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# **Marketing and Merchandising Practices for Fresh Sweet Corn in Supermarkets**

**-- Challenges and Opportunities for the New York State Fresh Sweet Corn Industry**



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## ABSTRACT

This study focused on investigating key issues related to marketing fresh sweet corn through supermarket firms and implications for the New York sweet corn industry. In summer 2002, a survey was conducted with supermarket firms that operate stores in the market area of three Northeast States - New York, New Jersey and Pennsylvania. Executives from 25 supermarket firms responded to the survey. Participating firms operated 921 stores, and their 2000 sales ranged from \$21 million to \$10.5 billion with total retail sales of \$24.5 billion in the year.

The majority of supermarket firms in the study sourced fresh sweet corn directly from grower/shippers during the summer season (July – September). During the rest of the year, wholesalers become more important as the main source of this product due to their competitive advantage of being able to source product from different regions. The three most important methods used by supermarket firms to identify their fresh sweet corn suppliers are 1) personal relationships/referrals, 2) sales calls from grower/shippers, and 3) “other” ways, such as memory from previous years, through their wholesalers, and from terminal markets. Large firms also emphasized their use of shippers’ directories and field offices. The three most important characteristics sought in suppliers of fresh sweet corn by participating supermarket firms are supplier’s ability to provide consistent quality, ability to make daily deliveries, and the prospect of developing a good relationship.

During the summer season, fresh sweet corn grown in New York State plays an important role among supermarket firms in the trading area studied. Its major competitor is sweet corn from New Jersey. Small and medium firms, as well as firms in New Jersey and Pennsylvania, preferred white corn, while large firms and firms in New York State preferred bi-color corn. These preferences are determined by customers’ preferences and demands. During the summer season, most of the fresh sweet corn marketed by participating supermarket firms is marketed bulk and un-shucked. The market share of tray-packed fresh sweet corn, either partially shucked or completely shucked, is still very small. Other forms of fresh sweet corn that supermarket firms would be interested in selling in their stores are mainly related to value-added and/or ready-to-cook products, such as microwave-ready trays.

Results confirmed that supermarkets mainly promote fresh sweet corn during the traditional holidays of Memorial Day, the 4<sup>th</sup> of July and Labor Day. Quality, availability and price are the other factors that determine when supermarket firms run a promotion on fresh sweet corn. According to participating supermarket firms, the most effective strategies to promote fresh sweet corn, and where the biggest expansion efforts should be focused, are: locally-grown, in-store display features, store flyers and discount sales.

Participating supermarket firms that purchased fresh sweet corn grown in New York State rated taste and quality of the New York product as good. Availability, shelf-life and shipping containers were rated somewhat lower -- between average and good. Medium-size supermarket firms were less satisfied with New York products’ attributes. In general, dependability of New York grower/shippers was rated as good. On-time delivery was also rated good except by medium-size supermarket firms and by New York State firms. Promotional support from New York sweet corn suppliers was the attribute with the lowest rating across all firm categories and particularly among New York State firms.

These results clearly indicate that there are opportunities for the New York sweet corn industry to improve fresh sweet corn sales through supermarkets in the trading area of the study. Supermarkets of different sizes and in different regions (States of New York, New Jersey and Pennsylvania in this study) have different needs and expectations. Sweet corn grower/shippers need to strive to meet the needs and ensure the satisfaction of their various clients.

## Table of Contents

Acknowledgement	2
Abstract	3
INTRODUCTION	6
METHODS	8
RESULTS AND ANALYSIS	10
Purchasing Strategies for Fresh Sweet Corn	10
Main Source of Fresh Sweet Corn	10
Use of Contracts	12
Most Important Ways to Identify Fresh Sweet Corn Grower/Shippers	13
Most Important Characteristics Sought in Fresh Sweet Corn Grower/Shippers	14
Importance of New York Fresh Sweet Corn during the Summer Season	15
Color and Variety Preferences in Fresh Sweet Corn	17
Sweet Corn Color Preference	17
Sweet Corn Variety Preference	18
Experience and Evaluation of Different Shipping Containers	19
Experiences with Different Types of Shipping Containers	19
Evaluation of Different Types of Shipping Containers	21
Merchandising and Promotional Strategies	23
Conditions under Which Fresh Sweet Corn is Sold During the Summer Season	23
Main Promotional Occasions and Factors that Determine Running a Promotion on Sweet Corn	25
Promotional Strategies Used and Their Effectiveness	25
Likelihood of Using Specific Promotional Strategies if Sponsored by New York State Fresh Sweet Corn Industry	26
Use of State Promotional Program to Promote Fresh Sweet Corn	28
Performance of New York State Fresh Sweet Corn and Suppliers	28
Performance of New York State Grown Fresh Sweet Corn	28
Performance of New York Fresh Sweet Corn Grower/Shippers	29
SUMMARIES AND CONCLUSIONS	31
REFERENCES	35

## **LIST OF TABLES**

Table 1. Characteristics of Participating Supermarket Firms	9
Table 2. Main Sources for Buying Fresh Market Sweet Corn During the Summer Season and the Off-Season	12
Table 3. Most Important Ways to Identify Fresh Sweet Corn Grower/shippers During the Summer Season and the Off-Season	14
Table 4. Most Important Characteristics Sought in Fresh Sweet Corn Grower/shippers	15
Table 5. Importance of New York Grown Fresh Sweet Corn During the Summer Season	16
Table 6. Fresh Sweet Corn Color Preference	18
Table 7. Experience with Different Types of Shipping Containers	19
Table 8. Average Percentage Shipped in Each Type of Container, Currently and in 5 Years	21
Table 9. Average Evaluation Ratings for Different Type of Shipping Containers	22
Table 10. Conditions under Which Fresh Sweet Corn is Sold During the Summer	24
Table 11. Experience and Effectiveness of Promotional Strategies, All Firms	26
Table 12. Likelihood of Using Sponsored Promotional Strategies	27
Table 13. Performance of New York State-Grown Fresh Sweet Cornell University	29
Table 14. Performance of New York State Fresh Sweet Corn Suppliers	30

## INTRODUCTION

### Background and Justification

Sweet corn is one of the most popular vegetables in the United States and Canada. Factors including the new sweeter and longer shelf-life varieties, and value-added packaging options introduced to the market have greatly promoted demand for fresh sweet corn in the United States during the 1990s, pushing consumption over that of canned and frozen forms. The farm-weight equivalent of per capita use of fresh sweet corn increased from 6.7 pounds in 1990 to 9.4 pounds in 2001 (USDA, 2002). In fact, sweet corn is one of the most important vegetables produced in New York State. According to the New York Agricultural Statistics annual report (2002), New York State harvested 62,600 acres of sweet corn and generated sales of \$80.2 million in 2001. Moreover, while about half of the sweet corn acreage in the State was harvested for fresh market (33,400 acres), 85 percent of the total crop value was attributed to fresh market sales (\$68.4 million). New York State produced a total of 3.8 million pounds of sweet corn for the fresh market in 2001.

According to a survey of New York sweet corn growers conducted by Cornell University in 2001 (Uva, 2004), among the five major marketing channels—namely, wholesale markets, cooperatives, retailers, processors, and direct marketing to consumers—the most important channel used by growers to market New York fresh sweet corn is retailers/supermarkets. Almost two-thirds of the New York grown sweet corn is sold through supermarkets according to New York growers surveyed in 2001. Supermarkets also constitute the main point of purchase of fresh sweet corn for consumers in several cities in the United States, as reported in a 2001 study conducted by the Florida Agricultural Market Research Center and sponsored by the Southern *Supersweet* Corn Council (Degner et al. 2001).

However, selling to supermarkets has become more challenging for many produce suppliers as a result of retail consolidation, increased global sourcing, and demand for year-round availability (Kaufman et al., 2000). In addition, the New York growers surveyed by Cornell University in 2001 (Uva, 2004) identified a series of limiting factors to their profitability as well as some opportunities for market development with fresh sweet corn. Low yields, short harvest period, pest and disease problems, high input prices, lack of consistent quality, challenges in maintaining product quality, oversupply during the season, competition from southern states, low prices, and use of the product as a loss leader in supermarkets were cited among the factors limiting profitability. Opportunities cited for marketing development include introduction of new and improved varieties (to expand availability, increase yield, and improve pest/disease resistance and quality), delivery of fresh product daily, developing locally grown programs (consumer education and awareness), shipping south in late summer, and developing new products with high quality and value.

Due to the importance of supermarkets as a marketing outlet for New York fresh sweet corn, and taking into consideration the limiting factors to profitability and the opportunities for market development as identified by New York sweet corn growers, this study focuses on investigating key issues related to marketing fresh sweet corn through supermarket firms. Information from

this study should provide the New York State fresh sweet corn industry with a better understanding of this marketing channel and its underlying challenges and opportunities. It will also be useful for suppliers to improve strategic marketing and production plans when marketing fresh sweet corn to supermarket firms.

## **Objectives**

The objectives of this study are two-fold: 1) to explore current supermarkets' purchasing and marketing practices for fresh sweet corn in the major Northeast trading area, and 2) to identify underlying opportunities and challenges for grower/shippers.

This study surveyed supermarket firms in the states of New York, New Jersey and Pennsylvania regarding the following:

- How do supermarkets source the fresh sweet corn sold in their stores and select their suppliers?
- What are supermarkets' preferences on fresh sweet corn color and variety, and what are the reasons for such preferences?
- What are supermarkets' experiences with different types of shipping containers used with fresh sweet corn and their perceptions of their performance?
- What are the merchandising and promotional strategies supermarkets use with fresh sweet corn, along with their effectiveness and likelihood of future use?
- What are supermarkets' evaluations of the current performance of New York State fresh sweet corn and its New York suppliers?

## METHODS

A mail survey was designed to collect information on supermarket firms' purchasing and marketing practices with fresh market sweet corn during the summer season (July – September) and rest of the year or the off-season (October - June). Several questions in the survey were adapted from the study "*Market Development Strategies for Fresh Sweet Corn*" which was conducted by The Florida Agricultural Market Research Center at the University of Florida for the Southern *Supersweet* Council (Degner et al. 2001). Researchers of the Florida study shared their expertise and provided advice for developing the survey for the present study.

The survey was conducted in Fall 2002. Supermarket firms included in this study are retailers operating stores in the market areas of three Northeast States - New York, New Jersey and Pennsylvania and with a minimum of 2 stores and \$20 million in annual sales. A total of 104 firms were identified through the 2001 Chain Store Guide database. Executives or managers in charge of buying produce for these firms were initially contacted by mail with a letter introducing the study. The survey was administered through three mailings during a period of two months (September through November 2002). The design of the questionnaire as well as the mailing procedures conformed to the Total Design Method (TDM) as established by Dillman (1978). Among the invited firms, 45 percent located their headquarters for the trading area in New York State, 24 percent in New Jersey, and 31 percent in Pennsylvania.

Executives from 25 supermarket firms responded to the survey with a resulting response rate of 24 percent, a typical rate for mail surveys. Participating firms operated 921 stores, and their 2000 sales ranged from \$21 million to \$10.5 billion. Retail sales of the 25 participating firms totaled \$24.5 billion in 2000, representing 55.5 percent of the sales of the 104 firms that were initially invited to participate in the study. The composition of the firms that participated in the study closely resembled that of the sampled group, with 48 percent of the firms headquartered in New York State, 24 percent in New Jersey and 28 percent in Pennsylvania.

For the purpose of analyzing the results, participating supermarket firms were grouped by size and by location of headquarter for the trading area. Firms were classified as either "small", "medium" or "large" based on their total sales in 2000. "Small" firms were defined as those with total sales up to \$100 million, "medium" companies were defined as those with total sales between \$100 million and \$1 billion, and "large" companies were defined as those with total sales of more than \$1 billion. Based on this definition, small firms, with a share of 40 percent (10 firms) among participating firms, had total sales of \$550 million and 63 stores; medium-size firms, with a share of 32 percent (8 firms), had total sales of \$2.8 billion and 132 stores, and large firms, with a share of 28 percent (7 firms), had total sales of \$21.2 billion and 717 stores (Table 1).

Executives responding to the survey held an array of titles ranging from owner, partner and general manager in small supermarket firms, to produce supervisor, produce buyer and produce director in small and medium supermarket firms, and to produce merchandiser and category manager in large supermarket companies. These executives had, on average, 12 years of experience in their job.

**Table 1. Characteristics of Participating Supermarket Firms**

Firm Category	No. of Firms	No. of Stores	Total Sales 2000 (\$ million)	Sales Range 2000 (\$ million)
<b>All Firms</b>	<b>25</b>	<b>912</b>	<b>\$ 24,514</b>	<b>\$ 21 - 10,490</b>
<b>By Size (Annual Sales)</b>				
Small (up to \$100 M)	10	63	550	21 - 100
Medium (\$101 M - \$1 B)	8	132	2,770	120 - 900
Large (> \$1 B)	7	717	21,194	1,750 - 10,490
<b>By Headquarter Location (State)</b>				
New York	12	630	18,388	21 - 10,490
New Jersey	6	198	4,895	90 - 3,850
Pennsylvania	7	93	1,231	20 - 575

## **RESULTS AND ANALYSIS**

Results from the survey are organized in these five major topic areas:

1. Purchasing strategies for fresh sweet corn
2. Color and variety preferences in fresh sweet corn
3. Experience and evaluation of different shipping containers
4. Merchandising and promotional strategies used for fresh sweet corn
5. Performance of New York State product (fresh sweet corn) and its suppliers

### **1. Purchasing Strategies for Fresh Sweet Corn**

Participating firms were asked to identify purchasing practices for fresh sweet corn in their stores. Respondents were asked to provide information on specific buying processes for both the summer season (July-September) and off-season (October-June). The buying processes explored included: main source of supply, current and future use of contracts, the most important ways in which they identify sweet corn grower/shippers, and the most important characteristics sought in their fresh sweet corn suppliers.

In order to determine the relative importance of New York fresh sweet corn among these supermarket firms during the New York supply season, respondents were asked to indicate the percentage of fresh sweet corn bought from New York State and from other states during the summer season. Respondents that reported not buying any fresh sweet corn from New York State were asked to provide the reasons.

#### ***1.1 Main Source of Fresh Sweet Corn***

Respondents were asked to indicate their MAIN source (only one) for fresh sweet corn during the summer season and during the off-season from the options provided, which included buying – directly from growers, from full-line general wholesalers, from produce wholesalers, or from “other” sources. Except when the main source was buying directly from growers, respondents were also asked to provide the company name of the source used. Four respondents marked more than one option as their main source and, as a result, their responses were rendered invalid and excluded from the results summarized in Table 2.

Growers and full-line general wholesalers are the most important agents supplying fresh sweet corn to participating firms of all sizes. As shown in Table 2, during the summer season, over half of all participating firms (57 percent) indicated buying directly from growers as their main source, while 19 percent reported full-line wholesalers, 10 percent reported produce wholesalers and 14 percent “other sources” as their main sources of supply. However, the order of

importance of these agents as the main source for fresh sweet corn supply changes during the off-season: full-line wholesalers were reported by 44 percent of all firms as their main source of supply, while only 26 percent reported growers as their main source during this time of the year. Furthermore, produce wholesalers become more important as a main source during the off-season than they are during the summer season.

When analyzed by firm size, it becomes clear that growers play an even more important role among medium and large firms during the summer. Sixty-six percent of medium and large size firms reported growers as their main source of fresh sweet corn during the summer season. Produce wholesalers and “other” sources are reported by similar percentages (17 percent) of the firms in both medium- and large- size categories as the main source for fresh sweet corn supply during the summer season, and no respondents in these two categories reported full-line wholesalers as their main source for fresh sweet corn in the summer. Small firms, on the other hand, depend more heavily on full-line general wholesalers (44 percent) even during the summer season.

Again, the relative importance of these agents as main sources for fresh sweet corn changes significantly during the off-season. For 66 percent of the large firms, buying directly from growers continues to be the main source, reflecting these firms’ greater buying and negotiating power and ability to buy directly from out-of-state growers. A portion of the medium-size firms shifted from buying from growers to full-line wholesalers and produce wholesalers during the off-season, while the dependence of small firms on full-line general wholesalers is much higher, with 70 percent reporting full-line general wholesalers as their main source of fresh sweet corn during the off-season.

Wholesalers used by participating firms as the main source for fresh sweet corn during the summer season and/or the off-season include Wakefern Foods Corp., Key Food Co-Op, Supervalu, RLB Food Distributors, Associated Wholesalers, Four Seasons Produce, Inc., and C&D from Florida. “Other” sources used by participating firms as their main source for fresh sweet corn include Topco Associates Co-Op, terminal markets, and brokers.

Even though growers play a significant role as main sources of fresh sweet corn during the summer season, these results reflect the advantages of wholesalers over growers during the off-season. Wholesalers are able to source product from different regions and offer consistent off-season supply. However, growers could develop a similar strength by adopting early- or late-season varieties that extend their supply season as well as by developing alliances with growers in other producing regions to become year-round suppliers for their customers. Growers’ sales during the summer season could also be increased by developing marketing strategies designed to reach more supermarket firms directly and/or by targeting wholesalers currently used by the supermarket firms to tap into the existing distribution channel, particularly in the case of small firms.

**Table 2. Main Sources for Buying Fresh Market Sweet Corn During the Summer Season and the Off-Season**

Main Source by Firm Size	Summer Season		Off-Season	
	No. of firms	% of firms	No. of firms	% of firms
<b>All firms</b>				
Directly from growers	12	57	6	26
Full-line wholesaler	4	19	10	44
Produce wholesaler	2	10	4	17
Other	3	14	3	13
<b>Small firms (up to \$100 M)</b>				
Directly from growers	4	44	0	0
Full-line wholesaler	4	44	7	70
Produce wholesaler	0	0	1	10
Other	1	12	2	20
<b>Medium firms (\$101 M - \$1 B)</b>				
Directly from growers	4	66	2	29
Full-line wholesaler	0	0	2	29
Produce wholesaler	1	17	2	28
Other	1	17	1	14
<b>Large firms (&gt; \$1 B)</b>				
Directly from growers	4	66	4	66
Full-line wholesaler	0	0	1	17
Produce wholesaler	1	17	1	17
Other	1	17	0	0

## 1.2 *Use of Contracts*

Respondents were asked to provide information on the current percentage of purchases under contract and what they expect this percentage to be in 5 years, for both the summer season and the off-season. Results indicate that almost none of the participating firms are currently using contracts to buy fresh sweet corn, nor do they anticipate using them in the next 5 years. Only one large firm in New York reported currently buying 90 percent of its fresh sweet corn under contract in 2001 and 2002, which it anticipates will be 100 percent in 5 years. The only other firm that reported using a contract was a small firm in Pennsylvania that currently buys 90 percent of its summer fresh sweet corn under contract and anticipates maintaining this share into the next 5 years.

These results confirm the information provided by growers in the sweet corn grower survey conducted by Cornell University in 2001. In that study, only 4 percent of the New York fresh market sweet corn growers reported using contract pricing (Uva, 2004).

### **1.3    *Most Important Ways to Identify Fresh Sweet Corn Grower/Shippers***

Respondents were presented with a list of methods typically used to identify produce grower/shippers and were asked to indicate the three most important ones in identifying suppliers of fresh sweet corn during both the summer season and the off-season. The methods included trade shows, trade newspapers and magazines, shipper directories, sales calls from grower/shippers, personal relationships/referrals, direct mailing from grower/shippers, a website, and “other” ways. When choosing “other” ways, respondents were asked to specify the method used.

As shown in Table 3, “personal relationships/referrals” and “sales calls from grower/shippers” are most often used by participating firms (over 50 percent) as most important ways to identify sweet corn grower/shippers during the summer season. When analyzed by firm size, medium-size firms also reported these two methods as the most important. “Personal relationships/referrals” was identified by the highest percentage of small-size firms (78 percent) as among the three most important methods used, and “sales calls from grower/shippers” and “other ways” were also each identified by 33 percent of small firms. Methods used by large firms to identify grower/shippers for their fresh sweet corn supply in the summer are more variable. Among the options provided, “personal relationships/referrals”, “sales calls from grower/shippers”, and “shipper’s directories” are the three most frequently used methods by large firms in the survey. Although not one of the three most frequently identified methods, “direct mailing from grower/shippers” was also selected by 43 percent of the large firms. Among the “other” ways used, small and medium firms reported using memory from previous years and their wholesalers and terminal markets, while large firms reported using their field buying offices.

Even though the three main ways used by participating firms (in the different categories) to identify their fresh sweet corn suppliers during the off-season are basically the same as those used during the summer season, a lower percentage of firms relies on personal relationships/referrals during this time of the year, while a higher percentage relies on “other” ways and trade shows (Table 3).

It is clear that to reach supermarket firms in the New York-New Jersey-Pennsylvania trading area, New York grower/shippers of fresh sweet corn need to concentrate a significant part of their efforts on developing and maintaining good personal relationships with their clients, as well as ensuring their satisfaction, thereby improving their prospect for maintaining the supplier status and receiving referrals. These results also highlight the importance of direct contacts or sales calls from grower/shippers for participating supermarket firms. Furthermore, grower/shippers interested in selling to large firms in this trading area should make sure their names and the name of their company are included in relevant shippers’ directories.

**Table 3. Most Important Ways to Identify Fresh Sweet Corn Grower/shippers During the Summer Season and the Off-Season**

	Summer Season							
	All firms		Small firms (up to \$100 M)		Medium firms (\$101 M to \$1 B)		Large firms (> \$1 B)	
	No. firms	% firms	No. firms	% firms	No. firms	% firms	No. firms	% firms
Personal relationships/referrals	20	83	7	78	8	100	5	71
	4	17	0	0	0	0	4	57
	14	58	3	33	7	88	4	57
	4	17	0	0	1	13	3	43
	1	4	0	0	0	0	1	14
	1	4	0	0	0	0	1	14
	6	23	3	33	2	25	1	14
	0	0	0	0	0	0	0	0
<hr/>								
	Off-Season							
	All firms		Small firms (up to \$100 M)		Medium firms (\$101 M to \$1 B)		Large firms (> \$1 B)	
	No. firms	% firms	No. firms	% firms	No. firms	% firms	No. firms	% firms
	12	57	5	56	3	50	4	57
	5	24	0	0	1	17	4	57
	7	33	1	11	3	50	3	43
	3	14	0	0	1	17	2	29
	2	10	0	0	0	0	2	29
	2	10	0	0	0	0	2	29
<hr/>								

#### **1.4    *Most Important Characteristics Sought in Fresh Sweet Corn Grower/Shippers***

Respondents were also presented with a list of typically desirable characteristics and were asked to indicate the three most important ones they look for in their fresh sweet corn grower/shippers. The characteristics listed included the ability to: have consistent quality; provide large volumes; provide a full line of produce; make daily deliveries; be a year-round supplier; provide promotional support; and have the possibility of developing long-term relationships. An option to indicate “other” characteristics was also included.

Among the participating firms, 24 replied to this question. As illustrated in Table 4, firms of all sizes agreed that “having consistent quality” was definitely the most important characteristic sought in fresh sweet corn grower/shippers, as reported by 100 percent of all firms replied to this question. Being “able to make daily deliveries” (67 percent of all firms), was the second most important characteristic, followed by the “possibility of developing long-term relationships” (54 percent). In addition, “able to provide large volumes” was reported by 50 percent of the firms. These results are very similar across firms of different sizes.

These results highlight, once again, the importance of personal relationships in this business and clearly point to strategies in which New York State fresh sweet corn grower/shippers should concentrate, with respect to products and services provided to and interactions with their clients in the selected northeast trading area.

**Table 4. Most Important Characteristics Sought in Fresh Sweet Corn Grower/shippers**

	All firms		Small firms (up to \$100 M)		Medium firms (\$101 M to \$1 B)		Large firms (> \$1 B)	
	No. firms	% firms	No. firms	% firms	No. firms	% firms	No. firms	% firms
Have consistent quality	24	100	10	100	8	100	6	100
Able to make daily deliveries	16	67	7	70	4	50	5	83
Possibility of developing long-term relationships	13	54	5	50	5	63	3	50
Able to provide large volumes	12	50	5	50	4	50	3	50
Able to provide promotional support	3	13	3	30	0	0	0	0
Other	2	8	0	0	2	25	0	0
Able to provide a full line of produce	0	0	0	0	0	0	0	0
Able to be a year-round supplier	0	0	0	0	0	0	0	0

### **1.5     Importance of New York Fresh Sweet Corn during the Summer Season**

Finally, in order to explore the relative importance of New York State-grown fresh sweet corn among participating supermarket firms during the New York production season (summer) and the competition it faces, respondents were asked to indicate the percentage of fresh sweet corn they buy from New York State and from other states during this time of the year.

Among the 24 firms providing information on this question, 71 percent reported buying at least some of their summer fresh sweet corn from New York State; 38 percent reported buying from Pennsylvania; and 58 percent reported buying from New Jersey (Table 5). Noticeably, firms are most likely to buy sweet corn from their own states when local supply is available. Nonetheless, New York State is clearly an important source of fresh sweet corn during the summer season among participating supermarket firms, as 83 percent of the New York firms, 67 percent of the New Jersey firms, and 43 percent of the Pennsylvania firms, reported buying fresh sweet corn grown in New York during this time of the year.

The New Jersey supply presents more competition for New York than Pennsylvania, as 42 percent of the firms in New York State, 83 percent of the firms in New Jersey, and 57 percent of the firms in Pennsylvania buy fresh sweet corn from New Jersey suppliers during the summer season (Table 5). On the other hand, Pennsylvania's fresh sweet corn, while bought by all of the firms in that state, is only bought by 17% of the firms in New York, and by none of the firms in New Jersey. This could be due to that Pennsylvania sweet corn supply has a similar production season as New York supply, whereas New Jersey sweet corn supply can be delivered two to three weeks earlier than New York supply, which provides a early market advantage to New Jersey sweet corn.

In addition, New York supermarket firms purchase their sweet corn supply from more states than their counterparts New Jersey and Pennsylvania (Table 5). New Jersey supermarket firms mainly buy from New Jersey and New York, followed by Florida. Pennsylvania supermarket firms buy mostly from Pennsylvania, and also from New York, New Jersey, Maryland and Virginia. Other than the three major states (NY, PA and NJ), states reported by more than 10 percent of participating supermarket firms as a source for fresh sweet corn during the summer season are Maryland, where they purchase between 5 and 25 percent of their needs; Florida, where they purchase between 20 and 30 percent of their needs; and Virginia, where they purchase between 5 percent and 10 percent of their needs. Additionally, 8 percent of the supermarket firms indicated purchasing fresh sweet corn from Ohio; the same percentage reported buying from Georgia, and an equal percentage reported not knowing the origin of their fresh corn supplies during the summer season. Illinois and Vermont were each cited by only one of the participating firms as a source of fresh sweet corn during the season.

The most cited reason by participating supermarket firms for not buying fresh sweet corn from New York State during the summer season was having their stores located in another state. Other frequent cited reasons were the good relations they have with their local growers and their proximity to producing regions, which makes it unnecessary to buy from other producing areas. However, the lack of contact with New York growers, or New York State fresh sweet corn not being made available to the distributors used, were additional reasons cited by one of the participating firms in Pennsylvania. This may, in fact, represent a marketing opportunity for the New York fresh sweet corn industry to explore.

**Table 5. Importance of New York-Grown Fresh Sweet Corn During the Summer Season**

	Origin of Sweet Corn Supply									Don't know
	NY	PA	NJ	MD	OH	FL	VA	Others		
<b>All Firms (25)</b>										
No. of firms	17	9	14	3	2	3	3	8	2	
% of firms	71	38	58	13	8	13	13	32	8	
Average % of supply	52%	67%	33%	17%	25%	25%	7%	33%	100%	
Range	10-100%	15-100%	8-100%	5-25%	10-40%	20-30%	5-10%	2-100%	100%	
<b>NY Firms (12)</b>										
No. of firms	10	2	5	1	2	1	0	5	1	
% of firms	83	17	42	8	17	8	0	42	8	
Average % of supply	67%	28%	25%	25%	10%	25%	N/A	11%	100%	
Range	10-100%	15-40%	8-50%	25%	10-40%	25%	N/A	2-30%	100%	
<b>NJ Firms (6)</b>										
No. of firms	4	0	5	0	0	2	0	1	1	
% of firms	67	0	83	0	0	33	0	17	17	
Average % of supply	40%	N/A	56%	N/A	N/A	25%	N/A	10%	100%	
Range	10-70%	N/A	10-100%	N/A	N/A	20-30%	N/A	10%	100%	
<b>PA Firms (7)</b>										
No. of firms	3	7	4	2	0	0	3	0	0	
% of firms	43	100	57	29	0	0	43	0	0	
Average % of supply	20%	78%	15%	13%	N/A	N/A	7%	N/A	N/A	
Range	10-30%	50-100%	10-20%	5-20%	N/A	N/A	5-10%	N/A	N/A	

Evidently, besides New Jersey, none of the other states from which participating firms buy fresh sweet corn represents significant competition for New York State fresh sweet corn grower/shippers during the summer season. These results should be exploited by the New York fresh sweet corn industry to reinforce and expand their current market position.

## **2. Color and Variety Preferences in Fresh Sweet Corn**

Respondents were asked to indicate whether they preferred to sell white, yellow, or bi-color sweet corn and the reasons for this preference. They were also given the option to indicate no particular preference. In the case of preferred varieties, they were not provided with any specific options but, rather, were asked to name those varieties they preferred and to indicate the reasons for this preference; here too, they were provided with the option to report no particular preference.

### ***2.1 Sweet Corn Color Preference***

All of the participating firms (25) reported having a preference for a particular color of fresh sweet corn. However, three respondents selected more than one option as their preferred color and, as a result, their responses were rendered invalid and are not included in results presented in this section (Table 6).

White is the color preferred by the highest percentage of all participating firms, chosen by 41 percent of respondents, followed by bi-color, with 36 percent of respondents, and by yellow, with 23 percent of respondents. When firm size is considered, a higher percentage of small and medium firms reported a preference for white corn (50 percent and 43 percent, respectively) than for the other two colors, while a significant percentage (60 percent) of the large firms reported preferring bi-color corn.

When analyzed by state, bi-color corn is preferred by the highest percentage (45 percent) of the firms in New York, followed by yellow corn (36 percent), while in New Jersey and Pennsylvania white is reported as the preferred corn color by 60 percent and 67 percent of the firms that responded, respectively.

Customer preferences and demand were cited by 68 percent of the firms with valid responses as the reason for preferring a particular color of fresh sweet corn.

**Table 6. Fresh Sweet Corn Color Preference**

	Color of Sweet Corn					
	White		Yellow		Bicolor	
<b>All Firms</b>	No. of firms	% of firms	No. of firms	% of firms	No. of firms	% of firms
	<b>9</b>	<b>41</b>	<b>5</b>	<b>23</b>	<b>8</b>	<b>36</b>
<b>By Size</b>						
Small firms (up to \$100M)	5	50	2	20	3	30
Medium firms (\$101M to \$1B)	3	43	2	29	2	29
Large firms (>\$1B)	1	20	1	20	3	60
<b>By State</b>						
NY firms	2	18	4	36	5	45
NJ firms	3	60	1	20	1	20
PA firms	4	67	0	0	2	33

## 2.2 Sweet Corn Variety Preference

Among the 25 participating firms, 52 percent (13) reported a preference for specific varieties of the fresh sweet corn they sell through their stores, while 48 percent (12, with 7 of those being small firms) reported having no particular preference in this respect.

The variety most often cited was the *Supersweet* corn, with 85 percent (11) of the firms that reported a specific preference citing it. Reasons for preferring this variety of fresh sweet corn included best flavor and consistent quality, shelf-life, bi-color variety and providing a good reputation to the store. This variety is particularly popular among firms in the states of New York and New Jersey, as most of the firms that expressed a preference mentioned the *Supersweet* as one of them. In Pennsylvania, 50 percent of firms also mentioned this particular variety.

Other preferred varieties reported by a significantly lower number of the participating firms that reported a preference were: *Silver Queen*, reported by three firms, followed by *Butter & Sweet*, *Summer Sweet* and *Argent*, each reported by only one firm.

### 3. Experience and Evaluation of Different Shipping Containers

Respondents were asked to indicate the percentage of their purchases of fresh sweet corn currently shipped in different types of containers, as well as the percentage they anticipate will be shipped in five years. The containers listed included wire-bound crates (WBC), corrugated cardboard boxes (CCB) and returnable plastic containers (RPC). An option to report “other” types of containers was also provided. In addition, in order to identify current challenges and future opportunities regarding shipping containers, respondents were asked to rate several key attributes regarding the performance of those containers in which they currently receive the product. The rating was based on a scale from 1 to 5, where 1 is “poor”, 3 is “average”, and 5 is “excellent”. The container attributes presented to respondents for evaluation included: protecting corn from bruising; allowing corn to cool quickly; easy handling by employees; suitability for retail display; and ease of disposal/return. An overall performance rating of each type of shipping container was also requested.

#### 3.1 Experiences with Different Types of Shipping Containers

As shown in Table 7, most of the participating supermarket firms in all size categories receive fresh market sweet corn in wire-bound crates. Corrugated cardboard boxes are more common among medium-size firms and among firms in New Jersey, as 50 percent of each reported currently buying fresh sweet corn in this type of container. Returnable plastic containers, on the other hand, are not handled by any of the participating firms at the present time. “Other” types of containers was the second most commonly reported shipping option by all firms, as well as by firms in New York State and Pennsylvania. Paper, burlap, and net bags, along with bins and field crates, were mentioned by participating firms as “other” types of shipping containers in which fresh sweet corn was purchased.

**Table 7. Experience with Different Types of Shipping Containers**

Type of Containers	By Size							
	All Firms		Small Firms (up to \$100M)		Medium Firms (\$101M - \$1B)		Large Firms (> \$1B)	
Wire-Bound Crates	No. of firms	% of firms	No. of firms	% of firms	No. of firms	% of firms	No. of firms	% of firms
Wire-Bound Crates	19	76	7	70	7	88	5	71
Corrugated Cardboard Boxes	8	36	2	20	4	50	2	29
Returnable Plastic Containers	0	0	0	0	0	0	0	0
Others	12	48	5	50	5	63	2	29
<hr/>								
By State								
Type of Containers	All Firms		NY Firms		NJ Firms		PA Firms	
	No. of firms	% of firms	No. of firms	% of firms	No. of firms	% of firms	No. of firms	% of firms
Wire-Bound Crates	19	76	9	75	5	83	5	71
Corrugated Cardboard Boxes	8	36	4	33	3	50	1	14
Returnable Plastic Containers	0	0	0	0	0	0	0	0
Others	12	48	6	50	2	33	4	57

Even though all of the participating supermarket firms provided information on the current percentage of fresh sweet corn they purchased in each of the different types of containers, only 64 percent (16) of them provided information on both the current percentage and on the percentage they anticipate in five years. Therefore, analysis on the expected trends in the use of different types of shipping containers is based only on the information provided by these 16 firms (Table 8).

On average, 56 percent of the fresh sweet corn purchased by participating supermarket firms is currently shipped in wire-bound crates. They are more commonly used by medium-size firms (61 percent) and firms headquartered in New York (64 percent) and New Jersey (60 percent). "Other" types of shipping containers are the next in importance. An average of 29 percent of the fresh sweet corn currently bought by participating firms is shipped in "other" types of containers, with an even higher percentage being used among large firms (40 percent) and firms in Pennsylvania (40 percent). Corrugated cardboard boxes rate third. An average of 16 percent of all participating firms purchase sweet corn in corrugated cardboard boxes, with a higher percentage of medium-size firms (27 percent) and New Jersey firms (35 percent) purchasing sweet corn in corrugated cardboard boxes. As stated before, none of the participating firms currently purchases this product in returnable plastic containers.

In five years, all participating supermarket firms expect to decrease their use of wire-bound crates for their sweet corn supply, while the percentage of sweet corn shipped in "other" types of containers is expected to remain unchanged from their current levels. The percentage of fresh sweet corn shipped in corrugated cardboard boxes is expected to increase among medium-size firms and those in New Jersey, but it is expected to remain at the current low levels among small and large firms, and among firms in New York and Pennsylvania. On the other hand, all participating supermarket firms reported they expect to see the use of returnable plastic containers increase in the next 5 years, particularly among medium-size and large firms, and among firms in New York State.

Although somewhat depending on the size and location of firm, the trend that retailers are moving away from purchasing fresh sweet corn in wire-bound crates and more towards either cardboard boxes or returnable plastic containers is evident from these results. This points to yet another opportunity for New York fresh sweet corn grower/shippers to adapt their shipping containers to meet the needs and expectations of their different clients.

**Table 8. Average Percentage Shipped in Each Type of Container, Currently and in 5 Years**

	All Firms	By Size			By State		
		Small Firms (up to \$100M)	Medium Firms (\$101M - \$1B)	Large Firms (> \$1B)	NY Firms	NJ Firms	PA Firms
<b>Number of firms responded</b>	16	6	5	5	7	3	6
<b>Wire-Bound Crates</b>							
% sweet corn currently	56	51	61	56	64	60	43
% sweet corn in 5 years	35	42	24	36	43	27	29
<b>Corrugated Cardboard Boxes</b>							
% sweet corn currently	16	17	27	4	7	35	17
% sweet corn in 5 years	22	17	47	4	7	68	17
<b>Returnable Plastic Containers</b>							
% sweet corn currently	0	0	0	0	0	0	0
% sweet corn in 5 years	14	8	16	20	21	0	13
<b>Other Types of Containers</b>							
% sweet corn currently	29	33	12	40	29	5	40
% sweet corn in 5 years	29	33	13	40	29	5	41

### **3.2 Evaluation of Different Types of Shipping Containers**

Participating retailers were also asked to evaluate specific attributes for different types of shipping containers (on a scale of 1 to 5, with 1 being poor and 5 being excellent) in which their fresh sweet corn purchases are shipped. The overall rating for wire-bound crates among different-size firm categories averaged 3.6 and ranged from 3.4 to 3.8 (between average and good). This container's best-rated attribute across all firm categories is allowing sweet corn to cool quickly (3.9-4.6); other attributes, including handling ease by employees (3.2-4.2) and protecting sweet corn from bruising (3.0-4.0), received a rating between average and good, while suitability for retail display (1.4-3.3) and ease of disposal/return (2.2-3.3) were rated poor to average.

The overall rating for corrugated cardboard boxes averaged 3.2 and ranged between 3.0 and 3.5, which is below the overall rating for wire-bound crates. Additionally, ratings for specific attributes were more dispersed. The two best-rated attributes for this type of container were its handling ease by employees (3.5-4.7) and its ability to protect the sweet corn from bruising (3.0-4.7). Its performance in allowing the sweet corn to cool quickly was rated between average and good (3.0-4.0), below the average rating for wire-bound containers, while ease of disposal/return (1.0-3.8) and suitability for retail display (1.0-3.6) were the two attributes that received the lowest ratings for corrugated cardboard boxes.

“Other” types of containers, a category including different types of bags, bins and field crates in which fresh sweet corn is purchased by participating firms, had an overall rating between 3.0 and 4.0 (average to good). This rating is similar to the ratings received by wire-bound crates and above corrugated cardboard boxes. Due to the different types of shipping containers included in this category, the ratings for specific attributes were even more dispersed than those for the other two types of shipping containers. The best-rated attributes for these “other” types of containers

were their ease of disposal/return (3.3-5.0), followed by handling ease by employees (3.0-4.0). Ratings on their ability to protect corn from bruising (1.0-4.7) and to allow corn to cool quickly (1.8-5.0) are particularly dispersed, reflecting different structural features that influence their performance on these two attributes. Clearly these containers are not suitable for retail display as their average ratings go from very poor to just above average (1.0-3.5).

Since none of the participating firms had any experience with returnable plastic containers, there are no ratings available for this type of containers. However, it is worth keeping in mind that all of the participating firms anticipate use of this shipping container for fresh sweet corn to increase in the future. Therefore, it is important for New York fresh sweet corn grower/shippers to learn about the performance of this type of container for shipping fresh sweet corn. The results from a recent study conducted by the Florida Agricultural Market Research Center for the *Supersweet* Corn Council showed about 18 percent of retail firms that participated in that study (all of them large firms by the definition in the Cornell Study) reported currently purchasing fresh sweet corn in returnable plastic containers (Degner et al. 2001). Their ratings for all of the specific attributes in returnable plastic containers were higher than for wire-bound crates and corrugated cardboard boxes. They cited some disadvantages, too, including concerns about packaging size, potential increased retailer costs, and container size adequacy for display purposes.

**Table 9. Average Evaluation Ratings for Different Type of Shipping Containers<sup>a</sup>**

Type of Shipping Container /Performance Attributes	All Firms	<u>By Size</u>			<u>By State</u>		
		Small Firms (up to \$100M)	Medium Firms (\$101M - \$1B)	Large Firms (> \$1B)	NY Firms	NJ Firms	PA Firms
— (Average Rating) —							
<b>Wire-Bound Crates</b>							
Protects corn from bruising	3.6	3.7	3.3	3.8	4.0	3.3	3.0
Allows corn to cool quickly	4.3	3.9	4.6	4.6	4.4	4.3	4.0
Handling ease by employees	3.8	4.1	3.2	4.2	4.0	3.7	3.6
Suitability for retail display	2.4	2.1	3.0	2.2	2.6	3.3	1.4
Ease of disposal/return	2.6	3.1	2.2	2.5	2.8	3.3	2.2
<b>Overall rating</b>	<b>3.6</b>	<b>3.4</b>	<b>3.8</b>	<b>3.8</b>	<b>3.8</b>	<b>3.7</b>	<b>3.3</b>
<b>Corrugated Cardboard Boxes</b>							
Protects corn from bruising	4.1	3.0	4.5	4.7	4.2	4.0*	4.0*
Allows corn to cool quickly	3.4	4.0	3.0	3.3	3.6	3.0*	3.0*
Handling ease by employees	4.3	3.5	4.5	4.7	4.6	4.0*	3.0*
Suitability for retail display	2.9	2.5	3.0	3.0	3.6	1.0*	1.0*
Ease of disposal/return	3.1	2.5	3.0	3.7	3.8	2.0*	1.0*
<b>Overall rating</b>	<b>3.2</b>	<b>3.0</b>	<b>3.5</b>	<b>3.0</b>	<b>3.3</b>	<b>3.0*</b>	<b>3.0*</b>
<b>Other Types of Containers</b>							
Protects corn from bruising	2.9	3.3	3.0	1.0	1.5	3.0*	4.7
Allows corn to cool quickly	2.6	1.8	3.0	5.0	2.5	4.0*	2.3
Handling ease by employees	3.6	3.5	3.5	4.0	3.0	4.0*	4.0
Suitability for retail display	2.4	1.0	3.3	3.0	1.7	3.5*	2.3
Ease of disposal/return	4.0	4.5	3.3	5.0	3.8	4.5*	4.0
<b>Overall rating</b>	<b>3.1</b>	<b>3.3</b>	<b>2.7</b>	<b>4.0</b>	<b>2.3</b>	<b>3.0*</b>	<b>4.0</b>

\* Average based on less than 3 firms.

<sup>a</sup> The attributes were rated on a scale from 1 to 5, where 1 is "poor", 3 is "average", and 5 is "excellent".

## **4. Merchandising and Promotional Strategies**

Respondents were asked to provide information on several aspects of their current merchandising practices during the summer season, including the effectiveness of promotional strategies they have used with fresh sweet corn and the likelihood of using specific promotional strategies if sponsored by the New York fresh sweet corn industry. Additionally, the use of state promotional campaigns by participating supermarket firms and their perceptions on advantages and disadvantages of such programs were explored.

### ***4.1 Conditions under Which Fresh Sweet Corn Is Sold During The Summer Season***

Respondents were asked to indicate the percentage of fresh sweet corn they sell in bulk and unshucked, tray-packed partially shucked, and tray-packed completely shucked. Additionally, they were asked to provide information on the percentage of the total fresh sweet corn sold refrigerated during this time of the year.

As shown in Table 10, all of the participating supermarket firms, across different categories, sell most (81 to 95 percent) of their fresh sweet corn in bulk and un-shucked form during the summer season. Tray-packed and partially shucked fresh sweet corn is sold by 43 to 86 percent of respondents, but it represents only between 4 to 12 percent of the fresh sweet corn sold. The lowest percentages correspond to the product sold tray-packed and completely shucked, with 20 to 58 percent of participating firms selling only 1 to 7 percent of the volume of fresh sweet corn in this form.

Regarding the use of refrigeration, between 80 and 100 percent of participating firms across the different categories reported selling 22 to 83 percent of their fresh sweet corn under this condition during the summer season. All of the medium and large firms, as well as all firms in New York State, reported selling fresh sweet corn under refrigeration, but this was only between 22 and 52 percent of the total volume, respectively. In Pennsylvania, 86 percent of the firms reported selling 45 percent of their fresh sweet corn refrigerated, while 80 percent of the small firms and the firms in New Jersey reported selling just 83 to 25 percent, respectively, of their fresh sweet corn under this condition (Table 10).

The low percentages of fresh sweet corn sold under refrigeration among participating supermarket firms imply a higher degree of deterioration of the product and a reduction of its shelf life. It might present an opportunity for New York grower/shippers to explore the possibilities of working with retailers in increasing the amount of New York grown product sold under refrigeration in their stores as a strategy to preserve product quality and shelf-life and improve customer satisfaction.

**Table 10. Conditions under Which Fresh Sweet Corn is Sold During the Summer**

	All Firms	By Size			By State		
		Small Firms (up to \$100M)	Medium Firms (\$101M - \$1B)	Large Firms (=> \$1B)	NY Firms	NJ Firms	PA Firms
<b>Bulk-unshucked</b>							
No. firms	24	10	7	7	12	5	7
% of firms	100	100	100	100	100	100	100
Average % of sweet corn	86	81	92	87	83	95	85
<b>Tray Pack, partially shucked</b>							
No. firms	15	6	3	6	7	3	5
% of firms	63	60	43	86	58	60	71
Average % of sweet corn	10	12	6	10	12	4	10
<b>Tray Pack, completely shucked</b>							
No. firms	10	4	3	3	7	1	2
% of firms	42	40	43	43	58	20	29
Average % of sweet corn	4	7	2	3	5	1	5
<b>Refrigerated</b>							
No. firms	22	8	7	7	12	4	6
% of firms	92	80	100	100	100	80	86
Average % of sweet corn	48	83	22	35	52	25	45

In addition, respondents were asked to indicate other forms and/or product usage of fresh sweet corn that they would be interested in selling through their stores. Only 6 (25 percent) of the participating supermarket firms answered this question, and all of the responses were related to a more convenient product including: display ready-to-use boxes, pre-packaged or tray-packed and microwave-ready fresh sweet corn.

Related to this topic, according to the results from the consumer survey section in the Florida Agricultural Market Research Center study (Degner et al. 2001), preparation time and the “messiness” associated with cooking fresh sweet corn were among the reasons listed by consumers for not buying the product. Researchers in the Florida study concluded, therefore, that every effort should be made to reduce preparation time (such as promoting microwave cooking) and to offer ready-to-cook products if quality of the product can be preserved. Interest expressed by supermarket firms in this study, along with the findings of the consumer survey in the Florida study, indicate an opportunity for value-added forms of fresh sweet corn which should be seriously considered by New York grower/shippers.

#### **4.2 Main Promotional Occasions and Factors That Determine Running a Promotion on Sweet Corn**

The primary occasions when fresh sweet corn is featured by participating supermarket firms are Memorial Day, 4<sup>th</sup> of July and Labor Day. Beyond these three traditional holidays, some respondents indicated they also feature it at different levels during the summer vacation period (July-September), including at least twice during the season, during the weekends, every day when in season, or when supply is abundant.

When asked about other factors that determine whether to feature fresh sweet corn on advertising, beyond the special occasions reported above, 68 percent of respondents mentioned price of fresh sweet corn, followed by 53 percent that mentioned availability, and 43 percent that mentioned quality. Taste and flavor, as well as eye-appeal (which are all closely related to quality), were additional factors mentioned by some of the respondents, along with weather and time of the year.

These results imply that there might be an opportunity to increase the number of occasions and frequency when supermarket firms feature fresh sweet corn in their ads, if corn of good quality, taste and appearance is made available to them at a good price and in the required amounts.

#### **4.3 Promotional Strategies Used and Their Effectiveness**

Respondents were asked to rate the promotional strategies they have used to promote fresh sweet corn in the past two years into “very effective”, “slightly effective” or “not effective at all”. The list of strategies presented to respondents included: in-store display feature; in-store demonstration/sampling; in-store tie-in sales; in-store videos; store flyers; radio spots; locally grown; discount sales; TV spots; banners/posters; recipe cards; and nutritional brochures. They were also provided with the option to indicate “other” strategies used and were asked to identify them.

In total, 21 (84 percent) of the participating supermarket firms provided information on the promotional strategies listed. Table 11 shows that all of these firms have had experience with all of the strategies listed. Locally grown, in-store display feature, store flyers, radio spots and in-store tie-ins, have been used by 80 percent or more of these firms during the past two years to promote fresh sweet corn. The least often used strategy among those listed is TV spots, with only 57 percent of the firms reporting having used them.

The most effective strategies used to promote fresh sweet corn are locally grown, in-store display, store flyers, and discount sales, which were all reported as “very effective” by 69 to 90 percent of the respondents. Recipe cards, nutritional brochures, in-store tie-ins, and TV spots were rated as “slightly effective” by 56 to 71 percent of the firms, while in-store videos were rated as “not effective at all” by 57 percent of the firms. Ratings for other strategies were more divided. Banners/posters were rated as “slightly effective” by 50 percent and as “very effective” by 44 percent of the firms. Radio spots were rated as “slightly effective” by 47 percent and as

“very effective” by 35 percent of the firms, while in-store demonstrations/samplings were rated as “slightly effective” by 29 percent and as “not effective at all” by 43 percent of the firms.

Even though there was significant agreement regarding the effectiveness of these promotional strategies across firms in the different size categories, it is worth pointing out that several promotional strategies were rated by more than 50 percent of the firms in specific categories as “very effective”. For example, discount sales and in-store demonstration/sampling were rated as “very effective” by 83 percent and 50 percent of the large firms, respectively, while 50 percent of the medium-size firms rated TV spots as “very effective”. When analyzed by location of operation, in-store tie-ins among firms in New York, banners/posters among firms in New Jersey, and radio spots, banners/posters and in-store tie-ins among firms in Pennsylvania, were also rated as “very effective” by 50 percent or more of the firms in each of these states.

**Table 11. Experience and Effectiveness of Promotional Strategies, All Firms**

	All Firms		Effectiveness		
	No.	%	% Very	% Slightly	% Not at all
Locally grown	20	95	90	10	0
In-store display feature	21	100	81	19	0
Store flyers	18	86	78	22	0
Discount sales	16	76	69	25	6
Banners/posters	16	76	44	50	6
Radio spots	17	81	35	47	18
In-store demonstration/sampling	14	67	29	29	43
In-store tie-ins	17	81	29	59	12
TV spots	12	57	17	56	25
Nutritional brochures	13	62	8	62	31
In-store videos	14	67	7	36	57
Recipe cards	14	67	0	71	29
Other	0	0	0	0	0

#### **4.4 Likelihood of Using Specific Promotional Strategies If Sponsored By New York State Fresh Sweet Corn Industry**

In order to explore opportunities for New York State fresh sweet corn grower/shippers to develop marketing strategies around providing specific promotional alternatives to supermarket firms in the surveyed trading area, respondents were asked to indicate the likelihood of using such strategies if they were sponsored by the New York fresh sweet corn industry. Respondents were asked to rate the likelihood as “very likely”, “somewhat likely” or “not likely”. The list of promotional strategies presented to respondents included: in-store videos, ad slicks (hard copy), ad slicks (electronic copy), radio scripts, banners/posters, price cards, recipe cards, display contests, and nutritional brochures. They were also provided with the option to indicate “other” strategies and were asked to specify them.

Table 12 shows that the most popular strategies are: price cards, banners/posters, ad slicks (hard copy) and display contests, as 50 percent or more of all participating firms would “very likely” use them if sponsored by the New York sweet corn grower/shippers. On the other hand, participating firms are less excited about in-store videos, as 65 percent said they are not likely to use them and only 6 percent are “very likely” to use them if sponsored by the New York sweet corn industry. The likelihood of using the four promotional strategies mentioned above was approximately the same across all firm categories, with a few exceptions as described below.

Small firms and firms in New York State are more enthusiastic about price cards, with 75 percent and 70 percent of the firms in each of these categories, respectively, reporting they would “very likely” use them, compared to the average (60 percent) for all firms and 40 percent of the medium-size firms. Banners/posters are also more attractive to small firms, as 67 percent reported they would “very likely” use them, compared to the average (55 percent) for all firms, 43 percent for large firms and 33 percent for firms in New Jersey. Medium-size firms and firms in Pennsylvania are not as excited about ad slicks (hard copy) (only 33 and 25 percent, respectively) as the rest of the participating firms (50 percent) for all firms. On the other hand, small firms and firms in New York State were the least enthusiastic about display contests, with only 43 and 33 percent, respectively, of the firms in these categories reporting they would be “very likely” to use them, compared to the average (50 percent) for all firms.

Therefore, the New York State fresh sweet corn industry should concentrate its promotional support to supermarket firms in the New York-New Jersey-Pennsylvania trading area on price cards, banners/posters, ad slicks (hard copy) and display contests. As results indicate, however, such offers should also be adjusted according to the size and area of operation of the specific firms.

**Table 12. Likelihood of Using Sponsored Promotional Strategies**

<b>Promotional Strategy</b>	<b>All Firms</b>		<b>Likelihood of Use</b>		
	No. of firms	% of firms	% Very Likely	% Somewhat Likely	% Not Likely
Price cards	20	95	60	20	20
Banners/posters	20	95	55	30	15
Ad slicks (hard copy)	18	86	50	39	11
Display contests	18	86	50	22	28
Radio scripts	18	86	33	28	39
Recipe cards	18	86	33	33	33
Nutritional brochures	18	86	28	33	39
Ad slicks (magnetic copy)	17	81	18	47	35
TV scripts	17	81	18	35	47
In-store videos	17	81	6	29	65
Other	1	5	0	0	0

#### **4.5     *Use of a State Promotional Program to Promote Fresh Sweet Corn***

In an attempt to identify the relevance of state promotional programs (such as the “Pride of New York” and “Jersey Fresh” programs) among participating firms, respondents were asked to indicate whether they have considered promoting fresh sweet corn under such programs and to comment on any advantages and/or disadvantages associated with doing so.

Among the 22 firms that responded to this question, 77 percent (17) indicated they did consider state promotional programs to promote fresh sweet corn. Among the advantages of this type of program, most respondents mentioned the opportunity to promote locally grown products; other related advantages mentioned included consumer awareness and local pride, along with consumers’ perception of local products being fresher. In terms of disadvantages, respondents mentioned availability constraints and the associated difficulties in assuring product from a specific state to support the promotional effort, as well as these programs interfering with the store’s own locally-grown promotional program. Additionally, they reported that local product is not always pre-cooled, and it doesn’t always match customers’ expectations, resulting in sales losses.

Given the percentage of participating firms that reported considering state promotional programs, as well as the high effectiveness reported for “locally grown” as a strategy to promote fresh sweet corn, New York State grower/shippers should seriously explore the opportunities of promoting their product under the “Pride of New York” logo, and develop strategies that will allow them to avoid the disadvantages associated with this type of promotional effort.

### **5.       *Performance of New York State Fresh Sweet Corn and Suppliers***

To assess the performance of New York State fresh sweet corn and its suppliers, respondents who bought fresh sweet corn in New York were asked to evaluate them on a series of attributes. Ratings were requested on a scale from 1 to 5 where 1 is “very poor”, 3 is “average” and 5 is “excellent”. Additionally, they were asked to make suggestions for improvements where relevant and to make any additional comments on the outlook for this industry.

The attributes on which product performance was evaluated included quality, taste, consistency, availability, shelf-life, price and shipping containers. Suppliers’ performances were rated on dependability, on-time delivery, promotional support and overall performance. A total of 14 firms (56 percent) provided information on this topic.

#### **5.1      *Performance of New York State Grown Fresh Sweet Corn***

As shown in Table 13, on average the quality and taste of New York fresh sweet corn was rated among all firms as good (4.0), except for medium-size firms which rated both of these attributes between average and good (3.8). The average rating for price is very close to good (3.9),

although large firms rated it lower (3.5). Consistency, availability, self-life and shipping containers were rated by most firms between average and good (3.5 to 3.7). In general, small firms are the most satisfied with New York product, while medium-size firms are the least satisfied. Nevertheless, there is clearly room for improvement in all attributes, and particularly so in terms of: consistency, availability, and price when selling to large firms; in shelf-life, shipping containers, consistency and taste when selling to medium-size firms; and in consistency, availability and shelf-life when selling to New York State firms.

Only one firm provided suggestions for improving product quality - provide fresher and better tasting product.

**Table 13. Performance of New York State-Grown Fresh Sweet Corn**

	All Firms	By Size			NY Firms
		Small Firms (up to \$100 M)	Medium Firms (\$101M - \$1B)	Large Firms (>\$1B)	
<b>No. of firms</b>	<b>14</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>10</b>
<b>Performance Attribute</b>					
		<i>Average Rating<sup>a</sup></i>			
Quality	4.0	4.3	3.8	4.0	4.1
Taste	4.0	4.5	3.5	4.0	4.2
Consistency	3.6	4.3	3.5	3.2	3.5
Availability	3.7	4.0	3.8	3.5	3.5
Shelf-life	3.5	4.0	2.8	3.7	3.5
Price	3.9	4.3	4.0	3.5	3.8
Shipping containers	3.6	3.8	3.3	3.8	3.7

<sup>a</sup> Ratings are on a scale from 1 to 5, where 1 is "very poor", 3 is "average", and 5 is "excellent".

## 5.2 *Performance of New York Fresh Sweet Corn Grower/Shippers*

Table 14 summarizes respondents' average ratings on New York State fresh sweet corn grower/shippers. Generally dependability and on-time delivery are perceived as good (4.0 or higher) among all firms, except among small-size firms and firms in New York State which rated these attributes between average and good (3.0 to 3.9). Promotional support was, on average, rated below average (2.3). Small-size and firms New York State again rated this attribute lower at poor (1.7 and 1.9, respectively). Overall performance were rated between average and good (2.7 to 3.7), and rated higher by medium and large firms and lower by small firms.

Clearly, there is room for improvement in all of the attributes measured and particularly so to small-size firms and firms in New York. Particularly important is to improve performance with firms in New York, the primary clientele for the New York State fresh corn industry. Improved promotional support is also needed for medium and large firms,. Improvements in these areas should translate into a higher overall performance rating across firms of all categories.

Two firms made recommendations to the New York State fresh sweet corn industry to: use terminal markets as a consistent outlet for their product—not just during periods of oversupply—and improve post-harvest handling of the product by incorporating procedures such as hydro-cooling.

**Table 14. Performance of New York State Fresh Sweet Corn Suppliers**

	All Firms	By Size			NY Firms
		Small Firms (up to \$100 M)	Medium Firms (\$101M - \$1B)	Large Firms (>\$1B)	
<b>No. of firms</b>	<b>14</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>10</b>
<b>Average ratings</b>					
<i>Average Ratings</i>					
Dependability	3.8	3.0	4.0	4.2	3.7
On-time delivery	4.0	3.7	4.3	4.0	3.9
Promotional support	2.3	1.7	2.7	2.5	1.9
Overall performance	3.4	2.7	3.3	3.8	3.2

## SUMMARIES AND CONCLUSIONS

### Strategies Employed to Buy Fresh Sweet Corn

Grower/shippers are the main source for fresh sweet corn for over half (57 percent) of the supermarket firms in the New York-New Jersey-Pennsylvania trading area during the summer season. However, grower/shippers could further increase sales to supermarkets by developing marketing strategies that will make it more attractive, or even feasible, to buy directly from growers and to avoid the intermediaries. In the short run, growers could increase sales by targeting current distribution channels currently used by supermarket firms to source fresh sweet corn during the summer season, such as the full-line wholesalers and produce wholesalers, particularly in the case of small supermarket firms.

During the off-season, wholesalers become more important than growers as the main source of this product due to the competitive advantage they have of being able to source from different producing regions. Growers could target a bigger market share during the off-season by extending their own production season through the adoption of new varieties, expanding production into other growing regions, or by developing strategic alliances with growers in other regions so that they might become year-round suppliers for supermarkets.

Results indicate that supermarket firms don't make any use of contracts to purchase fresh sweet corn currently, nor do they anticipate using them in the next 5 years. These results confirm a New York State growers' report on this topic (Uva 2004) and imply that the fresh sweet corn market and the prices paid for this product will continue to be the result of supply-and-demand forces at any given time.

### Methods Used to Identify Suppliers and Characteristics Sought in Suppliers

The three most important ways in which supermarket firms in the study's trading area identify their fresh sweet corn growers are basically the same during the summer season as the off-season. These are personal relationships/referrals, sales calls from grower/shippers, and "other" ways, such as memory from previous years, from their wholesaler and through terminal markets. Large firms also use shipper directories and field offices. These results highlight the importance for New York State growers to develop and maintain excellent relationships with their clients and ensure customer satisfaction. Strategies that growers of other commodities (ie. strawberries) have developed include inviting their clients to visit their production sites to learn how the operations are run, as well as sponsoring training and/or social events for their clients.

The three most important characteristics sought in suppliers of fresh sweet corn by participating supermarket firms are: consistent quality, daily deliveries, and possibly personal relationships. The first two characteristics identified (quality and frequency of deliveries) confirm New York growers' concerns about these two factors limiting their profitability as identified in the earlier grower survey (Uva 2004) and should be addressed as soon as possible. The third characteristic,

once again, highlights the importance that personal relationships have for supermarket firms when dealing with fresh sweet corn.

### **Relative Importance of New York Fresh Sweet Corn during The Summer Season**

During the summer season, New York grown fresh sweet corn plays an important role among supermarket firms in the trading area under study. Its major competitor is product from New Jersey. New Jersey sweet corn production usually has a slightly earlier harvesting schedule than New York production. Therefore, New York growers should investigate early sweet corn varieties or building alliance with growers in southern regions to expand the supply season. Moreover, besides offering both a product and a service as good as or better than that offered by New Jersey growers, the New York State fresh sweet corn industry should focus first on selling more product to the supermarket firms in New York and second on expanding their marketing efforts to reach more supermarket firms, or the wholesalers they use, in other states.

### **Sweet Corn Color and Variety Preferences**

White corn had the highest preference, particularly among small and medium firms as well as among firms in New Jersey and Pennsylvania, while bi-color corn had the highest preference among large firms and firms in New York. These preferences are determined by supermarkets' awareness of customers' preferences and demand. *Supersweet* corn was the variety preferred by most of the supermarket firms in the trading area under study, and this preference is associated with its consistent quality, shelf-life, bi-color nature, and even with providing "good reputation" to the store.

### **Shipping Containers**

All supermarket firms reported purchasing fresh sweet corn in wire-bound crates. Corrugated cardboard boxes are more common among medium and large firms as well as in firms in New Jersey; "other" types of containers, such as paper or burlap bags, and field bins or crates are mostly used by small and medium firms. None of the participating firms reported purchasing the product in returnable plastic containers.

In the next 5 years, supermarket firms anticipate that the percentage of fresh sweet corn that will be shipped in wire-bound crates will decrease. The percentage shipped in paper or burlap bags, and field bins or crates will remain about the same while the percentage shipped in corrugated boxes and returnable plastic containers will increase.

Even though the overall performance rating of shipping containers currently used was higher for wire-bound crates, followed by "other" containers and corrugated cardboard boxes, ratings for specific attributes of these containers highlighted their corresponding advantages and disadvantages. Wire-bound crates' best attribute is their ability to allow corn to cool quickly. The best attribute of paper/burlap bags and field bins/crates is their ease of disposal/return, along with

handling ease by employees. The best attributes of corrugated cardboard boxes are their ability to protect corn from bruising and the ease of handling by employees. Even though no ratings were obtained in this study for returnable plastic containers, this container obtained the highest ratings for all attributes among the different types of shipping containers from the supermarket firms surveyed in the study by the Florida Agricultural Market Research Center (Degner et al., 2001).

### **Sweet Corn Merchandising Strategies**

During the summer season, most fresh sweet corn (80 percent or more) sold by supermarket firms in the trading area under study is sold in bulk and unshucked. The amount sold in tray-packed fresh sweet corn either partially shucked or completely shucked is still very small. Small firms and firms in New York sell a relatively higher percentage of the product under the latter forms compared to the other firm categories.

Even though 80 percent or more of the supermarket firms sell some fresh sweet corn under refrigeration during the summer, the average percentage of product sold under this condition is low, ranging from 22 to 45 percent only. Considering the correspondingly negative effects of high temperature on the product, this presents an opportunity for supermarkets and growers to improve both the quality and the shelf-life of the product.

Other forms of fresh sweet corn that supermarket firms would be interested in selling through their stores are mainly related to value-added and/or ready-to-cook products, such as microwave-ready trays. The Florida Agricultural Market Research Center's study also recommended the development of such products based on their consumer survey. The recent introduction (July 2002) of an FDA microwaveable tray with 4 ears of fresh sweet corn by Mercers Ranches, Inc., supports this recommendation, which might prove very effective not only in selling more product but also in breaking the seasonality of its consumption. New York State growers should definitely give this alternative serious consideration and even try to go beyond the convenience factor, to exploit consumers' current cravings for innovation, by developing these convenient products with seasonings or flavorings if it is technologically viable.

### **Promotional Strategies**

Results confirmed that supermarkets in the studied trading area mainly promote fresh sweet corn during the traditional holidays of Memorial Day, 4<sup>th</sup> of July, and Labor Day. Although some firms indicated promoting sweet corn during the whole summer or during weekends when the product is available, this was more the exception than the norm. Quality, availability, and price are the other factors determining when supermarket firms run a promotion on fresh sweet corn, and they constitute the key elements that New York grower/shippers should focus on if they want supermarkets to run more promotions on fresh sweet corn than they currently do.

According to participating supermarket firms, the most effective promotional strategies to promote fresh sweet corn and where the biggest efforts should be concentrated, are: locally grown, in-store display feature, store flyers, and discount sales. Additional effective strategies for

specific firm categories are: in-store demonstration/sampling in large firms; TV spots in medium firms; in-store tie-ins in New York firms; banners/posters in New Jersey firms; and radio spots, banners/posters and in-store tie-ins in Pennsylvania firms.

The most popular promotional support among participating firms (which they would very likely use if sponsored by the New York fresh sweet corn industry) are: price cards, particularly in small firms and in New York firms; banners/posters, particularly in small firms; ad slicks (hard copy), except in medium-size firms and Pennsylvania firms; and display contests, except in small firms and New York firms.

Study results indicated that a high percentage (77 percent) of supermarket firms do consider using state promotional programs to promote fresh sweet corn. The main perceived advantages of these types of programs are that they offer the opportunity to promote the product as “locally grown”, to develop consumer awareness, and to benefit from consumers’ pride on local produce and on their perception of local products being much fresher. However, there are also perceived disadvantages by supermarkets for using these programs, including difficulties in assuring availability of the product to support the promotional effort, interfering with the store’s own locally grown program, no guarantee that product is properly handled (i.e. not pre-cooled), and quality corresponds to consumers’ expectations. The New York State fresh sweet corn industry should explore the opportunity of promoting their product under the “Pride of New York” logo, particularly as renewed efforts are being made to promote it and position it. However, adequate strategies to avoid the disadvantages mentioned, as well as any others, must be considered.

### **Performance of New York State Fresh Sweet Corn and New York Grower/Shippers**

Participating supermarket firms that purchase fresh sweet corn in New York State rated taste and quality of the New York product as good. Availability, shelf-life and shipping containers were rated somewhat lower, that is, between average and good. Medium-size firms were the least satisfied with New York products’ attributes. These results clearly indicate that there is room for improvement in all of the product’s attributes, but particularly in terms of availability, shelf-life and shipping containers, and relations with medium-size firms.

In general, dependability of New York grower/shippers was rated as good. Promotional support was the attribute with the lowest ratings across all firm categories and, particularly, among small-size firms and firms in New York State. Again, there is room for improvement here, and particularly with respect to small-size firms and firms in New York State.

## REFERENCES

- Degner, R.L., K.L. Morgan, C. deBodisco, L. House. 2001. *Market Development Strategies for Fresh Sweet Corn*. The Florida Market Research Center-University of Florida. Industry Report 01-1. [http://www.agmarketing.ifas.ufl.edu/downloads/Sweet\\_Corn\\_Final\\_Report.pdf](http://www.agmarketing.ifas.ufl.edu/downloads/Sweet_Corn_Final_Report.pdf)
- Dillman, D. A. 1978. *Mail and Telephone Surveys: The Total Design Method*. John Wiley & Sons, New York, NY.
- Kaufman, P.R., C.R. Handy, E.W. McLaughlin, K. Park and G.M. Green. 2000. *Understanding the Dynamics and Produce Marketing – Consumption and Consolidation Grow*. USDA. Economic Research Service. Agriculture Information Bulletin Number 758.
- New York Agricultural Statistics Service. 2002. *New York Agricultural Statistics 2001-2002*. New York State Dept. of Agriculture and Markets, Albany, New York.
- Scruton, Terry. 2002. “Microwaveable Pack of Corn on Cob Unveiled”. *The Packer*. September 2. p. B5.
- USDA, Economic Research Service. 2002. *Vegetable and Melons Situation and Outlook Yearbook*. July.
- Uva, W.L. 2004. “*Sweet Corn Marketing Channels In New York State -- A New York Sweet Corn Grower Survey*” RB 2004-05. Dept. of Applied Economics and Management, Cornell University, Ithaca, New York.

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<b>RB No</b>	<b>Title</b>	<b>Fee (if applicable)</b>	<b>Author(s)</b>
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