

Being a Vegetarian Contributes to Sustainability on Earth!

What is Sustainability?

Sustainability is the avoidance of the depletion of natural resources in order to maintain an ecological balance. Food production worldwide requires 30% of soil availability, 20% of fossil fuels and a major part of freshwater. Diets containing meat use up to three times as many resources as a vegetarian lifestyle. The vegetarian lifestyle helps reduce the ecological footprint caused by food production². It is true that eating meat is not necessary to live a healthy life¹. Could vegetarianism be an answer to resolving issues with sustaining the earth's resources?

More Energy

Plants are primary producers containing the most amount of energy that can be utilized by the organisms following the plants in the sequential trophic levels. When you proceed through a food chain, only about 10% of the energy is transferred to the next trophic level (trophic efficiency) and the rest is either used by the organism for respiration (the process by which organic substances in food, such as glucose, are broken up into ATP, a smaller biomolecule used for metabolic processes) where energy is lost as heat. Refer to figure 2 for a diagram of trophic efficiency. By consuming a plant-based diet with crops like corn, soybeans, wheat, and peanuts, you receive equivalent or more amounts of energy than you would receive from meat if you were to eat the same amounts of each³. Refer to figure 1 for the energy of different food sources.

Less Expensive

Results reveal that it is significantly more expensive to produce a pound of meat (or milk) than a pound of commodity crops³. Refer to figure 3 for the production cost of food sources per pound. Eating food options that are less expensive to produce can potentially benefit an economy if the profit on that crop is higher for the farmers and can be sold to consumers for less.

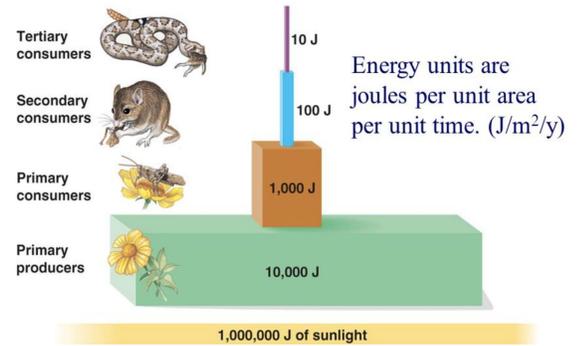


Figure 1. Trophic Efficiency

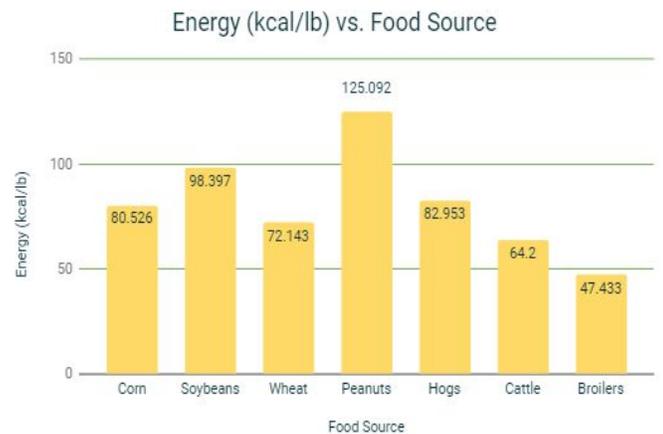


Figure 2. Energy of Food Sources

Vegetarianism is not Perfect, But it Could Help

- ★ With more food processors focusing on plant products, greater research and economies of scale may cause marketing margins to fall³.
- ★ Decreasing the number of animals bred for food would increase the population size of the trophic levels that are preyed on by them, but also decrease the population size of the predators that feed on cattle, chickens, or pigs. This could possibly have a negative impact on the food chains these specific animals are found in, which would not support sustainability efforts.
- ★ This diet may be sustainable to humans in more developed countries, such as the United States, but not necessarily in other countries where malnourishment is present. Producing these crops may not be affordable and resources like land and proper climate may impact the ability to grow these crops.

Production Cost of Food Sources

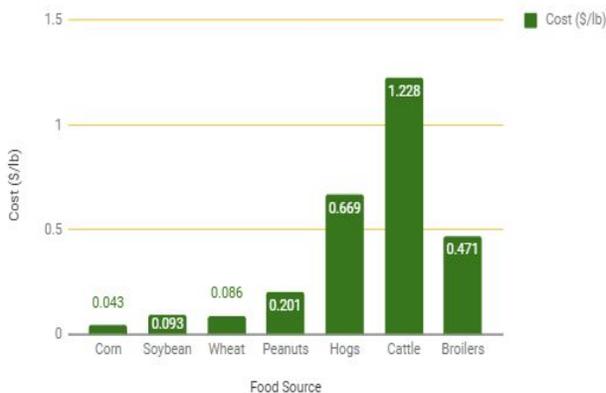


Figure 3. Production Cost of Food Sources

Works Cited

1. Burkholder N, Rajaram S, Sabaté J. 2016. Vegetarian Diets. Encyclopedia of Food and Health; 401-412.
2. Ion, RA. 2007. Reasons Why People Turn to Vegetarian Diet. Economics of Agriculture, Volume 54 (3); 353-358. <http://ageconsearch.umn.edu/record/245701>
3. Lusk JL, Norwood FB. 2009-2010. Some Economic Benefits and Costs of Vegetarianism. Agricultural and Resource Economics Review, Volume 38 (2); 109-124. Available from:<http://ageconsearch.umn.edu/record/55529>

