminant animals have less reproducing and growing rates than poultry and pigs, therefore for each given meat, they need a larger quantity of pasture. Beef consumes more manufacturing resources than other animal-derived foods, which intern consume more resources than plant-derived ones. Beef needs more land and releases more gases for each dietary protein gram than that of traditional plant ones, like beans, most of the globe's fields could not raise trees or crops as they heavily produce livestock. Hence, the extra beef would intensify the pressure on woodlands (Wirsenius, 2003).
Many statistics consider emissions from producing beef without these related to alteration in using the land. For instance: in 2017, the Environmental Protection Agency in the U.S. determined that the entire U.S. farming emissions at just 8% of the total U.S. emissions; in 2017, a study published in the National Academy of Sciences proceedings estimated that eliminating all the U.S. agriculture animals could decrease U.S. emissions by 3%. In 2019, a study in Agricultural Systems estimated emissions from producing beef at just 3% of total U.S. emissions (US EPA, 2019).
In Egypt, agricultural growth would cause environmental consequences involving increased demand on water, competition over land and climate change by GHGs, like methane, produced by livestock animals. Every year, Egypt consumes about 10 m tonnes of red meat. For Egypt's GHG emissions, the total emissions rise steadily with an average increase of 5.1% each year, and livestock agriculture is the second-largest producer of GHGs (FAO, 2017).

Meanwhile, a land area dedicated to producing food might store much-added carbon with its natural plants or if left to become a forest. Demanding beef is growing worldwide, and consumption by one country could lead to land-use consequences and emissions for another. For instance, a rise in consuming beef in the U.S. could derive deforestation for creating Grassland in Latin America and vice versa (Rotz et al., 2019; White & Hall, 2018).

Cutting Down Beef Consumption

Many studies disclose the public unwillingness to cut down consuming meat for an ecological cause. Furthermore, vegetarians consider environmental issues are just a rationale to argue for their diet habits rather than a genuine motive to abandon animal products. Meanwhile, the current evidence demonstrates that environmental justifications are attractive for considerable numbers of meat-eaters to follow specific meat reduction plans such as meat-free days. Such an attraction is further widespread between females and individuals with particular cultures (Sanchez-Sabate & Sabaté, 2019).

However, controlling climate change would not need everybody turning into vegetarian or vegan or quit consuming meat. In highly consuming nations, If eating bovine beef decreased by approximately 1.5 burgers for each individual weekly or 50 calories daily, this might almost drop the call for further agricultural enlargement and the related deforestation, yet in a world including 10 billion population. Following 1970, U.S. beef consumption individually has dropped by one-third (Willett et al., 2019). Since poultry emits fewer greenhouse gases (GHGs), for their less enteric methane-producing rates than ruminant farm animals, It is regarded as environmentally friendly in relation to other sources for animal protein (PoultryWorld, 2016).

The market for plant-derived substitutes is flourishing. For instance, mixed beef-plant alternatives and plant-derived burgers are steadily competing with traditional beef products on essential qualities such as cost and flavour. Persuasive argues for switching to plant-derived diets is that consuming red meat is correlated to raised risks of colorectal cancer, stroke, heart diseases, and type 2 diabetes and that foods with greater healthy plant-derived components like legumes and nuts, vegetables and fruits and whole grains are correlated to fewer risks (Willett et al., 2019).

In high-income countries such as those in Europe and North America, individuals eat more protein to fulfil the dietary requirements. In the developing nations, provided the expected future increase in meat demand, even if higher-income countries consume less beef, the world meat market would probably proceed to expand shortly. By 2050, it is anticipated that the universal consumption of ruminant meat will increase by 32%. Growing consumption in countries like China will drive added trading opportunities in leading meat-producing nations. However, leading beef businesses are investing in the rapidly evolving protein alternative market. They are marketing for themselves as they operate to diminish emissions from producing beef in their supply chains through advanced production methods (Gibson, 2017).

Sustainable Beef Production

The intensity of emissions out of producing beef differs significantly all over the globe and enhancing the efficiency in producing farm animals could mostly minimize the utilized land and emissions for each meat pound. Advancing pasture conditions and animal care, growing better animal breeds, which in turn produce milk and beef with increased productivity, and adopting enhanced control systems such as grazing rotationally could promote productivity and soil health meanwhile diminishing emissions (Plumer, 2018).
Promoting productivity could reduce demand on tropical jungles by decreasing the need for Grassland. For instance, in Colombia, producing beef combines grasses and trees toward grasslands. Hence, the land yields a higher amount of quality pasture. Therefore, farmers could grow more bovine for each acre meantime considerably lessening emissions of methane for each meat pound. In Kenya's dairy farms, improving the cattle's conventional food including better quality grass and high protein was found to fasten the growth of cattle, increase milk production and diminish emissions of methane for each milk litre from 8% to 60%. Moreover, feeding additives could considerably decrease the cows' burping. Better managing fertilizers and applying techniques to limit nitrogen in the waste of animals could additionally diminish farming emissions (Bryan et al., 2013; Byrnes et al., 2017; Hristov et al., 2015).

Provided that the diet patterns are dynamic, and the mass media spotlight on sustainable nutrient systems and foods is growing, it is possible that environmental issues turn into a spark to at least modest cuts in eating meat for a bulk of the public, particularly those who are not encouraged by health or animal well-being, which could intern minimize the man-made touch considerably on the ecosystem. Additionally, community health educators, nutritionists, policymakers, food manufacturers and mass media stations could as well regard ecological motives to boost sustainable and healthy foods (Sanchez-Sabate & Sabaté, 2019).

Conclusion

Eventually, meat consumes more resources than other foods and affects the climate greatly. A future with sustainable food would need a variety of approaches from the farmer to the consumer. Altering public dietary habits is challenging for habitual modification requires an individual's positive attitude derived by motives and justifications. Similarly, as the population is increasing worldwide, food companies hold a role in decreasing emissions from meat. Finally, we should work on policies to control climate change in agriculture and energy levels and more; along with using the best available information to reach decisions.

Conflicts of Interest

The author declare no conflicts of interest.

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