

Changing the Climate Perception Surrounding Beef

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Organic, vegetarian, no-carb, gluten-free, non-GMO, and meat free Mondays; when aren't Americans discussing what we should or shouldn't eat? Now, more than ever before, people are seeking environmentally conscious products (Reints, 2019). Food manufacturers are capitalizing on the new environmental attention as a marketing strategy, whether there is truth in the accusations or not. Currently, the focus is on the livestock industry and meat consumers are being shamed for their eating habits (Reints, 2019). Beef has now stepped into the crosshairs of the climate discussion ("*Moving Towards Sustainability*," n.d.). Cattle's digestive processes, greenhouse gas emissions, carbon sequestration abilities, and soil benefits need to be better explained in order for all consumers to understand they can eat beef with not just a clear conscience, but a green one.

Pinpointing where this criticism for the beef industry started is easier said than done. What has caused Alexandria Ocasio-Cortez to propose the destruction of meat production in her first drafts of the Green New Deal (FactCheck.org et al., 2019)? What prompted Senator Cory Booker, newly appointed member of the Senate Committee of Agriculture, to say, "I'm a vegan to fight climate change," (Jonathan, 2019)? The popularity of foregoing meat in our diets, and cattle in our pastures in order to help the planet, probably began with a 2006 report released by the Food and Agriculture Organization (FAO) entitled, "Livestock's Long Shadow." This report blamed meat production for 18% of greenhouse gas emissions (Steinfeld, 2006), with as much as 65% of those emissions coming from cattle production ("*Key Facts and Findings*," n.d.). Even last year's pre-pandemic Golden Globe Awards went meatless in order to raise awareness about climate change (Dibble, 2020). Ironically, many of the movie stars

traveled to the exclusive gala in gas guzzling private jets (McCarthy, 2020). I wonder if Hollywood knows that choosing a jetless lifestyle would save 1.6 tons of carbon from entering the atmosphere per transatlantic flight, per passenger, while choosing a meatless lifestyle for an entire year would only save 1,600 pounds of carbon emissions (Chodosh, 2019). So, before we blame cows for our inevitable demise, let's take a realistic look at the effect of cattle production on our environment.

Bovine flatulence has truly been blown out of proportion. You probably have heard about cow farts destroying the environment. Not only is the mainstream media assigning guilt to the wrong end of the cow, but many people don't understand the digestive process of a cow is a grass grazing wonder of science. Let's examine their ruminant stomachs. If we ate a bunch of grass, we would get little to no nutritional value, not to mention a super bad stomach ache (Radford, 2013). Cattle, on the other hand, have a vastly different digestive system that can easily convert low quality forages into high quality nutrients. Inside a chamber called a rumen, fermentation of ingested biomass occurs with the help of tiny microorganisms (Matthews et al., 2019). These little "gut bugs" make the ruminant digestive system much more efficient at pulling calories out of forage than any other digestive system known to man (Radunz, 2012).

One of the by-products of ruminant digestion is methane, which is primarily burped and exhaled (Niman, 2014). Methane is one of the three main greenhouse gases along with nitrous oxide and carbon dioxide ("Overview of Greenhouse Gases," 2019). What many don't realize is even though this invisible gas can trap the sun's heat (Leman, 2019), methane also degrades ten times faster than other greenhouse gases in our atmosphere (Clark 2012). Get this— anything that decomposes emits methane,

including uneaten dead and dying grasses (“Causes of Climate Change,” n.d.). Yet, when cattle consume and digest this forage, there are vastly more benefits than drawbacks. Additionally, grazed grasslands have the ability to offset a portion of methane produced by cattle by promoting microbes in the soil that break down methane (Nickel, 2021).

Surprisingly, grazing cattle can actually reverse the trend of carbon emission (Wood, 2019). When livestock graze on grasses and other forages, the plants are forced to stay in the growing cycle longer. The process of grazing makes photosynthesis happen faster and more frequently. As a result, the higher photosynthetic rates per acre, the more carbon is sequestered, or captured and stored in the soil (Schwartz, 2013). Studies of grazing cattle have shown a 1% increase of organic carbon within the top four inches of the soil profile of grazed land. This is approximately the equivalent of 11 tons of carbon being stored per acre per year (Nickel, 2021). According to ecologist Allan Savory, “Managing livestock can take enough carbon out of the atmosphere to return us to pre-industrial levels” (Hind, 2018, p.1). This demonstrates how cattle are professional carbon sequesters. Cattle aren’t the enemy in the attempts to manage our planet correctly; they very well could be the answer.

Soil management, or even soil regeneration, is no easy feat. To truly appreciate cattle’s grazing ability, one has to take a soil’s-eye view of the situation. A study in North Dakota, harvested plant roots from ungrazed versus grazed grasslands. The results were astonishing. The roots obtained from grazed lands weighed in at 2,400 pounds per acre, compared to grazed grasslands, where the roots only weighed in at 740 pounds per acre (Nickel, 2021). The healthier and more advanced the root system is, the more

efficient the soil is at sequestering carbon, stopping erosion, and fighting drought (Forgarty, 2011). This sustainable type of grazing is often referred to as holistic management (“Healthy Land, Healthy Food, Healthy Lives,” n.d.). The regenerative practice is becoming widely used throughout the United States to maximize the environmental benefits of livestock production.

The new focus on research concerning cattle’s ability to improve soil health and sequester carbon has caused many experts to rethink their figures, and actually become proponents of the benefits of livestock production. Dr. Frank Mitloehner, a professor at UC Davis and an air quality specialist, has been the leading myth-buster on the FAO’s initial reporting of cattle’s negative impact on greenhouse gas emissions (F. Mitloehner, personal communication, February 26, 2021). Since then, the FAO has admitted the 18% figure was grossly exaggerated (“Don’t Blame Cows For Climate Change,” 2010). Subsequent calculations have revealed that cattle production in the U.S. only accounts for 1.9% of greenhouse gas emissions (Rudolph, 2016). Unfortunately, this new figure has not reached the mainstream yet, due largely to anti-animal agriculture agendas.

Animal agriculture is progressive by nature. Left to their own ingenuity, cattle producers will continue to lower emissions and be a competitive, natural carbon sink. Through modern management practices, genetic indicators, and new selection methods, the industry is continually improving. Within the last 40 years, the United States has produced the same amount of beef with one-third fewer cattle (Quinn, 2020). It is time for beef producers, marketers, packers, and consumers to be proud of beef’s synergistic effects on our ecosystem. Any current protein alternative looks to have a

much harsher impact on our environment, health, and pocket book, than the good old, one-ingredient, carbon-capturing, nutrient dense; beef (“Can Responsible Grazing Make Beef Climate-Neutral?,” 2019).

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