

Relative Greenhouse Gas Emissions of American Traditional, Vegetarian, and Vegan Diets

Background

Our diet has many environmental impacts, one of which is greenhouse gas emissions. The greenhouse gas emissions involved in growing food and raising livestock come from things such as fertilizer use, transportation, processing, and the plants and animals themselves.

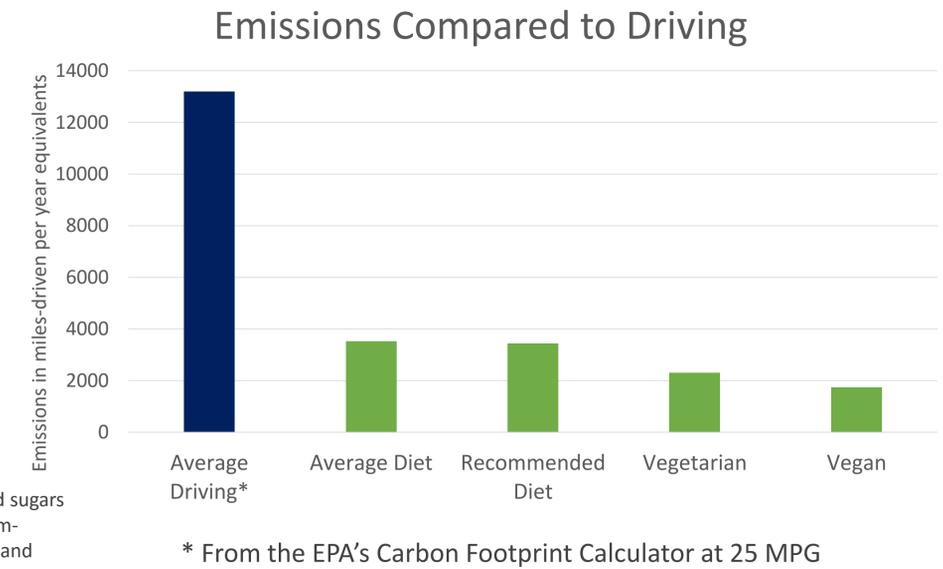
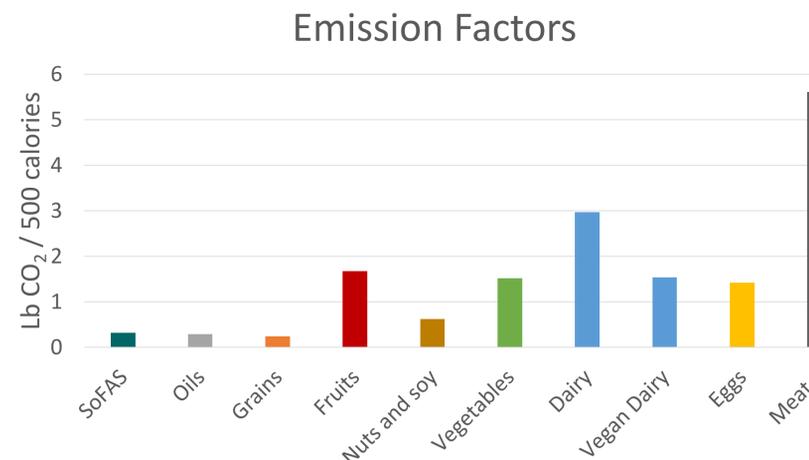
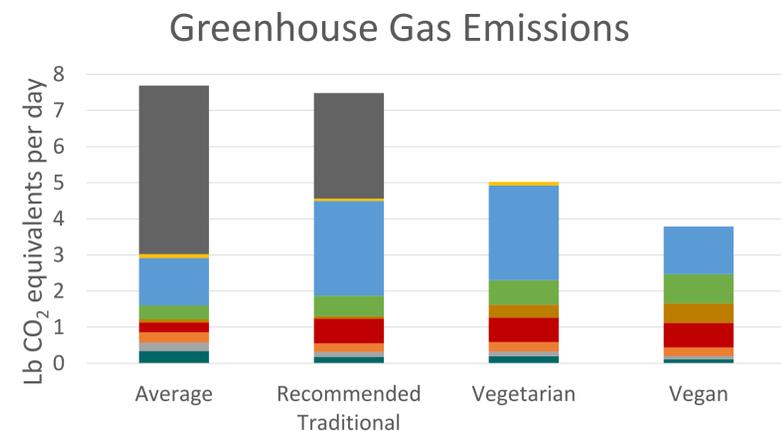
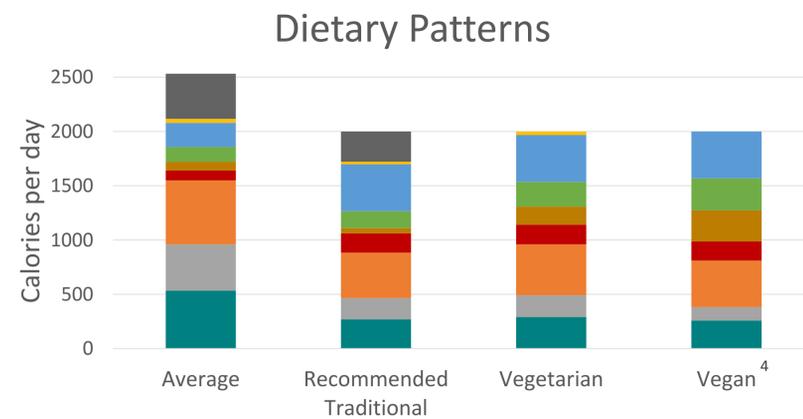
Objectives

This project quantifies the greenhouse gas emissions of the average daily American diet (in CO₂ equivalents) and compares it with the emissions associated with the recommended traditional, vegetarian, and vegan diets for Americans.

Methods

The average daily American diet was determined by using the USDA's Economic Research Service Food Availability (Per Capita) Data System. This was compared with the USDA's Healthy U.S.-Style Eating Pattern for traditional, vegetarian, and vegan diets. The CO₂ equivalent for each diet was calculated using emission factors for each food type.

Results



Conclusions

About 16% of the calories of an average American diet come from meat, but ~61% of the greenhouse gas emissions from this diet come from meat.

Greenhouse gas emissions are similar (~1% decrease) when comparing the average American diet to the recommended traditional diet; this is due primarily to an increased consumption of dairy products which makes up for the decrease in meat consumption.

There is a ~33% reduction in emissions when the recommended traditional diet is compared to a vegetarian diet and an additional ~25% reduction when the vegetarian diet is compared to a vegan diet.

A switch from an average diet to a vegetarian diet has the same reduction in greenhouse gas emissions as driving about 1200 less miles per year, and a switch from a vegetarian diet to a vegan diet is an additional 600 miles less.