

Food Miles for Thought



BY ELAINE TANTALO

What is “local food”? As it has come to be used, the term “local food” refers to farm-grown fruit, vegetables and animal products, such as eggs, milk, cheese and meat that is sold in close proximity to where it was produced. A popular assumption is that local food is better for the environment because less energy is used for energy for shipping. This article investigates this assumption, and considers what type of criteria is best for judging whether local food is better for the environment.

The assumption of “better for the environment” is generally based on the idea of “food miles”, or the distance food travels from its source to the consumer. The suitability of food miles as a measure of environmental impact is a topic of research that shows that “food miles are not a very good measure of the food’s environmental impact” (Schnell, 2013, p. 618). This is the case when environmental impact is

measured as the total amount of greenhouse gases emitted during both production and transportation of food - the “carbon footprint”.

This article demonstrates that the use of food miles versus carbon footprint as criteria can lead to very different conclusions about the environmental impact of food. We use an example that compares total greenhouse gas emissions from lamb produced in New Zealand and the United Kingdom to demonstrate that fewer food miles does not always equate to less total emissions (Saunders et al. 2006).

Environmental economists Christopher Weber and Scott Matthews show that the average U.S. household’s carbon footprint from food consumption is 8.1 tons of CO2 emissions per year (Weber and Mathews 2008). This estimate includes carbon emissions within the categories of “final delivery, supply chain

freight, production, and wholesaling/retailing” (p. 3511). Out of the total 8.1 tons of CO2 emissions, 83% came from production, while 11% were from transportation. What this means is that how food is produced can have the greatest influence on its environmental footprint.

Given these results, it is clear that comparisons of the differences in environmental impact between foods grown in different locations need to take into account a more complete range of impacts than travel alone – to do otherwise would require that all production circumstances and methods are identical – and they are not. The distance that food travels is too limited a measure because it ignores potentially large differences in the total footprint of food production.

ARTICLE CONTINUES

Greenhouse gases (GHGs) emitted during production include nitrous oxide, methane and carbon dioxide, among several others. One way GHGs are released during production is when farmers apply nitrogen fertilizers to their crops (Weber and Matthews, 2008). Such fertilizers increase the amount of nitrogen in the soil, which soil bacteria more rapidly break down into nitrous oxide gas (Sanders, 2012). Production emissions are also seen in the release of methane from ruminant animals. Ruminants, such as cows and sheep, release methane from their body when the gas is produced during the fermentation process involved in making their non-pasture feed (Weber and Matthews, 2008).

Weber and Matthews (2008) also tested whether eating local is truly better for the environment than other diet strategies, such as eating vegetarian. Production of beef and dairy products cause more emissions than growing plants because of factors such as ruminant methane releases discussed above. Therefore, eating less red meat and dairy is an effective way for an individual to reduce their carbon footprint. In their study, Weber and Matthews (2008) compared a reduced meat diet (considered attainable with small diet changes required) to that of a zero food miles, or completely local food diet (considered unrealistic). They found that -

“Only 21-24% reduction in red meat consumption, shifted to chicken, fish, or an average vegetarian diet lacking dairy, would achieve the same reduction as total localization” (Weber and Matthews, 2008, p.3512).

Such a finding further supports the notion that food miles only moderately contribute to the total carbon footprint of food. Only a small shift away from red meat will have the same environmental effect as completely cutting out food miles from one’s diet.

A prominent example is described in a study by Saunders et al. (2006) that compares the amounts of energy and carbon dioxide emissions used to produce lamb in New Zealand and the United Kingdom. Saunders et al. (2006) concluded that “energy used in producing lamb in the UK is four times higher than the energy used by NZ lamb producers, even after including the energy used in transporting NZ lamb to the UK. Thus, NZ CO2 emissions are also considerably lower than those in the UK” (p. vii).



The main reason why NZ lamb uses so much less energy and thus has a smaller carbon footprint than UK lamb, is that it is produced with processes that use much less energy. Production plays a large role in the environmental impact of food. Saunders and his colleagues go into significant depth in their research to identify and compare production practices and energy inputs for production in the two countries. These energy inputs

include direct fuel/electricity, nitrogen and energy used to build and maintain farm buildings, infrastructure, pasture and fences. Their numbers show a sharp contrast, with emissions from lamb production in NZ at 688 kg of CO2 per ton of lamb produced for market and emissions from lamb production in the UK at a staggering 2,849.1 kg CO2 per ton of lamb produced (Saunders et al., 2006).

Note: Total production emissions were measured in kilograms of carbon dioxide emitted per ton of lamb body weight produced. This is just one example. Production emissions vary based on specific details of the type of food, production practices, and location. Depending on the circumstances, a locally produced product may or may not be the environmentally worse option, in terms of energy used and greenhouse gas emissions generated.

An important point to take away is that fewer food miles does not necessarily imply less environmental impact, especially when the largest proportion of environmental impact comes from how food is produced, not how far it travels. Furthermore, small changes in one’s diet, such as eating less red meat and dairy, will allow you to have a much greater impact on your carbon footprint than focusing primarily on eating locally grown food.

ABOUT THE AUTHOR

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