



NICHOLAS MEAT INFORMATION BRIEF

Beef Sustainability

The U.S. is a Global Leader in Beef Sustainability



U.S. cattle farmers and ranchers produce the most sustainable beef in the world through decades of improvement and innovation. This is due to the ability of cattle to upcycle human-inedible plants into high-quality protein.¹ In fact, **beef production in the U.S. has a carbon footprint 10 to 50 times lower than other regions of the world,**² and according to the Environmental Protection Agency, greenhouse gas (GHG) from beef cattle only represents 2% of emissions in the U.S.³

Below are some additional facts about beef sustainability:

- **All of agriculture**, including beef production, accounts for approximately **10% of total U.S. emissions.**³ By contrast, **transportation** accounts for **29% of GHG emissions** and **electricity** accounts for nearly **28% of GHG emissions** in the U.S.³
- Between 1975 and 2017, the U.S. beef industry, through continued sustainability efforts and improved resource use, **reduced emissions from beef cattle by 30%**, while producing slightly more beef.^{4,5}
- Between 1961 and 2018, the U.S. beef industry, through continued sustainability efforts and improved resource use, has **reduced emissions per pound of beef produced by more than 40%** while also producing more than 66% more beef per animal.^{4,5}
- The U.S. produces **18% of the world's beef** with just **6% of the world's cattle** (ranking third in worldwide total cattle population).⁵
- The methane belched from cattle is not adding new carbon to the atmosphere. Rather, it is part of the **natural cycling of carbon** through the biogenic carbon cycle.⁶ The methane from cattle stays in the atmosphere for approximately **9-12 years before being recycled back into the ground**, whereas carbon emitted from fossil fuels stays in the atmosphere permanently.⁶
- If all livestock in the U.S. were eliminated and every American followed a vegan diet, greenhouse gas emissions would only be reduced by **2.6%**, or 0.36% globally.⁷

Citations:

1. Davies, KW, et al. Winter grazing can reduce wildfire size, intensity and behaviour in a shrub-grassland. *International Journal of Wildland Fire* 25(2) 191-199 <https://doi.org/10.1071/WF15055> Submitted: 27 February 2015. Accepted: 16 May 2015. Published: 11 August 2015.
2. Herrero M, et al. Biomass use, production, feed efficiencies, and greenhouse gas emissions from global livestock systems. *Proc. Natl. Acad. Sci.* 2013. 110: 20888-20893
3. EPA. 2019. Inventory of U. S. Greenhouse Gas Emissions and Sinks: 1990-2019. U. S. Environmental Protection Agency, Washington, D. C.
4. USDA-NASS Quick Stats Tools. Available at: https://www.nass.usda.gov/Quick_Stats/. Accessed December 6, 2019. U.N. Food and Agriculture Organization. FAOSTAT Database – Food and agricultural data. Available at: <http://www.fao.org/faostat/en/#home> accessed June 3, 2021
5. U.N. Food and Agriculture Organization. FAOSTAT Database – Food and agricultural data. Available at: <http://www.fao.org/faostat/en/#home>. Accessed December 6, 2019. USDA-NASS Quick Stats Tools. Available at: https://www.nass.usda.gov/Quick_Stats/ accessed May 3, 2020
6. UC Davis Clear Center. The Biogenic Carbon Cycle and Cattle. 2020. <https://clear.ucdavis.edu/explainers/biogenic-carbon-cycle-and-cattle>
7. White, R.R. and M.B. Hall. 2017. Nutritional and greenhouse gas impacts of removing animals from US agriculture. *Proceedings of the National Academies of Sciences.* 114(48) E10301-E10308. DOI: 10.1073/pnas.1707322114 (Note: 0.36% of global emissions calculated from estimate of 49 gigatons (Gt) of anthropogenic carbon dioxide equivalents emitted in the year 2010 from the Intergovernmental Panel on Climate Change Fifth Assessment Report. Summary of the report can be found at this link: https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policy-makers.pdf.)

Are U.S. Cattle Causing an Increase in Global Warming?

Pennsylvania experts address the question.

That question was investigated by C. Alan Rotz, Ph.D., Agricultural Engineer at USDA Agricultural Research Service, University Park, Pennsylvania, and Alexander N. Hristov, Ph.D., P.A.S., Distinguished Professor of Dairy Nutrition at Penn State University College of Agricultural Science.

Over the past decade, we have seen the media place a lot of blame for our changing climate on cattle. Scientific evidence does not support this claim however for cattle in the United States.

“ If we compare the emissions from cattle to those emitted by vehicles through the combustion of fossil fuels, both affect the blanket around our planet. However, there is a major difference between these two sources of greenhouse gases. ”

Read their entire answer to this question here: www.beefresearch.org/Media/BeefResearch/Docs/tqa-global-warming.

Dedication to Sustainable Beef Continues at Nicolas Meat

Nicholas Meat is committed to doing their share to ensure U.S. beef is the most environmentally sustainable in the world as they construct the Sustainable Resource Facility (SRF), an innovative and comprehensive environmental management system that will allow the company to reuse water and generate green energy from biogas. The SRF will feature award-winning waste-to-energy technology and an advanced water treatment facility. Once fully operational, the facility will help reduce truck traffic at Nicholas Meat, contain and minimize odor, create renewable energy, decrease the company's carbon footprint and capture greenhouse gases.

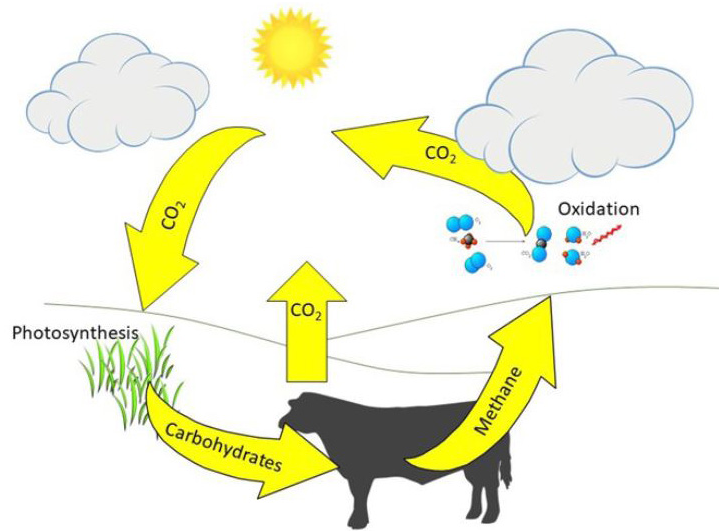


Figure 1. Methane production by cattle is part of a natural carbon cycle where the methane oxidizes in the atmosphere over a period of years converting the carbon to carbon dioxide (CO₂) that can be fixed through plant growth to form carbohydrates in feed.

Within about 10 years of its release, more than 90% of the methane is removed from the atmosphere with the carbon in the methane ultimately transformed back to carbon dioxide to become available for fixation in plants.

Within this cycle there is no long-term impact on climate if methane emissions and oxidation are in balance.

Citation: <https://www.beefresearch.org/resources/beef-sustainability/fact-sheets/global-warming>.

Want to learn more about beef and sustainability?

We recommend these resources:

- www.beefitswhatsfordinner.com/raising-beef
- www.beefresearch.org/programs/beef-sustainability

U.S. cattle farmers and ranchers continue to work tirelessly to provide the best care for their cattle and land which represent the heart of their livelihood. As consumers enjoy beef on their grills and at their dinner table, it's good knowing that U.S. cattle production is the most environmentally sustainable in the world.

LEARN MORE ABOUT HOW NICHOLAS MEAT IS DEDICATED TO A SUSTAINABLE SUGAR VALLEY AT:

www.NicholasMeats.com

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