



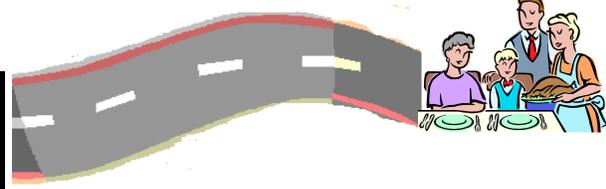
## Marketing and the Food Miles Concept

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The packaging and advertising of value-added agricultural food products often emphasizes “locally-grown” or “locally-processed.” Some consumers perceive added benefits of purchasing local products over competing non-local products such as freshness, better nutrition and support of local farmers. A recent publication by the Leopold Center for Sustainable Agriculture discusses the related concept of *food miles*.<sup>1</sup> This fact sheet will provide some information on the food miles concept, provide an example of how to calculate the food miles for a value-added product and discuss how the concept may be used in marketing activities.

### What are *food miles*?

Food miles are defined as “the distance food travels from where it is grown to where it is ultimately purchased or consumed by the end user.” The average number of food miles in the United States appears to be increasing. A study completed in 1969 estimated that food traveled an average distance of 1,346 miles from where it was produced to where it was consumed.<sup>2</sup> In another study conducted in 1980, the number of food miles for fresh produce reached 1,500 miles.<sup>3</sup> An increasing trend in the share of produce imported into the United States since 1970 also provides evidence that food miles are increasing. The study by the Leopold Center estimated that the average food miles for locally-grown produce in Iowa was 56 miles while produce from sources outside the state would have traveled an estimated 1,494 miles to reach consumers.



## How to Calculate Food Miles for a Value-Added Product

It is possible to calculate the number of food miles for value-added products. The simplest calculation can be done when there is only one location where the products are produced and only one location where the products are sold. The food miles in this situation would equal the distance between the production location and the sales location.

The calculation gets slightly more complicated when there is more than one production or sales location. In this case, the food miles can be calculated using a Weighted Average Source Distance (WASD) formula. The formula gives an average distance based on the amount of the product transported from each production location to each sales outlet.

Several pieces of information will be needed to calculate the WASD. A table has been developed to organize the for a product with up to three production locations and three sales outlets. The process can be followed for any number of locations production and sales locations, however. Steps to filling out the table and computing the WASD calculation are given below. An example illustrating how Farmer John would fill in the table and calculate the WASD for his salsa product is also provided.

	Sales Locations					
	A.		B.		C.	
Production Locations	<i>Amount</i>	<i>Distance</i>	<i>Amount</i>	<i>Distance</i>	<i>Amount</i>	<i>Distance</i>
1.						
2.						
3.						

Farmer John's Salsa	Sales Locations					
	A. Franklin		B. Crossville		C. Nashville	
Production Locations	<i>Amount</i>	<i>Distance</i>	<i>Amount</i>	<i>Distance</i>	<i>Amount</i>	<i>Distance</i>
1. Spring Hill Farm	500 jars	14 miles	0 jars	107 miles	700 jars	30 miles
2. Crab Orchard Farm	0 jars	110 miles	300 jars	9 miles	600 jars	108 miles
3.						

1. In the first column of the table next to the numbers **1, 2 and 3**, write down the locations (farm or community name) where your product is produced.

*Example: Farmer John produces salsa in 1. Spring Hill and 2. Crab Orchard.*

2. In the second row next to the letter **A, B and C**, write down the names of the outlets where your product is sold.

*Example: Farmer John sells his salsa in A. Franklin, B. Crossville, and C. Nashville.*

3. Under the **Amount** heading (in the shaded columns), write down the amount of product sold at each sales location (A,B,C) from each production location (1,2,3).

*Example: At the Franklin store (Sales Location A), Farmer John sells 500 jars of salsa from his Spring Hill farm (Production Location 1) and 0 jars from the Crab Orchard Farm (Production Location 2). At the Crossville store (Sales Location B), Farmer John sells 0 jars from the Spring Hill farm (Production Location 1) and 300 jars from the Crab Orchard Farm (Production Location 2). At the Nashville store (Sales Location C), Farmer John sells 700 jars from the Spring Hill farm (Production Location 1) and 600 jars from the Crab Orchard farm (Production Location 2).*

4. Under the **Distance** heading, write down the number of miles between the corresponding sales and production location.

*Example: The distance to Franklin (Sales Location A) from the Spring Hill farm (Production Location 1) is 14 miles while the distance from the Crab Orchard farm (Production Location 2) is 110 miles. The distance to Crossville (Sales Location B) from the Spring Hill farm is 107 miles and the distance from the Crab Orchard Farm is 9 miles. The distance to Nashville (Sales Location C) from the Spring Hill farm is 30 miles while the distance from the Crab Orchard Farm is 108 miles.*

5. The final step is to perform the WASD calculation. The formula is the sum of the **Amount** of product for each combination of production and sale locations multiplied by the **Distance** between the production and sales locations divided by the total **Amount** of product as follows:

$$\text{WASD} = \frac{\text{Sum of (Amount multiplied by Distance)}}{\text{Sum of Amount}}$$

*In Farmer John's example, the WASD would be calculated as follows:*

$$\frac{(500 \text{ jars} * 14 \text{ miles}) + (0 \text{ jars} * 107 \text{ miles}) + (700 \text{ jars} * 30 \text{ miles}) + (0 \text{ jars} * 110 \text{ miles}) + (300 \text{ jars} * 9 \text{ miles}) + (600 \text{ jars} * 108 \text{ miles})}{500 \text{ jars} + 0 \text{ jars} + 700 \text{ jars} + 0 \text{ jars} + 300 \text{ jars} + 600 \text{ jars}} = \frac{95,500}{2,100} = 45 \text{ miles}$$

*The average number of food miles that Farmer John's salsa travels from his farms to his markets is 45 miles.*

## Marketing Using the Food Miles Concept

The concept of food miles can be used in marketing efforts to strengthen the consumers' positive perception of locally-produced commodities and value-added products. Indications of food miles for products may be beneficially placed on packaging, point of sale materials and advertising materials. Incorporating the food miles concept into marketing could help to differentiate products from the competition. Some consumers will be interested to learn that they have the option of purchasing and consuming products grown and processed within a short distance of their homes. Consumers are particularly be interested in how relatively lower food miles affect the freshness, quality and taste of the product.<sup>1</sup>

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<sup>1</sup> Pirog, Rich and Andrew Benjamin. *Checking the food odometer: Comparing food miles for local versus conventional produce sales to Iowa institutions*. Leopold Center for Sustainable Agriculture. July 2003. Available online 16 October 2003

[http://www.leopold.iastate.edu/pubinfo/papersspeeches/food\\_travel072103.pdf](http://www.leopold.iastate.edu/pubinfo/papersspeeches/food_travel072103.pdf).

<sup>2</sup> U.S. Department of Energy. *U.S. Agriculture: Potential Vulnerabilities*. Stanford Research Institute, Menlo Park, CA. 1969.

<sup>3</sup> Hendrickson, John. 1996. *Energy use in the U.S. food system: A summary of existing research and analysis*. Sustainable Farming-REAP-Canada. Ste. Anne-de'Bellevue, Quebec. Volume 7, Number 4. Fall 1997.