The wholesale produce auction: An alternative marketing strategy for small farms

Stephan Tubene and James Hanson

Abstract. *Small farmers urgently need alternative marketing strategies if they are to achieve the goals of a more sustainable agriculture. This study was a survey of nine Pennsylvania wholesale produce auctions, all established between 1984 and 1998. The main goals of the auctions were to serve local communities, provide high-quality produce to local consumers and make profits. The results showed that the auctions typically employ an average of 7–10 people per growing season. The five most common commodities sold were cantaloupe, watermelon, tomato, pumpkin and sweet corn. Asparagus and onions were the least sold during a regular growing season. In terms of market share, roadside market operators purchased the largest proportion of produce (40%), followed by farmers (27%), chain food stores (16%), independent grocery stores (11%) and restaurants (6%), making up an average annual gross sale of $3.5 million per auction. The study revealed that the nine Pennsylvania produce auctions were successful in meeting their goals. The reasons for success included private ownership, excellent quality and freshness of produce, good location, local produce recognition, clientele availability and customer-oriented business. The auction managers identified some weaknesses, including inconsistent and poor grading, limited space in the auction facility, produce unavailability and limited volume, lack of cooling facility, price fluctuation and slow service. The study indicated that local wholesale produce auctions are a useful marketing alternative for small farmers in Pennsylvania, by providing marketing outlets and convenient shopping centers for sellers and buyers; by securing a source of fresh and locally grown produce not found in traditional wholesale terminal markets; and by allowing exchange and networking among farmers and buyers. Consequently, the wholesale produce auction can be a useful model for an alternative marketing strategy and can provide considerable benefits to small farm and rural communities.*

Key words: alternative agriculture, market share, produce marketing, risk management, roadside market operators, rural America, sustainable agriculture

Introduction

In recent years, small farms have struggled to keep up with economic and technological changes that have affected the US agricultural industry. The competitive world in which small farms operate, coupled with the development of giant firms, have created a risky and uncertain business environment for small farms. Should small farms market their produce through the traditional chain food stores and terminal markets, or are there other marketing strategies that small farms may adopt? According to Sustainable Agriculture Network (SAN, 1999b), farmers in very rural areas need to be more creative than their large farm counterparts located near population centers where there are more opportunities to interact with consumers. Small farmers' creativity may include options such as diversification, value-added products, cooperatives, wholesale produce auctions, mail order and Internet marketing. Alternative marketing strategies, as well as risk management tools, may be the key to the survival of small farms in the more remote areas.

Diversification is not only a risk management tool but also a technique that can protect the natural resources and spur community economic development. By diversifying their enterprises and marketing strategies, farmers could minimize the risk of losing all of their business if one enterprise fails. As recently reported by SAN (1999a), adding new crops into a rotation helps producers not only to make money but also to increase yields of the traditional crops in the rotation. In addition, marketing alternative crops directly often creates local opportunities to process, package and/or sell new products, spurring economic development within the community.

Significant changes in the US agricultural markets over the past decade have literally revolutionized the US food industry as a whole. Many interrelated factors have driven these changes, including technological innovation, increasing ethnic diversity, health consciousness, expanded advertising programs, prices, consumer income, new products and convenience (Schluter et al., 1998). According to Kohls and Uhl (1992), consumer tastes and preferences drive the nation's food and fiber system. For example, by meeting immigrant consumer preferences for ethnic produce, producers expand their market niches to new audiences and create new sources of income. Hence, the ultimate task of the food marketing system is to deliver the food consumers need. Barkema (1993) argued that a key job of the food market is to ensure that food products are accurately targeted at market niches, regardless of their size.

Developing a wholesale marketing strategy as an alternative marketing tool for produce can be time consuming, especially

S. Tubene is Coordinator, The Small Farm Institute, Maryland Cooperative Extension, University of Maryland, 7320 Ritchie Highway, Suite 210, Glen Burnie, MD 21061–3165; J. Hanson is Associate Professor, Department of Agricultural and Natural Resource Economics, University of Maryland, College Park, JD 20742. Corresponding author is S. Tubene (stubene@umail.umd.edu).

when it involves auction markets. Yet, this strategy may be a viable alternative for small farmers in rural communities to market their produce, since it provides both produce quantity and networking opportunities to the market participants.

According to Hanson and Rada (1992), farmers must seek out their own wholesale customers and deliver quality produce in order to succeed in the Mid-Atlantic wholesale produce markets. Forming agricultural cooperatives may also allow small farmers to pool resources to better serve wholesale customers.

A study by Blaine et al. (1996) on the effects of a wholesale fruit and vegetable auction on produce marketing and distribution indicated that an auction in north-east Ohio was an efficient and accepted part of the local food-marketing system. The auction improved the efficiency of the marketing system and also helped involved individuals and families reach their economic and social goals. In addition, the study concluded that wholesale fruit and vegetable auctions appeared to have considerable potential as economic development tools for communities with large Amish populations.

The objectives of this study were to (1) examine how Pennsylvania wholesale produce auctions operate, (2) evaluate strengths and weaknesses of their operations, and (3) determine whether a wholesale produce auction as an alternative marketing strategy is a viable marketing model for other small farm communities. The research was based on a survey of 9 (out of 10) Pennsylvania produce auctions (Tubene et al., 1999).

Data and Methods

A personal survey for use with auction managers was developed to answer the objectives of this study. The original questionnaire was reviewed and field-tested with a Maryland auction manager before using it to interview Pennsylvania produce-auction managers. The questionnaire contained five major components including auction personal data (name and address, person and date interviewed), general questions (business establishment, ownership and advertisement), market facility (size of the facility, equipment, record-keeping and number of employees), market operations (produce volume, numbers of sellers and buyers, market location and schedule, population served and educational programs) and business organizational matter (financial information, market strengths and weaknesses). The questionnaire was developed as single-time surveys (Duncan and Kalton, 1987) with both closed and open questions.

A list of auction managers was obtained from the owner of a wholesale produce auction in Pennsylvania. There are currently 10 wholesale produce auctions scattered throughout Pennsylvania. Nine produce-auction managers were personally interviewed in the spring and the summer of 1999 at their respective auction sites. One manager declined to be interviewed. Data were collected following a face-to-face interview method (Barnett, 1991). These data, collected from the nine produce auctions, represents a 90% response. All data were collected from auction managers, except for some financial details. Three auction managers did not disclose financial records of their operations for security and privacy reasons. Financial data were provided by six auction managers. Data were finally compiled and analyzed using WINSTAR (1994), an econometrics computer program. A descriptive statistics model was used to estimate the auction variables.

Results and Discussion

Market facility

Pennsylvania produce auctions are corporate and family-owned business wholesale markets, and the major goal of these is to serve local communities by providing a facility and a mechanism that brings producers and buyers together. Other goals are to offer high-quality produce to the market participants and to make profits (Table 1).

According to the survey, the typical size of the Pennsylvania auctions' building is about 21 m (70 feet) wide and 70 m (228 feet) long, representing a minimal investment of $1.5 million (Table 2).

Equipment used by most of the Pennsylvania auctions includes fork lift, hand pallet jack, electric jack, carts, boxes and office items. Other equipment, such as a produce cooling system, freezer and computers, are not common (only two used a cooling facility and one a freezer to store fresh produce). The cooling system was used to store more fresh produce and secure a higher demand for the produce. The freezer provided ice to the growers for their post-harvest needs at the produce auction.

All nine auctions maintained records of transactions that were primarily finance and sale records. Five managers said they maintained hand-written or manual reports. Five out of the nine auctions did not use computers for their daily operations, simply because they had not yet acquired this technology. The

Table 1. General description of nine Pennsylvania produce auctions.

Questions	Responses
Business ownership?	Private, corporation and family business
Major goal of the market?	Serve local communities; offer quality produce; make a profit for sellers
Market type?	Wholesale auction markets
External financial support?	None
Community involvement?	Local community support through farmers and buyers who do business with produce auctions
Means of advertisement?	Local newspapers, personal contact, direct mail, reputation, word of mouth, newsletters, meetings, long-term establishment

Table 2. Characteristics of nine Pennsylvania produce auction facilities.

Characteristics	Responses
Size of auction's building	Average size: 21 m × 70 m (70 ft × 228 ft) Largest size: 21 m × 107 m (70 ft × 350 ft) Smallest size: 18 m × 46 m (60 ft × 150 ft)
Equipment	Cooling system, freezer, forklift, carts, hand pallet jacks, electric jacks, boxes, office equipment
Transaction records	Finance records, sales records, manually written records
Use of computers	Very limited: mainly used for record keeping and auction transactions
Number of employees	7–10 (depending on the growing season)
Positions	Manager, assistant manager, auctioneer, treasurer, secretary, clerk, warehouse workers
Use of educational materials	Through Pennsylvania State University Cooperative Extension Service

remaining four used their own business computer software for record-keeping and auction transactions.

The produce auctions employed an average of 7–10 employees. These included an auction manager, an assistant manager, an auctioneer, a treasurer, a secretary, clerks and warehouse workers. The actual number varied with the season. A limited number of workers are needed at the beginning of the season, but as the peak is approached, more are hired to handle the growing volume of produce. While the manager position is often full-time, other duties may be accomplished on a part-time basis.

Auction managers were asked if they generated any newsletters and/or educational materials for the market participants, or the public at large. In general, they did not on a regular basis. Most published an auction guide each year at the beginning of the season to advertise their produce. The survey showed that 67% of produce auctions published a market report in local newspapers to advertise their businesses to the local community. For advertising, all of the auctions relied on word of mouth, direct contacts, reputation and their long-term establishment (Table 1). None of the auctions published educational materials. Nevertheless, educational materials, such as production pointers, pest management, horticultural and marketing fact sheets, were distributed to the market participants by the Pennsylvania State University Cooperative Extension Service.

Market operations

Prior to the produce harvest season (i.e., November–April), other products are sold, including flowers and bedding plants. The auction managers indicated that the average largest volume of produce items sold at Pennsylvania auction markets were cantaloupe (*Cucumis melo)*, watermelon (*Citrullus lanatus*), tomato (*Lycopersicon esculentum*), pumpkin (*Cucurbita pepo*), and sweet corn (*Zea mays* L.). Asparagus (*Asparagus officinalis*) and onions (*Allium cepa*) were the lowest volume items.

When asked about the number of sellers and buyers with whom they conduct business at a facility, the auction managers stated that, on average, approximately 300 growers market their produce, and 200 buyers purchase produce at each auction (Table 3). Among the 300 sellers and 200 buyers of produce, only 50 sellers (17%) and 90 buyers (45%) were regular attendees of an individual produce auction. The study indicated that roadside market operators purchased the highest proportion of the commodities (40%), followed by farmers (27%), chain food stores (16%), other grocery stores (11%) and restaurants (6%). In the case of farmers, some purchased produce for resale.

Most Pennsylvania produce auctions do not have special delivery arrangements with any businesses. Buyers and sellers meet at the auction, where produce items are exchanged after the auctioneer establishes the price through the bidding process. Only one produce auction had special delivery arrangements with local chain food stores.

Cooling systems were uncommon in the Pennsylvania produce auctions. Only two of the nine had cooling facilities. When questioned why there were not more, the managers replied that there was no need for these because of the quick turnover of the local fresh produce. Two managers indicated that such a facility could increase the availability of the produce over a longer time, as well as the volume. Thus, in some cases, a cooling facility would appear to be advantageous.

None of the nine produce auctions signed any contractual arrangements with businesses (i.e., restaurants, and chain food stores) for lack of any financial incentives. Commitment to specific businesses would limit their customer base and opportunities for better prices. According to the auction managers, a flexible marketing strategy, giving access to a variety of buyers, brings better prices and allows for more flexible decisions.

Prices of produce are usually determined through the bid process. The produce is always sold to the highest bidder. The auction managers reported that prices of produce are higher early and late in the harvest season when the supply is low. This information should encourage farmers to adjust their planting dates for harvesting produce at these times. Early, as well as late, crops in the season will bring higher returns to farmers, if yield is not reduced.

All nine produce-auction managers reported that the access to their markets was equally fair to all market participants. When asked whether their facilities serve local, regional or national clientele, all managers replied that the produce was grown locally and sold regionally. Surprisingly, occasional lots of produce obtained from as far as Florida, Georgia and the Carolinas are sold at Pennsylvania produce auctions.

Table 3. Summary of market operations for nine Pennsylvania produce auctions.

Market operations	Responses
Number of sellers	Average of 300 (50 are regular sellers)
Number of buyers	Average of 200 (90 are regular buyers)
Purchasers at auctions	Chain food stores (16%), independent grocery store (11%), farmers (27%), restaurants (6%) and roadside market operators (40%)
Special delivery	Delivery made only by one of the nine wholesale produce auctions
Cooling facility	Three wholesale produce auctions have cooling facilities
Contractual arrangements	None
Price determination	Highest bidder and by law of supply and demand
Access to the market	Open to all market participants
Market location and service	Located in close proximity to producing area and convenient rural low-speed roads
Weekly schedule	2–day average weekly schedule with a 4–day peak season schedule
Buyers' and sellers' interaction	Networking: exchange of market tips and recipes
Community diversity	Multicultural community but not yet being served with ethnic produce

Table 4. Strengths of nine Pennsylvania produce auctions.

Factors	Responses
Business ownership	Corporation (6)
	Family-owned business (3)
Board of Directors	Responsible and qualified Board members
Current commission rate	Variable (8–10%)
Produce quality	Excellent quality, diverse, local and fresh
Auction location	Rural farming communities
	Not near traditional marketing outlets
Clientele	Available customers (i.e., buyers and sellers)
Management	Customer-oriented, honest and friendly

All of the Pennsylvania auctions were located in proximity with rural production areas. This helps to reduce farmers' transportation costs. The survey showed that all auction facilities avoided locating along a high-speed roadway that could make access to the market very inconvenient to market participants. This has been a handicap for farmers in other states where the lack of traffic lights required that farmers yield to oncoming vehicles. All were located in rural areas with predominantly Amish communities.

All of the auctions operated throughout the season, 1–6 days a week, depending on the supply of produce. The typical schedule was 2 days a week, usually on Tuesdays and Thursdays. Business during the harvest seasons usually begins slowly and increases as produce becomes more available during peak times. The markets are typically open 1 day a week during the winter, twice weekly in spring and fall; and sometimes 4 days a week in the summer (July–September), during the peak harvest season.

Do Pennsylvania produce auctions actively seek out customers through advertisement and other means of communication? The answer is 'yes'. They actively seek out producers and buyers through advertisements in local newspapers, personal contact, direct mail, word of mouth, long-term establishment, reputation, meetings and newsletters. Another aspect of produce auctions is networking. The survey indicated that sellers and buyers were able to interact and share market tips and recipes at the auction.

The population served by these auction markets is diverse (i.e., Amish, white and some minority groups). Over half of the managers thought that the community being served by their markets is multicultural. However, there were not yet ethnic vegetables and herbs offered at these auctions, suggesting that there could be a niche market for ethnic produce, given the diversity of the population served.

None of the produce auctions provided educational programs. However, auction managers indicated that the Pennsylvania Cooperative Extension agents/educators provided educational programs such as production, farm management and horticultural sessions at the auction facilities. In addition, two auctions organized growers' meetings, intended to evaluate the performance of previous auctions and to provide directions for the next season.

Market strengths and weaknesses

Six of the nine markets were corporate auctions governed by a board of directors, whereas three were family-owned auctions that did not have a board of directors. The auctions reported that they were able to cover all expenses and make a profit at the fourth year (on average) of their operation. In some cases, profits were made at their second year. Several auctions were forced to replace their original board of directors with new members to improve efficiency and productivity.

Three produce auctions did not provide financial data for security and privacy reasons. Based on the six that did, in 1998, the average annual gross sales were estimated at $3.5 million with a total commission of $290,500. Seven of the produce auctions charged an 8% commission rate. One auction charged a 9% commission rate and another a 10% rate, due to their geographical location. These rates did not significantly affect sales of these markets because they were far enough away to avoid competition from other produce auctions.

The auctions' strengths include excellent quality of produce, optimum locations, local produce recognition, clientele availability, management skill, hard work, customer-oriented business and private business ownership (Table 4). Most of the surveyed managers said that poor grading was the major factor

Table 5. Factors limiting the growth of Pennsylvania produce auctions.

Factor	Responses
Major	Poor grading
Other	Limited space in the auction facility
	Produce unavailability
	Produce limited volume
	Lack of cooling facility
	Price fluctuation
	Slow service
	Competition (i.e., farmers' direct sales)
	Drought
	Labor shortage
	Business ownership

limiting business growth (Table 5). However, grading deficiency could be corrected through education and rewarded by higher prices to sellers. Other factors that might hinder business growth included limited space in the auction facility, unavailability of produce, limited volume of produce, lack of cooling facility, price fluctuation and slow service. One manager indicated that other factors such as competition (farmer direct sales), drought, labor shortage, and type of business ownership could also limit the growth of produce auctions (Table 5).

Farmers could take advantage of price fluctuations to adjust their planting dates for harvesting during more profitable market windows (i.e., early and late in the season). Similarly, accessing a cooling facility and more auction space to serve more vendors could help negate a produce shortage. More space and a cooling facility could help ensure the availability of commodities and meet a higher demand for the produce.

A produce auction can be slow and time consuming. However, small farmers in rural areas often do not have ready access to alternative markets (i.e., chain food stores, terminal markets) and, therefore, the best option for them may be to sell produce through a local auction. Contract arrangements, purchasing cooperatives and other direct marketing opportunities could be created locally to help farmers shift market risks away from them and ensure produce availability.

Inconsistent or poor grading of produce at the auctions can be improved through educational programs conducted in cooperation with the Pennsylvania State University Cooperative Extension Service. The survey revealed that all of the produce auctions met their market expectations and goals as initially planned. However, none of them made a profit the first year of operation.

Conclusions and Recommendations

Our survey revealed that 10 wholesale produce auctions were established in Pennsylvania between 1984 and 1998. Their goal was to serve their local communities by providing high-quality produce to local consumers and marketing opportunities for local farmers.

The average size of the auction building is about 21 m (70 ft) wide and 70 m (228 ft) long. Only three of the auctions utilized cooling facilities and four used computers for their daily business operations.

The auctions typically employed an average of 7–10 people per growing season. The most common produce sold included cantaloupe, watermelon, tomato, pumpkin and sweet corn. Asparagus and onions were the least sold commodities during a regular growing season.

The produce auctions' largest market share was roadside market operators (40%), followed by farmers (27%), chain food stores (16%), independent grocery stores (11%) and restaurants (6%), making up an average annual gross sale of $3.5 million. The auctions' strengths included private business ownership, fresh produce of excellent quality, good locations, local produce recognition, clientele availability and customer-oriented business. Weaknesses included inconsistent or poor grading of produce, limited space in the auction facility, produce unavailability and limited volume, lack of cooling facilities, price fluctuation and slow service.

It was concluded that these wholesale produce auctions could provide an alternative marketing strategy for small farms in the rural areas. The Pennsylvania auction model indicates that this marketing scheme is appropriate in rural areas where traditional alternatives, such as terminal markets and chain food stores, are not available. This alternative market offers a promising option for small farms to sell produce, and a convenient shopping center for buyers. While some weaknesses exist in these auction-type markets (which can be corrected), their strengths and successes suggest that such wholesale marketing can help sustain small farms. The policy implication of this study is that a wholesale produce-auction market model is highly recommended for rural communities.

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