



Are Local Tomatoes More Expensive? A Comparison of Price Trends between Farmers Markets and Grocery Stores

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This publication provides growers and buyers with price trends of tomatoes, a major specialty crop for Indiana vegetable farmers. We compared price data from Indiana farmers markets, collected by Purdue researchers, to grocery store prices collected by the US Department of Agriculture –Agricultural Marketing Service (USDA-AMS). This article illustrates pricing differences between grocery stores and farmers markets and discusses the implications of the key findings.

Introduction

Tomatoes are harvested for fresh market or processing. Processing tomato has been an important crop for the Indiana specialty crop industry, but fresh market sales have increased in significance in the past decade. Slicing tomato has become one of the most important crops for local farmers due to its versatility and diversity of varieties. According to Torres and Marshall (2016), 77 percent of Indiana vegetable farmers grow tomatoes. The popular crop can be found in farmers markets and grocery stores in various shapes and colors.

According to the 2012 Census of Agriculture, of the 10,410 harvested acres of tomatoes in the open field in Indiana, 9,979 acres were for processing, and 431 acres were for fresh market. The Indiana counties with highest tomato area production in the open were LaPorte with 1,884 acres, followed by Grant (1,191 acres), and Cass (816 acres). Tomatoes are warm-season crops that are typically planted after the day of last frost in Indiana (Lerner, 2018). Depending on the zone, tomatoes can be planted in mid-April (southern Indiana) to mid-May (northern Indiana).

Market Outlets for Fresh Market Tomato

Most vegetable farmers sell fresh market tomatoes through two main outlets: direct-to-consumer (DTC) and wholesale/retail markets. DTC markets, such as farmers markets and roadside stands, are channels where the farmer sells fresh produce directly to consumers, establishes relationships with customers, and acquires a higher share of the dollars paid by the consumer (Torres & Marshall, 2016). Farmers markets have gained importance due to increasing consumer demand for local foods and growing concerns about agricultural practices (Claro, 2011). The demand for local foods has contributed to an increase of 400 percent in the number of farmers markets in the US since 1994. There are more than 8,700 farmers markets in the US and almost 200 in Indiana (USDA-AMS, 2018).

Farmers markets are usually the main market channel for small farmers and have become complementary ones for medium and large growers who want to improve their cash flow (Feenstra, Lewis, Hinrichs, Gillespie, & Hilchey, 2003). Torres and Marshall (2016) surveyed specialty crops growers in Indiana and found that 63 percent of the respondents sell their products through farmers markets. The same study found that these farmers grow on average 20 crops, use organic practices, and sell to four market outlets located ~15 miles away. It seems that the smaller the farm, the bigger the reliance in DTC markets (Monson, Mainville, & Kuminoff, 2008).

A nationwide study found that consumers prefer to buy at farmers markets due to their perception that produce sold at farmers markets tastes better, is of higher quality, and is fresher (Keeling, Thilmany, & Bond, 2006). These local markets allow farmers to capitalize on trust-based relationships with customers to build customer loyalty, increase brand awareness, and obtain price premiums (Torres & Marshall, 2016).

Despite the economic opportunities of farmers markets and other local markets, not every farmer sells through farmers markets. According to Uva (2002), one of the main barriers to selling at farmers markets was the competition in a saturated market, the need for special marketing skills, and the farm location with respect to the market. Labor and time requirements to harvest, prepare, transport, and sell produce at farmers markets are also barriers. It is common practice among farmers market vendors to harvest produce the day before the market day and hire additional employees to sell produce for 5 to 8 hours. In addition, farmers markets may not be a good outlet for farmers who rely on economies of scale to specialize their operation with few crops or farmers selling a larger volume of produce.

Wholesale and retail markets are an efficient way for farmers to push larger amounts of fresh produce through a centralized buyer. Farmers selling to wholesalers can save delivery time as well as costs related to transportation and post-harvest activities (e.g., sorting, grading). Data from Torres and Marshall (2016) reported that farmers selling through wholesale and retail markets tend to grow fewer crops, own bigger farms, and sell to fewer market outlets, relative to farmers selling in local markets. It is likely that these larger operations have better conditions to meet the wholesalers' requirements, such as high-volume demand, certifications, and Good Agricultural Practices (GAP) audits (Monson et al., 2008).

Wholesale/retail markets allow farmers to turn over the distribution and risk associated with the sale of fresh produce to a central buyer. Typically, centralized buyers handle the inspection, quality control, sorting, grading, and selling of the fresh produce. Depending on their vertical integration, buyers may have their own retail operation or resell fresh market produce to other wholesalers or retailers. Due to the presence of various players in the wholesale/retail market outlet, producers selling through this market receive a smaller share of the consumers' dollars. According to the USDA-ERS (2018), farmers selling tomatoes to wholesalers/retailers received, on average, 23 percent of the retail price.

Availability of Price Information

Regardless of the market channel, price is one of the most important drivers of farm sustainability but one of the factors least controlled by growers. Having access to price reports can help farmers make informed decisions and react to market demand. Price reports can provide growers with price benchmarks for crops and different markets and give them data to calculate market conditions, detect demand trends, and make investment decisions.

Information on pricing and product quality requirements are generally available for farmers with enough volume to enter wholesale markets. Due to the centralization in wholesale/retail markets, farmers selling through these outlets tend to have access to prices in advance, which promotes the efficient allocation of resources and adoption of new technologies. Pricing information helps these larger operations overcome risk and uncertainties and save time and money when accessing mainstream markets (Brown, 2002). On the other hand, farmers selling in local markets face the lack of pricing and sales information. To overcome this lack of data, the Purdue Horticulture Business Extension program began collecting prices of farmers markets in Indiana in 2017.

Data and Methodology

The data for this article came from two sources: a project led by Purdue Horticulture Business Extension Program (farmers market prices) and the USDA-AMS (grocery store prices).

Farmers Markets Data

In 2017, the Purdue project collected weekly fruit and vegetable price reports from nine farmers markets located in Indiana (purdue.ag/hortbusiness). A team

of researchers, students, county extension educators, and farmers market managers collected the highest and lowest weekly prices of more than 105 specialty crops sold at the markets. The team collected the prices of tomatoes, lettuce and salad mixes, cucumbers, strawberries, apples, onions, okra, kohlrabi, bok choy, leek, and others. This article focuses on prices of tomatoes, the top specialty crop grown by Indiana vegetable farmers (Torres, 2017).

Farmers markets participating in 2017 included Bloomington (Monroe County); Boonville (Warrick County); Corydon (Harrison County); Culver and Plymouth (Marshall County); Kokomo (Howard County); and Lafayette and West Lafayette (Tippecanoe County). Figure 1 illustrates the county location of the nine farmers markets located in 8 counties. See Torres and Pinto (2018) for more information on how the data was collected.



Figure 1. Counties with farmers markets participating in the Purdue Horticulture Business project in 2017 are in yellow.

Retail Data

Since 1915, the USDA-AMS surveys approximately 500 retailers, including more than 29,000 individual stores, to collect wholesale, retail, and shipping prices (www.ams.usda.gov). These reports provide the highest and lowest price of a wide variety of agricultural products, including fruits, vegetables, and specialty crops. The USDA-AMS developed these reports in response to the lack of market information and the perishability and seasonal nature of agricultural products. This article focuses on the weekly prices of tomatoes sold at Midwest retail grocery stores.

Results

This report focuses on fresh market tomatoes due to their popularity in farmers markets and grocery stores in Indiana. The 2017 farmers market season started in April and ended in November in Indiana. For this period, we analyzed the highest and lowest prices of tomatoes, and compared the trends between farmers markets and major grocery stores. By comparing these weekly prices, we are able to provide insights about the price differences and trends among these two market channels.

Tomato Prices

Figure 2 illustrates the lowest and highest prices of tomatoes sold at farmers markets and grocery stores. In 2017, farmers markets in Indiana sold tomatoes from April 24 to November 19, a total of 29 weeks. The highest price of slicing tomatoes throughout the 2017 farmers market season was \$5.00, and the lowest price was \$1.00 per pound. At the start of the market season, highest

and lowest prices for farmers markets were the same at \$3 per pound, but prices started to diverge as the season progressed. The largest price gap for farmers market tomatoes occurred between July and September, the time of highest supply in Indiana. The farmers market supply of tomatoes ended in November, with tomatoes sold between \$2.99 (highest price) and \$2.50 (lowest price).

Contrary to farmers markets, grocery stores in Indiana sold slicing tomatoes every week of the year, mostly due to imports from other countries or states. Figure 2 shows the highest and lowest prices sold at grocery stores in the Midwest. The highest price per pound in 2017 was \$4.99; the lowest price was \$0.39 per pound. Figure 2 shows the greatest price gap between the lowest and highest prices of retail tomatoes occurred during the third week of February and the first two weeks of July. The smallest price gap of retail tomatoes occurred during the second week of October and last week of November.

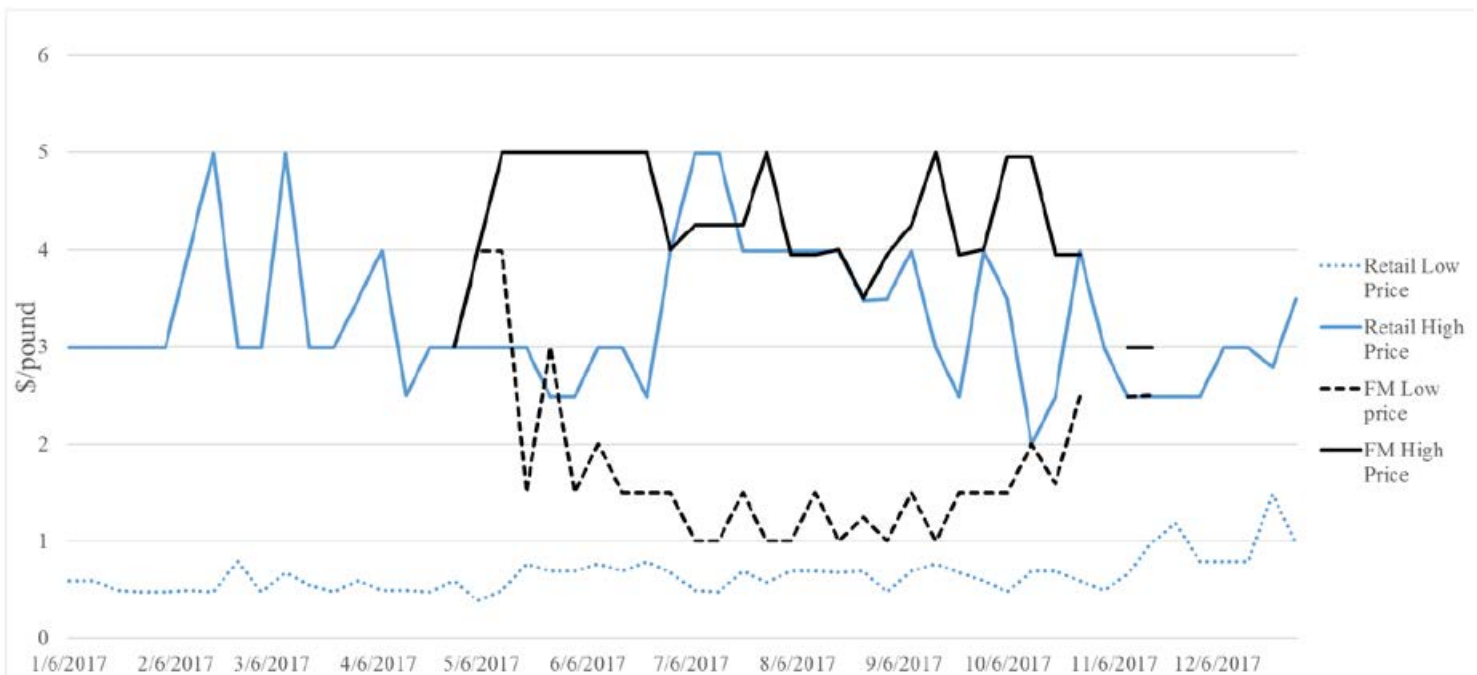


Figure 2. Lowest and highest prices of slicing tomatoes sold at Indiana farmers markets and grocery stores in 2017.

Figure 2 illustrates price per pound of tomatoes sold at farmers markets and grocery stores. The lowest price of tomatoes was always lower at grocery stores throughout the season. The lowest price in 2017 was \$0.39 per pound at grocery stores and \$1.00 per pound at farmers markets. In contrast, both grocery stores and farmers markets reached the same highest price of slicing tomato (about \$5.00 per pound) during July-September.

A potential factor for higher tomato prices at both farmers markets and grocery stores is the supply of heirloom tomatoes in July-September. According to Jordan (2007), heirloom tomatoes are considered to be a specialty type that receive price premiums in most marketplaces.

Another way to compare price trends between farmers markets and grocery stores is by using mid-prices.

Mid-prices are defined as the halfway price between the highest and lowest prices. Figure 3 compares the mid-prices of tomatoes between farmers markets and retail stores. The season average 2017 mid-price for farmers markets (\$3.03 per pound) was higher than for grocery stores (\$1.97 per pound). Similarly, mid-prices for farmers markets were higher than for grocery stores at each week throughout the 2017 season. In addition, mid-prices for farmers markets were higher at the beginning of the season (April and May), but they started falling in July and August, recovered some in September/October, and decreased again in October/November.

Interestingly, the lowest mid-prices at farmers markets coincide with highest mid-prices at retail stores, which highlights the price responsiveness of these two market outlets. Farmers market vendors may decrease tomato prices as a response to the harvesting peak occurring between July and September. On the other hand, retail stores may be capitalizing on the supply of heirloom and other specialty varieties of tomatoes to receive higher prices. Figure 3 shows that the gap in mid-prices between retail and farmers markets increases again at the end of the season.

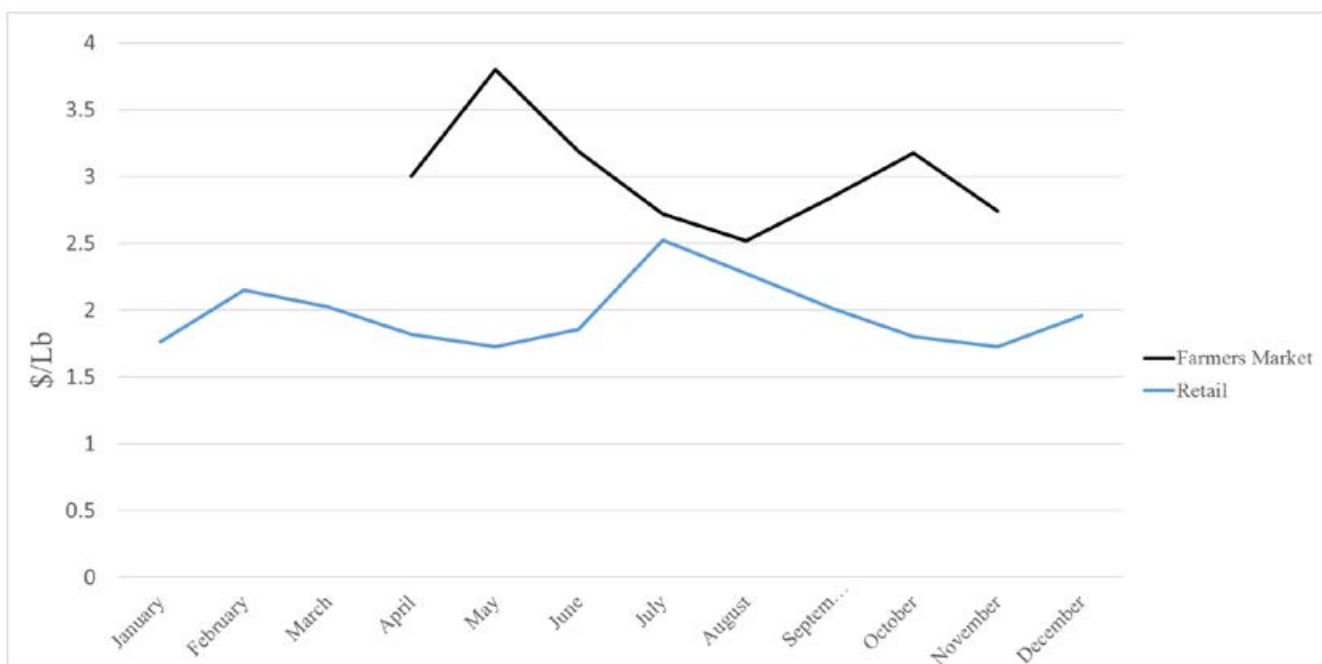


Figure 3. The tomato mid-prices at farmers markets and retail stores in 2017.

Conclusion

This publication provides growers and buyers with price trends of tomatoes, a major specialty crop for Indiana vegetable farmers. We compared price data from Indiana farmers markets (Purdue, 2017) to grocery store prices collected by the U.S. Department of Agriculture –Agricultural Marketing Service (USDA-AMS). Farmers markets prices of tomatoes in Indiana seemed to respond to the increasing demand for locally grown foods. We also found that price variability of tomatoes is driven by seasonality and type of market outlet. In 2017, tomatoes sold through Indiana farmers markets were, on average, more expensive than those sold through grocery stores. Moreover, farmers market prices were

higher at the beginning of the season (April, May) than at the harvesting peak or the end of the season.

The results reveal that growers selling in local markets can take advantage of higher prices of produce by selling at farmers markets. Growers selling through farmers markets receive, in general, a higher price for their produce and get a higher share of the consumers' dollar by eliminating intermediaries. The results also show that tomatoes sold at grocery stores can be as expensive as tomatoes sold at farmers markets, especially between July and September. Thus, our findings report that produce sold at farmers markets is not necessarily more expensive than in grocery stores.

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