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## **Electronic Point of Sale Systems Bring New Opportunities to Improve Sales for Farmers Market Vendors**

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IPads and point of sale (POS) systems are certainly not new, but they are growing in popularity among farmers market vendors. POS systems provide a quick and easy means for farms to gather customer transaction data. In turn, this data can be analyzed to reveal growth opportunities for market sales. In the summer of 2018, eight Ithaca-area vegetable farms participated in research using POS to collect detailed data on customer spending at farmers markets. This article is a highlight of early findings from the project. Combined, the 8 project farms participated in 16 markets per week. Among all farms and markets, the project observed just shy of 20,000 customer transactions.

We theorized that studying market metrics such as customers/hour and dollars/transaction, would reveal opportunities to favorably influence average daily gross sales (ADGS). Beginning in June 2018, farmers set up the POS system on tablet devices, including each item they were selling and its price. A programmed POS allows the farm to “ring up” a customer quickly and easily and saves the details of each transaction for export to a spreadsheet. As a customer’s order is rung up, the POS software collects: items in the shopping cart, price of each, order total, date and time, and payment method. In addition to transaction details, we observed the weather, number of items that farm had available, and the number of other vendors at each market.

After a season, the data set was large enough for analysis. We used farm data to calculate valuable market metrics including, customers/market, customers/hour, dollars/customer transaction, customer item count, and average item value.

Thus far the project collected sales data from one season, creating a baseline for each farm and the aggregate of all farms in the study. Therefore we have not tested any techniques to increase ADGS. We have basic statistics that serve as useful benchmarks for farms to compare their own market data against. Such a comparison informs farms where they can most benefit from changes. Below is a summary of observations and suggested (but untested) techniques which have the potential to increase sales.

**Customer Counts:** Regardless of market start time or day of the week, the trend for Ithaca-area markets was for the highest customer spending and highest customer counts to occur in the first hour of the market. In fact, we observed anecdotally and from recorded transactions that shoppers are eager to make purchases before the market's official start time. Therefore, farms might be able to capture more sales by being completely ready for customers before the market's official start time (when permitted by market rules). Later in the market, customer spending and customer counts drop steadily. This suggests that farms might benefit from trying to engage late-market shoppers with signage, samples, and specials.

**Market Size:** There has long been debate among farmers market managers and vendors about whether to limit the number of vendors selling similar products. While our research did not directly address this question it did reveal interesting results. The markets used by participating farmers ranged in size from 11-93 total vendors and 4-15 vegetable vendors. When controlling for all other factors, we found that larger markets increased customer transaction size. This seems to indicate that shoppers at larger markets are prepared to spend more. However, both customer counts and daily sales take a hit at larger markets, presumably because there are more vendors from which customers may choose.

**Item Value and package size:** At many of the observed markets, a surprisingly high proportion of shoppers spent \$3 or less with farms. The average item value across all transactions in the project was \$3.38. The proportion of customers spending \$3 or less across the 16 markets ranged from 14-45% with the average at 28%. For farms seeking to increase customer spending due to a high proportion of low-spenders, one potential technique is to pack products into sizes priced at \$3 or higher and eliminate products priced below \$3. For example, instead of selling garlic for \$1.50/head, farms might try to pack garlic heads in twos and charge \$3. This is not a unit price increase, just an increase in package size in order to increase the minimum a customer will spend with the farm.

**Unit price increases:** Prices for individual products varied among the participating farms. Of course, an opportunity for farms to increase customer transaction size might be to simply

raise prices but at the risk of reduced sales. While our project did not calculate price elasticities for individual vegetable crops, we do have some indication of consumer willingness to pay. Are there opportunities for farms to increase prices on best-selling items? Depending on the size of the price increase, it is possible to lose some customers (sell fewer units) and still reach the same sales target. If sales drop, at least it results in reduced harvesting, washing, and packing which is a labor savings. However, if sales levels are maintained or drop only slightly, the farm stands to increase revenue.

Table 1: An example of different prices and quantities of sales to reach the same approximate sales goal. This example illustrates the potential for farms to increase gross sales by raising prices.

HEAD LETTUCE, PRICE/HEAD	UNITS SOLD	GROSS SALES
\$2.75	200	\$550
\$3.00	185	\$555
\$3.50	158	\$553

**Items per customer:** The average customer across all farms and markets purchased 1.8 items. For farms looking to increase customer item count, the simplest approach is to try to influence single-item customers to purchase a second item. A few techniques have potential to accomplish this. One idea is to offer a variety of items in units that are priced similarly. This would allow for promotions and signage such as “Any 2 items for \$7,” and “3 for \$10.” Farmers in the project also considered bundling items into an “all this for \$20” pack. Another idea is to offer more varieties and sizes of the most popular crops to incite impulse purchases. A final idea is to suggest items to customers when they cash out such as “do you want to get some garlic to go with these tomatoes?” Anecdotally, farms report that they are often successful with well-crafted suggestions.

We continue to work with the results of this project. This initial article is written to share some of the early results along with practical suggestions to benefit farmers market vendors. We suggest trying out a POS system at market. Programming the software with all your products and prices is easy, and entering every sale, whether cash, credit card or other payment, is quick. Once enough data is gathered, a little time spent crunching the numbers gives a baseline for the operation’s sales metrics. Next, you can test techniques at market and look for the impacts. Remember, you CAN improve what you DO measure!

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