Rural Food Deserts

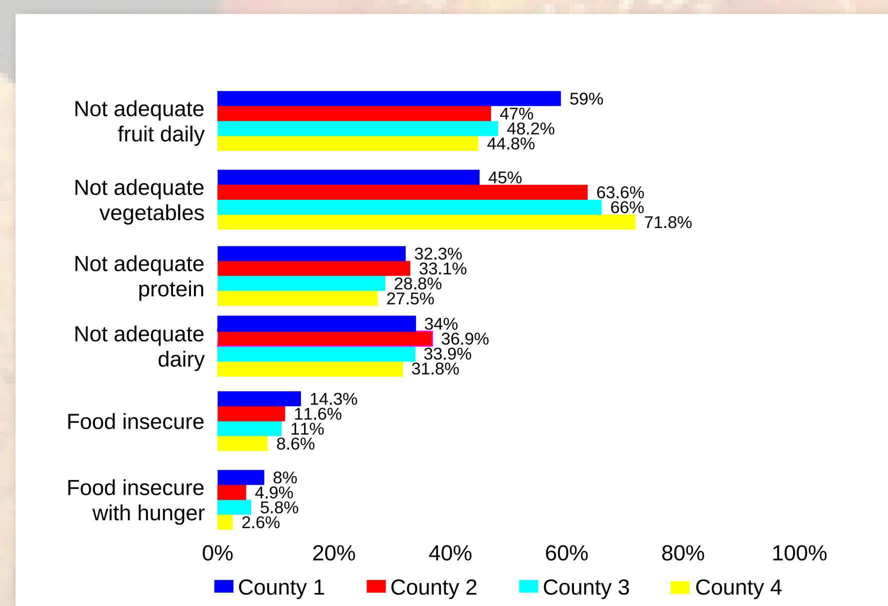
Food Price Comparisons

Local Grocery Stores and Out-of-County Wal-Mart

What's the Problem?

The food infrastructure is an important component of rural social and economic well-being. Access to a grocery store is often a proximity and complex transportation issue of vehicle ownership, maintenance costs, fuel costs, and driving capacity. A growing *at-risk segment of the rural population—elderly and low income households*—are disproportionately found in rural compared to more urban places. These at-risk populations have both nutritional adequacy and food insecurity problems that lead to poor health and well-being.

A second concern is the *economic stability of rural towns.* Supermarkets are an essential retail business and a cornerstone of the business district which draws rural residents for food and then other goods and services. Economic stability is important for providing rural resident services and quality of life amenities that meet current expectations and seed future economic growth.



Food Deserts: Rural Iowa Nutrition, 2002-2003.

Rural grocery stores are a critical component of the rural infrastructure. Consolidation in the grocery store industry has resulted in the loss of many small town food stores. This gap in consumer food services has been replaced by new rural regional superstores such as Wal-Mart, Kmart and Target. These stores offer important services but also undermine local grocery stores that continue to struggle to provide groceries closer to where people live. In this research we examine distances to out-of-county superstores and compare prices on 149 items drawn from the USDA Thrift Food Plan.

Rural Iowa Food Shopping Access Patterns 2003-04

		Population (2000)	Percent Usually Shopping Out-of-County	Miles to Nearest Wal-Mart	Not Enough Grocery Stores	Grocery Stores Not Easy to Get to/No Stores	Percent 21 Minutes or More to Grocery Store	Number In-County Grocery Stores
N=374	County 1	8,690	13.3		72.5%	59.2	32.4	2 Total
	County seat	1,982		56.5				1
	City 2	2,444		62.6				1
N=349	County 2	8,016	13.1		30.2	31.9	29.0	2 Total
	County seat	3,636		20.5				2
N=400	County 3	16,900	27.6		15.3	4.1	18.5	3 Total
	County seat	7,812		35.6				3
N=393	County 4	10,147	25.8		12.2	3.6	16.7	4 Total
	County seat	3,958		24.5				2
	City 2	813		28.0				1
	City 3	862		46.2				1

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Findings

The average distance from rural population centers to the closest seven out-of-county Iowa Wal-Marts is 39 miles (range 21 to 63 miles). We find that Wal-Mart frozen juices, most breads and cereals, meats and meat alternatives, sugars and sweets and canned vegetables are usually less expensive or competitively priced compared to local rural stores (Table 3). Wal-Mart is significantly higher priced on three high volume dairy products: cottage cheese, 2% milk, and whole milk. Although Wal-Mart is less expensive on 25 of 29 breads and cereal items, they are significantly higher priced on four frequently purchased items: white bread, dinner rolls, popcorn, and oatmeal. Other items that are higher priced are frozen green beans, chicken thighs, butter, Coke, macaroni and cheese, and cheese pizza. This pattern suggests that high demand items are likely to be more costly at the surveyed Wal-Marts compared to the in-county rural grocery stores. A comparison of selected items from all 14 surveyed Iowa grocery stores and U.S. urban food prices (Table 2) reveals that Iowa food prices are lower overall during this time period.

This project is a partnership among Iowa State University Departments of Sociology, Food Science, and Human Nutrition, and Human Development and Family Studies. It was funded by the ISU Center for Designing Food to Improve Nutrition and the Iowa Department of Public Health. Individual technical reports are available electronically on the ISU Extension hunger web site (www.extension.iastate.edu/hunger).

What is a food desert?

There is no official definition of a food desert. The concept relates to a few or no supermarkets or grocery stores for residents to purchase foods on a regular basis within a specified area. Communities could be food insecure when there are inadequate resources for local community residents to purchase foods in sufficient quantity or variety at affordable prices. The capacity to purchase foods means a retail commercial establishment that sells foods must be within a reasonable travel distance. "Reasonable travel distance" is a value judgement that rural households make regarding ease of access.

Table 2. Food Price Comparisons: Selected Rural Iowa Grocery Stores and U.S. City Averages

Food Item (price/lb)	Iowa Rural Average[1]	Wal-Mart[2]	U.S.[3]
Flour, white, all purpose, enriched	0.23	0.25	0.32
Rice, white, long-grain, enriched	0.48	0.48	0.46
Spaghetti enriched (any variety)	0.92	0.66	0.87
Bread, white, enriched	0.64	0.71	0.99
Beef, ground, lean	2.04	1.45	2.02
Chicken, fryer, cut-up or whole	1.02	0.67	1.02
Eggs, grade A, large	0.99	0.79	1.26
Butter	1.72	2.93	2.86
Apples, any variety (bagged or loose)	0.68	0.52	1.02
Bananas	0.49	0.33	0.49
Oranges, any variety (bagged or loose)	0.85	0.53	0.85
Potatoes (any variety)	0.39	0.34	0.44
Lettuce, Leaf (green or red)	1.13	1.73	0.90
Tomatoes (any variety)	1.19	1.22	1.44
Broccoli, bunch	1.26	1.45	1.30
Orange juice, concentrate	1.49	0.96	1.90
Sugar, white, granulated	0.32	0.36	0.41
Margarine, stick	0.64	0.51	1.00
Peanut butter, smooth	1.59	1.23	1.89
Total	**18.07**	**17.12**	**21.44**

[1] Rural average is the average grocery prices in 11 grocery stores in rural Iowa (4 Summer 2002; 7 Fall 2003).
[2] Wal-Mart average – 3 superstores (Fall 2003).
[3] Food prices are U.S. city average in September 2003. Source: "Family Economics and Nutrition Review," 2003. 15(1):101.

Table 3. Rural Iowa Food Deserts: Food Price Comparison Between In-County Grocery Stores and Out-of-County, Neighboring Wal-Mart (In-County Grocery Stores N=11; Wal-Mart N=3)

Food Category	Total Number of Items	Number of Items Rural Store Higher Priced	Number of Items Wal-Mart Higher Priced	Number of Items Significant Price Difference	Percent Total Items Significant Different Price	Comments
Fresh fruits	6	6	0	0	0	No difference
Fresh vegetables	13	5	8 (cabbage, carrots, celery, leaf lettuce, onions, potatoes, spinach, squash)	2#	15.4	Wal-Mart more often higher than local rural stores; significant in 2 items
Canned fruits	7	5	2 (pears, mandarin oranges)	3*	42.8	
Canned vegetables	9	8	1 (canned mushroom pieces)	2*	22.2	
Frozen juice	3	3	0	2#	66.7	Wal-Mart always cheaper
Frozen fruit and vegetables	7	6	1 (green beans)	3#	42.8	
Breads and cereals	29	25	4 (white bread, dinner rolls, reg. popcorn, oatmeal)	20*	69.0	Wal-Mart significantly lower except for popular items
Milk and dairy	11	5	6 (cottage cheese, mozzarella, 2% milk, whole milk, skim milk, 1% milk)	4**	36.4	Wal-Mart significantly higher priced cottage cheese, 2% milk, whole milk
Meat and meat alternatives	20	16	4 (chicken thighs, canned chicken, frozen catfish, frozen perch)	4*	20.0	Rural stores significantly higher priced
Fats and oils	6	5	1 (butter)	2#	33.3	
Sugars and sweets	14	12	2 (Coke, powdered sugar)	5#	35.7	
Pre-prepared convenience foods	5	3	2 (macaroni & cheese, cheese pizza)	3#	60.0	

#p>.10 Summer 2002 (4 rural stores)
*p>.05 Fall 2003 (5 rural stores and 3 Wal-Mart
**p>.01 CPI food inflation rate 3.6% increase 2002 to 2003

Policy Options

What can be done? Who should do it?

Individual Responses

1. Encourage and expand food exchanges, personal networks of kin, friends, and neighbors.
2. Increase access to garden produce (your own and/or a friends/neighbors).

Community Responses

1. Support efforts to keep independent grocery stores and the Independent Grocery Association viable. Reasonable wholesale prices and distribution networks are essential for the independent grocery.
2. Push "shop local" efforts. This can revitalize downtown including the local grocery.
3. Connect local food production to local markets. (Farmer markets, niche markets, special delivery to disabled and elderly adults.)
4. Strengthen the safety net. Encourage existing and create new voluntary organizations that support school lunch programs, meals on wheels, meal sites, food pantries, community gardens and other safety net programs.
5. Aging in place resources. Community leaders need to analyze their local food and transportation infrastructure and how it impacts older residents. Public transportation is currently almost non-existent in rural areas; bus, taxi, and rail lines that may have existed 50 years ago are gone and financing for new transportation infrastructure seems beyond the reach of public affordability.

Research Design

Rural counties in the United States have on average 3.8 grocery stores (Morris et al. 1992). This study defines a rural Iowa food desert as a county with 4 or fewer grocery stores. Thirteen counties fit this definition in 2000. Four rural Iowa counties were selected for this study based on three criteria: 1) 4 or fewer grocery stores, 2) counties with places with less than 10,000 people and not adjacent to metro counties based on urban influence using 1993 ERS codes (Gehelfi and Parker 1997), and 3) above state poverty levels (9.9% in 1997). A stratified random sample of the general population in each county was conducted in 2002 and 2003 using the Dillman mail survey methodology. Response rates ranged from 60% to 64% for a total of 1,513 completed surveys. The survey asked respondents questions about access to food in their community, community efforts to solve food infrastructure problems, food insecurity, food and diet patterns and health status. The eleven grocery stores in these counties were price surveyed Summer 2002 (4 stores) and Fall 2003 (7 stores) using the USDA Thrift Plan food list of items (see www.extension.iastate.edu/hunger/foodprice.htm for complete list of 149 food items in the survey). Three Wal-Mart superstores that were closest to these counties but not located within them were surveyed Fall 2003.

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