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Retailer-Wholesaler Response to State-Sponsored Marketing Programs: The Case of Jersey Fresh

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Executive Summary

Jersey Fresh retailers and wholesalers feel that the logos are effective in increasing sales. Most feel that the popularity of the logo among the consumers is moderate. The results of this study indicate that the promotional aspect of the program was more popular among all the participant groups than the quality control aspect. The mail surveys indicated that a greater number of participants were aware of and were using the promotional logo than the quality grading logo. Only a fifth of the wholesalers who were aware of the quality-grading program were enrolled in the program. The results also indicated that participants who thought that consumer awareness of the program was high were more likely to be enrolled. This study also illustrates that most retailers and wholesalers participating in the program prefer the colorful Jersey Fresh Promotional Logo (Logo A in Appendix) and would like to have one common logo for both promotion and quality grading.

Retailers who believed that consumers were highly aware of Jersey Fresh were found more likely to have been using the Jersey Fresh Logos. Retailers who used other logos to identify their fresh produce were found more likely to use Jersey Fresh Logos in the future. Willingness to use Jersey Fresh Logos in the future was found to be lower among retailers who sell more than 75 percent of their sales in retailing. Willingness to use the logos was also found to decrease with the age of retailers. Retailers with outlets in the urban areas of New Jersey and with retail outlets that were open for more than 8 months during the year were more likely to be use Jersey Fresh Logos. Farmers with more experience in retailing produce were more likely to use the logos.

Wholesalers who used other logos, who advertised through signs and used word of mouth to identify their produce were more found more likely to use the Jersey Fresh Logos. Wholesalers who sell more than 75 percent of their annual trade to other wholesale buyers, were found less likely to use the logos and less willing to use the logos in the future.

Introduction

Jersey Fresh is one of the nation's leading examples of state-sponsored agricultural marketing promotion and is one of the major programs funded by the New Jersey Department of Agriculture (NJDA Annual Report, 1986). The purpose of this program is to enable consumers to easily identify quality fresh produce from New Jersey by promoting locally grown fruits and vegetables with Jersey Fresh Logos. The program attempts to increase the awareness of many fresh fruits and vegetables available from New Jersey by targeting consumers of New Jersey, nearby Philadelphia, New York and the Delmarva (Delaware, Maryland and Virginia) region (NJDA Annual Report, 1985).

The importance of this program arises from many key factors that affect the market share of state-grown produce. New Jersey's agriculture constitutes a key industry for the state, contributing to income and employment. It provides livelihood for approximately 20,000 workers and accounts for 16,000 additional jobs. The geographic location of New Jersey provides some distinct advantages that can translate into increased profits for farmers. The state is located in the middle of the most densely populated consumer market in the U. S., and the per capita income in the state is also one of the highest in the nation (Census, 1992). Moreover, the consumer demand for fresh and quality produce has been growing in recent years (NJDA Annual Report, 1991). Due to New Jersey's convenient location close to the big consumer markets of the northeastern states, produce can be picked at the height of ripeness and transported to these markets in minimal time and at minimal costs. The Jersey Fresh Program has been launched by the NJDA to capitalize on these competitive advantages, to boost the returns to New Jersey farmers and to increase their share of the retail market. The program campaign highlights the freshness aspect of the New Jersey produce to give them a competitive edge over the produce that is shipped from other states.

The Jersey Fresh Program attempts to create consumer awareness through billboards, radio and television advertising, special promotions, and distribution of attractive point-of-purchase materials. All these advertisements are well identified with an attractive

Jersey Fresh Logo (see Appendix) that catches consumer attention. The NJDA also participates in many promotional events such as farmers' market fairs, trade shows, cooking competitions, and in-store Jersey Fresh produce demos held throughout the state. The program distributes price-cards, stickers, banners, paper bags, and worker's aprons. Participating retail organizations receive exposure through Jersey Fresh television commercials and billboards.

Since its introduction in 1984 the Jersey Fresh Program has undergone many changes. The logo has been repeatedly enhanced and has undergone new designs and changes in style. The *Jersey Fresh-From the Garden State* Logo, which appeared in 1984, has been their most popular and standing logo (Zeldis, 1993). Other logos that have been adopted include the *Demand the Freshest* campaign theme adopted in 1987, the *Farm Fresh to You Each Morning* campaign theme adopted in 1988 and the *Premium Jersey Fresh Logo* from the regulatory component of their campaign started in 1988. All these campaigns helped the program to establish and enhance consumer awareness through the years (Gallup, 1988).

The Jersey Fresh Quality Grading Program was started in 1985 to help retailers and wholesalers market their higher quality produce. This program, offered by the Division Of Regulatory Services, not only ensures a steady supply of high quality fruits, vegetables, eggs, poultry products, fish and fisheries products, but also that inputs such as animal feed as well as fertilizers and liming materials are of good quality and are properly packed. Farmers might improve the sales of their quality produce by packing commodities that meet the standards of this program with the quality grading logo - *Premium Jersey Fresh* (see Appendix). The use of the premium logo gives an extra marketing advantage to the growers and packers whose produce exceeded U.S standard grades. The program aims to help farmers gain an edge over produce arriving from other states by labeling their produce as *Premium Jersey Fresh*.

This study empirically evaluates the effectiveness of the Jersey Fresh Program in terms of the impact the promotional logos have on produce retailers and wholesalers, and

their willingness to patronize the program. The study aims at understanding the retailers' and wholesalers' perceptions of the premium logo and their opinions on the quality grading aspect of the Jersey Fresh Program. The study also examines the reasons behind the low participation in the quality-grading program. The results from this study may provide valuable information that can be applied not only to improve the Jersey Fresh Program, but also in the promotion of other products and in other states which have similar promotional programs.

Objectives of this study include:

1. To examine the general attitudes of participating retailers and wholesalers towards the effectiveness of the Jersey Fresh Logos.
2. To identify the characteristics of those participating or interested in participating in the Jersey Fresh promotional and quality grading programs.
3. To identify the important reasons for not participating in the program.
4. To make policy recommendations based on the acquired data that would help in developing strategies that will aid in the expansion of the Jersey Fresh Program.

Methodology and Estimation Technique

The study of retailer and wholesaler attitudes and perceptions about the Jersey Fresh Program was conducted in two phases. The first phase involved conducting a focus group meeting with retailers and wholesalers to discuss the key factors which could improve the effectiveness of the logos in increasing consumer awareness. The second phase involved a survey of produce retailers and wholesalers in the state of New Jersey. The results of the focus group meeting were published in the NJAES Bulletin P-02137-3-97. The key issues and factors that evolved out of the focus group session were addressed in detail in the mail surveys. Participants were asked about the types and quantities of fruits and vegetables sold through the Jersey Fresh Program in addition to questions related to their attitudes about the program and their general socio-demographic characteristics. They were also asked questions concerning the factors affecting their participation in the quality-grading program of the Jersey Fresh campaign. All questionnaires were pre-tested prior to the survey administration to allow

for necessary changes. The data was entered using the SAS statistical software package and data analysis was conducted using a logistic approach. The models were regressed using *maximum likelihood estimation*, as it yields large sample properties of consistency and asymptotic normality of the parameter estimates. Conventional tests of significance could therefore be applied when logit models were used. The logit model, with the closed-form cumulative logistic probability function, estimates the log of the odds that a particular choice would be made.

In logit modeling, the likelihood of a respondent using the Jersey Fresh Logos was chosen as a function of a set of predetermined variables or factors. The model assumes that the probability, P_i , of being a patron of Jersey Fresh Logos depends on a vector of independent variables (X_i 's) associated with the participant i , and a vector of unknown parameters β . A dichotomous random variable y_i is defined as $y_i = 1$ if the participant uses the logos, and $y_i = 0$ otherwise. For the logit model, the probability was determined by:

$$P_i = F(Z_i) = F(\alpha + \beta X_i) = 1 / [1 + \exp(-Z_i)] \quad (\text{Eqn. 1})$$

Where:

- $F(Z_i)$ = represents the value of the standard normal density function associated with each possible value of the underlying index Z_i .
- P_i = the probability of observing a specific outcome of the dependant variable (i.e. the respondent participates in the Jersey Fresh Program) given the independent variables X_i s
- e = the base of natural logarithms approximately equal to 2.7182
- Z_i = the underlying index number or βX_i
- α = the intercept

And βX_i is a linear combination of independent variables so that:

$$Z_i = \log [P_i / (1 - P_i)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon \quad (\text{Eqn. 2})$$

Where:

- i = 1, 2, . . . , n are observations

- X_n = the n^{th} explanatory variable for the i^{th} observation
- β = the parameters to be estimated
- ε = the error or disturbance term

The dependent variable in the above equation 2 is the logarithm of the odds that a particular choice would be made. The slope of the cumulative logistic distribution is greatest at $P = 0.50$. This implies that changes in the independent variables will have the greatest impact on the probability of choosing a given option at the midpoint of the distribution. The low slopes at the end points of the distribution imply that large changes in X are necessary to bring about small changes in probability.

The parameters themselves do not represent directly the change in the independent variables. Such probability changes depend on the original probability and, hence, on the initial values of all the independent variables and their coefficients. For the logit model the changes in the probability P_i that $y_i = 1$ brought by the independent variable X_{ij} is given by:

$$(\partial P_i / \partial X_{ij}) = [\beta_j \exp(-\beta X_{ij})] / [1 + \exp(-\beta X_{ij})]^2 \quad \text{(Eqn. 3)}$$

However, when the independent variables are also qualitative in nature, as is the case with most of the explanatory variables in this model, $\partial P_i / \partial X_{ij}$ does not exist in that X_{ij} is discrete, and does not vary continuously. In this case, probability changes must be obtained by evaluating P_i at the alternative values of X_{ij} . Probability changes are then determined by:

$$(\partial P_i / \partial X_{ij}) = P_i(Y_i : X_{ij} = 1) - P_i(Y_i : X_{ij} = 0) \quad \text{(Eqn. 4)}$$

Different logit models were developed for predicting the likelihood of retailers and wholesalers using Jersey Fresh Logos in the past and in the future, and the probability of them being enrolled in the Jersey Fresh Quality Grading Program. For example, the model for estimating the preferences of retailers toward the Jersey Fresh promotional labels, in terms of socio-economic characteristics was given by:

$$Z_i = \beta_0 + \beta_1 \text{Consum} + \beta_2 \text{Other} + \beta_3 \text{Sales} + \beta_4 \text{Fret} + \beta_5 \text{Adv} + \beta_6 \text{Wofm} + \beta_7 \text{Age} + \beta_8 \text{Num} + \beta_9 \text{Open} + \beta_{10} \text{Urban} + \beta_{11} \text{Ofin} + \beta_{11} \text{Fainc} + \beta_{12} \text{Fainc} \quad \text{(Eqn. 5)}$$

The description of the variables used in the model 1 and other models, are presented in detail in Tables 9 and 10. Similar models were developed for retailers and wholesales to predict their interest in participating in the Jersey Fresh Program in the future. These models focused on examining the effectiveness of the Jersey Fresh Program in encouraging and increasing the produce sales.

The responses of the surveys regarding the use of Jersey Fresh Logos and other promotional logos to identify fresh produce were compared with the answers to other related questions using paired responses within a contingency table framework. This approach tests the assumption that the participants' responses to one question were independent of those to other questions. Results of the contingency analysis helped in making inferences about the various attitudes of the surveyed group that were relevant for developing marketing strategies.

Target Sample and Survey Administration

Two separate surveys were developed and administered. The first targeted growers and direct market retailers while the second targeted wholesalers. Mailing addresses were acquired from the latest New Jersey Direct Marketers Directory (1995) and New Jersey Growers Bulletin (1995). Survey packets sent to farmers included a cover letter, a reply paid envelope and an incentive for participation.

The information sought was the participants' awareness of the Jersey Fresh Logo and its effectiveness in increasing sales of New Jersey farmers' produce. The questionnaire identified those who recognized and used the logos of Jersey Fresh promotional program from those who did not. It probed those who used the logos, where they used them, and for what purpose. Questions about the most common advertising items and where the logo was used provided an idea of which outlets they felt were most likely to catch consumers' attention to Jersey Fresh.

Data was gathered from respondents regarding whether they were enrolled in the program, how they thought the program was affecting their produce sales, and if they

wanted the promotional logo and the quality grading logo to be the same. The survey questionnaire also inquired about farmers' reasons for not participating in the quality grading program. Preferences regarding the Jersey Fresh promotional program and the quality grading program were sampled and respondents were asked if they were able to receive a premium price for the Jersey Fresh products. This information provides insight into how big the target population is, how willing they are to participate in the Jersey Fresh Program, and how much they are benefiting by the program.

General information was also collected regarding the size of the operation, location, annual gross sales income, whether they retailed or wholesaled their produce, and the various types of advertising they used. The survey included questions to collect demographic information such as age, income, education, off-farm income, and farm income.

Both surveys were pre-tested prior to administration. Three hundred grower/retailer surveys and 50 wholesaler surveys were mailed throughout the state of New Jersey in November, 1996 and early 1997. In addition to the surveys directly sent to wholesalers, many wholesaler responses came from the grower/retailer survey as many farmers were also wholesalers. The final sample was comprised of 110 retailers and 109 wholesalers.

Direct Marketer and Wholesaler Survey Analyses

The responses from the direct marketers' survey as well as the wholesalers' survey were used to understand retailers' and wholesalers' perception of the Jersey Fresh promotional and quality grading programs. The survey included questions regarding demographic information such as age, education, experience, and off-farm income. The analysis of retailers and wholesalers was performed on the data of 82 produce retailers and 95 wholesalers. This report presents the descriptive results of the retailers and wholesalers survey data followed by the results of the logit models analyses.

Descriptive Results of the Retailer and Wholesaler Surveys

Overall, 96 percent of the retailers and 96 percent of the wholesalers indicated that they were aware of the Jersey Fresh Program. Whereas, only 66 percent of the retailers and 52 percent of the wholesalers reported having used the logos for their produce sales. These results indicate a substantial gap between the percentage of respondents that were aware and the percentage that were actually using the logos.

Among the three logos that were shown in the survey (see Appendix), 87 percent of retailers reported to have used the promotional logo compared to 65 percent of wholesalers. The quality grading logo had been used by 7 percent of retailers versus 14 percent of wholesalers, while 11 percent of the retailers and 11 percent of the wholesalers had used the premium logo. The results clearly indicate that the promotional logo was the most popular logo used by retailers and wholesalers. The quality grading and premium logos were used more frequently by wholesalers than by retailers. The number of years the respondents participated in the program is given in Table 1.

Table 1: Percent Distribution of Number of Years Participated in the Jersey Fresh Program

Years	< 2	3-4	5-6	7-8	9-10	11-12	13-14
Retailers	19.6	19.6	19.6	11.8	11.8	13.7	7.8
Brokers	29.7	12.8	14.9	8.5	14.9	17.0	2.1

Note: Frequencies shown as percentage of total respondents.

Regarding their opinion on the logos, the majority of retailers and wholesalers (94 percent) have stated that the logos were used for adding “locally grown” value to their produce. Many retailers (77 percent) and wholesalers (80 percent) also agreed that the logos add “freshness value” to their produce. More than half the retailers (61 percent) and about half the wholesalers (48 percent) indicated that they used the logos because they were obtained free of cost. Some of the retailers (48 percent) and wholesalers (49 percent) agreed that the logos added “beauty” to their promotions.

The places where the Jersey Fresh Logos were most advertised by retailers are listed in Table 2. Logos were reported to be most used on price cards affixed to produce (83 percent) followed by posters and banners (79 percent). The places where the logo was displayed most by retailers coincides with the places where the consumers reported seeing the Jersey Fresh Logos, except in the case of media advertisements.

When asked how participation in the program through the use of logos had changed their average gross sales, 41 percent of the retailers and wholesalers who responded indicated that using the logos had increased their average gross sales. While 14 percent of retailers and 7 percent of wholesalers reported no change, 41 percent of wholesalers and 36 percent retailers reported that they did not know.

Table 2: Advertisement Material on Which Retailers Used the Jersey Fresh Logo

Items on which Jersey Fresh Logo is used	Percentage
Price Cards on Produce	82.7
Posters & Banners	78.8
Stickers	61.5
Recipe Cards	38.2
Salesperson Caps, Aprons etc,	37.3
Produce Demos or Displays	25.0
Media Advertisements	15.4
Bill Boards	9.6

Retailers and wholesalers were asked to rank the effectiveness of the five Jersey Fresh promotions in increasing their sales (Table 3). Promotional materials such as labels and posters were clearly ranked as most important by both retailers and wholesalers. Promotional advertisements through media were ranked as the second most important promotion. The rest of the promotions in descending order of effectiveness were other miscellaneous promotions, promotional events, and matching funds to direct marketers.

The fact that the matching funds were considered least effective by all the groups, farmers, retailers and wholesalers, was consistent with the opinion voiced in the focus group meeting of farmers that the use of matching funds needed to be increased to be effective.

Table 3: Ranking of Different Jersey Fresh Promotions

Jersey Fresh Promotion	Responses of Retailers, Mean (Std.Dev)	Responses of Wholesalers, Mean (Std.Dev)
Promotional Material	1.64 (0.70)	1.48 (0.71)
Media Advertising	1.84 (1.13)	2.04 (1.11)
Miscellaneous	2.27 (2.27)	2.47 (2.11)
Promotional Events	2.79 (1.03)	2.66 (0.90)
Matching Funds	3.03 (1.26)	2.94 (1.34)

Note: Rank 1= most effective ... rank 5 = least effective.

When asked about their opinion of consumer awareness of the Jersey Fresh Logos the response of the retailers and wholesalers were similar to that of the farmers. The categories of responses were as given in Table 4. A majority of the respondents were of the opinion that the consumer awareness of the logos was moderate.

Table 4: Percentages of Responses for Opinion on Consumer Awareness*

Awareness	High	Moderate	Poor	Do Not Know
Retailers	25.9	55.2	5.2	10.3
Wholesalers	20.4	57.1	4.1	16.3

Note: * Percentages do not add up due to rounding and 2 item non-respondents.

The attitude of retailers and wholesalers in using logos other than Jersey Fresh was observed in order to detect any other reason for non-usage. Of those who responded, 35 percent of retailers and 36 percent of wholesalers indicated that they used other logos. Half of these respondents (54 percent retailers and 50 percent wholesalers)

indicated that the logos increased their produce sales, while none indicated a decrease in sales.

Wholesalers Opinions of the Quality Grading Program

Of the 89 respondents who were wholesalers, 70 percent were aware of the quality grading program (Table 5). Only 24 percent of the wholesaler participants were registered in the quality grading program while 76 percent were not. This indicates that more than half of the wholesalers chose not to enroll in the program although they were aware of the program.

Table 5: Percentages of Responses for Awareness of Quality Grading Program

Wholesalers %	Yes	No	Not Sure
Awareness	69.6	18.5	10.9
Registered	23.6	76.4	0

* Percentages do not add up due to rounding and five item non-responses.

Opinions of wholesalers who were members of the program were further investigated. When asked which logo they used to identify quality inspected produce, the majority (72 percent) indicated the promotional logo, 33 percent indicated the quality grading logo and only 28 percent indicated the premium logo. This indicated that the promotional logo was more used than the quality grading and premium logos combined.

When asked how the participation in the quality-grading program affected their annual sales of produce, the response was ambiguous. Of all the wholesalers who were participating in the program, 33 percent said that participating in program had increased their gross sales. None indicated a decrease in sales, 38 percent indicated that there had been no change in the sales of their fresh produce and another 24 percent said they were unsure.

Those who were participating in the quality grading program were asked if they wanted the promotional logos and premium logos to be the same logo or different logos. The majority (64 percent) indicated that they wanted them to be the same, 5 percent wanted them to be different and another 21 percent indicated that they had no particular preference. The results cross-tabulated with the responses of farmers and direct marketers were similar, as shown in Table 6.

Table 6: Preference in Using the Promotional and Premium Logos*

Response	Farmers %	Retailers %	Wholesalers %
Same Logo	71.4	57.1	63.6
Different Logos	7.2	7.1	4.5
No Preference	17.9	21.7	22.7

* Percentages do not add up due to rounding and missing frequencies.

When all the wholesalers, both participants and non-participants in the quality grading program, were asked if they used any other quality grading procedures, only 23 percent indicated that they used other quality grading procedures. The majority (75 percent) reported using no other grading procedures.

Reasons for Non-Participation in the Quality Grading Program

The respondents who indicated that they did not participate in the quality-grading program were asked to choose the best reason that explained the reason for their non-participation. Of the 68 wholesalers who responded, 25 percent cited reasons of not knowing about the program or not being interested in having produce inspected. Another 21 percent indicated other reasons for not participating, apart from those given in the choices, while 18 percent believed the logo was not effective in obtaining a premium price. Only 6 percent of the respondents indicated the registration fee as a reason for non-participation. The most common individual reason given among the wholesalers was that they followed their own standards for quality grading.

Descriptive Statistics for General Questions

Most of the retailers who responded had markets in central and northern New Jersey, while most of the wholesalers were from southern New Jersey. Of the 79 direct marketers who responded, 38 percent had markets in northern New Jersey, 39 percent in the central region and 23 percent in the southern region. Of the 82 wholesalers who responded, 18 percent were from northern New Jersey, 24 percent from central, and 39 percent from southern New Jersey.

The distribution of retailers and wholesalers in the survey sample by percentage of annual production is given in Table 7. Of the retailers, 36 percent retailed 100 percent of their product whereas 29 percent of wholesalers sell 100 percent of their annual trade as wholesale. The survey seems to consist of primarily wholesalers who also do only a small percentage of retailing and primary retailers who also do wholesale business.

When asked about the trend in retail business over the last five years, 54 percent of the retailers reported that it was increasing, 19 percent said it was decreasing, another 19 percent said there was no significant change, and 6 percent said there was no clear trend. The corresponding opinions of wholesalers were similar; 53 percent said it was increasing, 18 percent said it was decreasing, 19 percent said there was no change, and 10 percent indicated that there was no clear trend. This shows that the majority of both retailers (54 percent) and wholesalers (53 percent) agreed that the gross sales in direct marketing business in the last five years were increasing. This result was consistent with the previous direct marketing studies (Brooker *et al*, 1987; Govindasamy, 1995). This could be one of the reasons for the higher usage of promotional logos compared to premium logos.

Table 7: Distribution of Retailers and Wholesalers by Percent of Annual Production Retailed or Wholesaled Respectively

Percentage	<20 %	21-40%	41-60%	61-80%	81-99%	100%
Retailers	8.8	6.2	12.5	13.7	16.7	35.8
Wholesalers	16.1	3.9	4.4	7.5	26.7	29.2

The most common type of advertising used by the majority of retailers was word-of-mouth (86 percent), followed by signs (77 percent), newspaper ads (58 percent), brochures and mail (22 percent), radio (18 percent), followed by TV (9 percent), and miscellaneous types. Word-of-mouth was the most effective form of advertising for all retailers. Television advertisement, although popular among consumers, was one of the highest priced media that only some of the retailers could afford. Since most of the direct markets cater to the consumers in a specific local area, signs and newspaper ads were more cost effective than TV or radio advertisements. Among the surveyed retailers, 80 percent had roadside stands, 27 percent had farmers' markets, and 33 percent had pick-your-own operations.

Demographic Information of Retailers and Wholesalers:

The average age of the retailers' survey sample was 53.3 while that of wholesalers was 51.5 years. The average education was more than high school for both the groups, (on a scale where 1 = less than high school, 2 = some college, and 3 = undergraduate degree or more, retailers averaged at 1.7 while wholesalers averaged 1.6). The average number of years of experience of retailers was 23.4 years. The sample means of the retailer data indicated that the average retailer had a market in a suburban location where the land zoning was residential which was operational for an average of 6.4 months during a year.

The frequency distribution of incomes among the retailers and wholesalers are listed in Table 8. Over twice as many wholesalers (19 percent) reported annual gross incomes of at least \$1 million than did retailers (9 percent).

Logit Analysis of Direct Marketer and Wholesaler Data

This section presents the results of two models constructed for study of the direct marketers and two models that were constructed for study of wholesalers. The data for the direct marketers' study was taken from the farmers and direct marketers survey; the data for the wholesalers' survey was taken from farmers' survey and wholesalers' survey.

Table 8: Frequency Distribution of Annual Gross Farm Income

Income Category	Retailers (Percentage)	Wholesalers (Percentage)
Less than \$25,000	26.7	9.5
\$25,000 - \$49,999	10.7	14.3
\$50,000 - \$99,000	10.7	9.5
\$100,000 - \$249,000	22.7	15.5
\$250,000-\$499,999	14.7	19.0
\$500,000-\$999,999	4.0	13.1
\$1,000,000-\$1,599,999	6.7	9.5
\$1,600,000 or more	2.7	9.5

In the direct marketers’ models, the first model identified the characteristics of direct marketers who had been using the Jersey Fresh Logos in their market outlets. The second model identified the characteristics of direct marketers who would be interested in using the Jersey Fresh Logos in the future. The two models of wholesalers were also constructed similarly to identify the current and future users of Jersey Fresh Logos among wholesalers.

Models were selected based on their overall predictive power and their joint p-value. The p-values for the models were in the range of 0.001 to 0.0001 for all the models. The lower p-value indicated that the explanatory variables together as a group were significant and that they explain the variation in the dependent variable. The description of the explanatory variables is given in Tables 9 and 10 for direct marketers and wholesalers respectively.

Interpretation of the Logit Model Results

The dummy variable CONSUM, which denoted if the retailer or wholesaler believed that there existed high awareness of Jersey Fresh among consumers was significant in the first retailers’ model but not in the wholesalers’ models. The results indicate that

Table 9: Description of the Variables Used in Direct Marketer Logit Models

Variable	Freq.	Mean	Std. Dev
Dependent Variables			
Use Jersey Fresh Promotions (USE)			
Yes	67	0.6091	0.4902
No*	43	0.3909	0.4902
Willing to Use Jersey Fresh in the Future (FUT)			
Yes	70	0.6972	0.4611
No*	18	0.3078	0.4611
Explanatory Variables:			
What is your opinion about the awareness of Jersey Fresh among consumers? (CONSUM)			
High	29	0.2636	0.4426
Medium/Low*	81	0.7364	0.4426
Do you use any logos to identify your fresh produce (other than Jersey Fresh)? (OTHER)			
Yes	39	0.3545	0.4793
No*	71	0.6455	0.4793
Annual gross sales in dollars (SALES)	91	410253	967915
Average annual advertisement expenditure (ADEXP)	87	3662.45	8973.40
Do you use signs and newspapers for advertising? (ADVT)			
Yes	81	0.7454	0.4375
No*	29	0.2546	0.4375
Do you use word – of – mouth type of advertising? (W-OF-M)			
Yes	83	0.7545	0.4323
No*	27	0.2455	0.4323
Is more than 75 percent of production is wholesaled? (WHL75)			
Yes	31	0.2818	0.4519
No*	79	0.7182	0.4519
Number of Acres being farmed (ACRES)	109	171.79	313.32
Is more than 75 percent of the production is retailed? (RET75)			
Yes	54	0.4909	0.5022
No*	56	0.5091	0.5022

Variable	Freq.	Mean	Std. Dev
Age of the active producer (AGE)	103	52.43	12.824
Farm outlet open for 8 or more months? (OPEN)			
Yes	54	0.4909	0.5022
No*	66	0.5091	0.5022
Type of location of the retail market? (URBAN)			
Urban	11	0.1000	0.3013
Not Urban*	99	0.9000	0.3013
Number of years in farming (NUM)	100	22.170	15.142
Annual Off-farm Income (OFINC)			
\$79,999 or less	25	0.7727	0.4209
More than \$80,000*	85	0.2273	0.4209
Annual Gross Farm Income (FAINC)			
Less than \$100,000*	54	0.5090	0.5022
\$100,000 or more	56	0.4910	0.5022

Note: * refers to the category that was generally omitted in the logit analysis.
All the models have the same specification for the explanatory variables used.

Table 10: Description of the Variables Used in Wholesaler Logit Models

Variable	Freq.	Mean	Std. Dev
Dependent Variables			
Use Jersey Fresh Promotions (USE)			
Yes	56	0.5137	0.5021
No*	53	0.4863	0.5021
Willing to Use Jersey Fresh in the Future (FUT)			
Yes	76	0.6972	0.4615
No*	33	0.3028	0.4615
Explanatory variables:			
What is your opinion about the awareness of Jersey Fresh among consumers? (CONSUM)			
High	26	0.2385	0.4281
Medium/Low*	83	0.7615	0.4281
Do you use any logos to identify your fresh produce (other than Jersey Fresh)? (OTHER)			
Yes	40	0.3669	0.4842
No*	69	0.6331	0.4842
Annual gross sales in dollars (SALES)	91	548863	10E-6
Average annual advertisement expenditure (ADEXP)	85	9538.9	54587
Use signs and newspapers for advertising? (ADVT)			
Yes	45	0.4128	0.4946
No*	64	0.5872	0.4946
Use word – of – mouth type of advertising? (W-OF-M)			
Yes	68	0.6238	0.4866
No*	41	0.3762	0.4866
Is more than 75 percent of production is wholesaled? (WHL75)			
Yes	58	0.5321	0.5012
No*	51	0.4679	0.5012
Is more than 75 percent of the production is retailed? (RET75)			
Yes	27	0.2477	0.4336
No*	82	0.7523	0.4336
Age of the active producer (AGE)	99	51.959	12.872
Education of the active producer (EDUC)			
Less than college*	93	0.1467	0.3555
More than college	16	0.8533	0.3555
Annual Gross Farm Income (FAINC)			
Less than \$100,000*	46	0.5779	0.4961
\$100,000 or more	63	0.4221	0.4961

Note: * refers to the category that was generally omitted in the logit analysis.
All the three farmers' models have the same specification for the explanatory variables used.

Table 11: Characteristics of Current Users of Jersey Fresh Promotions Among Direct Marketers

<i>Variable</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>Change in Probability</i>
INTERCEPT	-0.5642	3.0079	-0.0285
CONSUM*	1.9798	1.0541	0.1001
OTHER	0.6887	0.8951	0.0348
SALES*	0.0007	0.0004	3.8E-5
FRET	1.1824	0.7806	0.0598
ADVT	-0.3535	0.9196	-0.0179
WOFM	1.3607	0.9554	0.0688
AGE	-0.0197	0.0356	-0.0010
NUM**	0.0739	0.0369	0.0037
OPEN*	1.4111	0.8243	0.0713
URBAN*	2.7306	1.5098	0.1381
OFINC	0.5188	2.0431	0.0262
FAINC	-3.9330	3.2991	-0.1988
FAINC2	0.2586	0.8118	0.0131

McFadden's R² is: 0.4931

Ratio of non-zero observations to the total number of observations: 0.6125

Note: *: Significant at the 0.10 level
 **: Significant at the 0.05 level
 ***: Significant at the 0.01 level

Table 12: Predictive Accuracy of Model One

		<i>Predicted</i>	
		0	1
<i>Actual</i>	0	21	12
	1	10	37

Number of correct predictions: 58

Percentage of correct predictions: 72.5

Table 13: Characteristics of Potential Future Users of Jersey Fresh Promotions Among Direct Marketers

<i>Variable</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>Change in Probability</i>
INTERCEPT	7.3130	2.7704	0.5268
CONSUM	-0.1491	0.9160	-0.0107
OTHER*	1.6340	0.8931	0.1177
SALES**	1.2E-6	1.8E-6	8.8E-8
ADVT	-1.1112	0.8141	-0.0801
WOFM	0.9254	0.7924	0.0667
WHL75**	-3.6833	1.8018	-0.2654
RET75**	-3.2152	1.6136	-0.2316
ACRES	-0.0013	0.0016	-9.3E-5
AGE**	-0.0723	0.0343	-0.0052
OPEN***	2.1099	0.8102	0.1520
FAINC	-0.3171	0.9507	-0.0228

McFadden's R² is: 0.3306

Ratio of non-zero observations to the total number of observations: 0.7955

Note: *: Significant at the 0.10 level
 **: Significant at the 0.05 level
 ***: Significant at the 0.01 level

Table 14: Predictive Accuracy of Model Two

		<i>Predicted</i>	
		0	1
<i>Actual</i>	0	5	6
	1	13	64

Number of correct predictions: 69

Percentage of correct predictions: 78.4

Table 15: Characteristics of Current Users of Jersey Fresh Promotions Among Wholesalers

<i>Variable</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>Change in Probability</i>
INTERCEPT	1.5323	2.0717	0.2150
CONSUM	1.1416	0.9329	0.1602
OTHER**	1.7071	0.8771	0.2395
SALES	0.0002	0.0004	2.2E-5
FWHL	-0.2820	0.7367	-0.0396
WHL75	-2.0671	0.9641	-0.2900
AGE	-0.0574	0.0362	-0.0080
EDUC*	-2.2257	1.1687	-0.3123
ADVT**	2.2047	1.1104	0.3093
WOFM**	1.7847	0.8607	0.2504
FAINC	0.2899	0.8451	0.0407

McFadden's R^2 is: 0.4791

Ratio of non-zero observations to the total number of observations: 0.5500

Note: *: Significant at the 0.10 level
 **: Significant at the 0.05 level
 ***: Significant at the 0.01 level

Table 16: Predictive Accuracy of Model Three

		<i>Predicted</i>	
		0	1
<i>Actual</i>	0	26	11
	1	10	33

Number of correct predictions: 59

Percentage of correct predictions: 73.8

Table 17: Characteristics of Potential Future Users of Jersey Fresh Promotions Among Wholesalers

<i>Variable</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>Change in Probability</i>
INTERCEPT	3.6478	2.1198	0.3640
FWHL**	1.6556	0.8122	0.1652
CONSUM	0.7839	0.8820	0.0782
OTHER**	1.7162	0.8395	0.1713
SALES*	2.1E-6	1.1E-6	2.1E-7
WHL75***	-3.7041	1.3883	-0.3696
RET75	-2.0416	1.2699	-0.2037
AGE	-0.0440	0.0310	-0.0044
EDUC	-1.0582	1.0573	-0.1056
ADVT	-0.9601	0.8606	-0.0958
WOFM***	2.2030	0.7877	0.2198
FAINC	-0.6218	0.9617	-0.0621

McFadden's R^2 is: 0.3989

Ratio of non-zero observations to the total number of observations: 0.7294

Note: *: Significant at the 0.10 level
 **: Significant at the 0.05 level
 ***: Significant at the 0.01 level

Table 18: Predictive Accuracy of Model Four

		<i>Predicted</i>	
		0	1
<i>Actual</i>	0	13	4
	1	10	58

Number of correct predictions: 71

Percentage of correct predictions: 83.5

retailers who believe that the logos were popular among consumers were 10 percent more likely to be using the logos.

The dummy variable OTHER which examined if the retailer or wholesaler used any other logos in promoting their fresh produce was found to be significant in the future user models for retailers and wholesalers and the current wholesale users model (Tables 13, 15 and 17). Retailers who used other logos were 11 percent more likely to use Jersey Fresh Logos in future than retailers who did not use any other logos. Wholesalers who used other logos to sell their produce were 24 percent more likely to use Jersey Fresh Logos. The wholesalers were also 17 percent more willing to use the Jersey Fresh Logos in the future compared to those who did not use any other logos.

Two variables SALES and ADEXP were included in all the models. The sales variable was the average gross sales income of the respondent and the ADEXP was the average advertising expenditure of the respondent. The results indicate that as the income from sales increase, the probability that a wholesaler would be willing to use the Jersey Fresh Logos in the future also increase (Table 17). The greater the advertising expenditure by retailers, the more likely they were to have used Jersey Fresh Logos in their advertisements (Table 11). The age of the retailers (AGE) was found significant with a negative estimate in the current retail users model indicating that as the age of the retailer increased, the probability of their having used Jersey Fresh Logos decreased. Another important result was that as the years of experience of the farmer in retailing (NUM) increased, the probability of using the logos in the future also increased (Table 13). Since all the above variables were continuous with high standard deviations, the results showed only small changes in probability.

Two variables related to advertising were added to the retailers and wholesalers models. The variable ADVT captured the effect of the respondents' use of signs for promoting their produce; the variable WOFM denoted those who used word-of-mouth for advertising. The results indicated that most of the retailers used both the above types of advertising, hence no significant conclusion could be derived. Wholesalers

who relied on word-of-mouth to promote the sales of their produce were 25 percent more likely to have used Jersey Fresh Logos and were 21 percent more willing to use the logos in the future.

The variable for primary retailers who sell more than 75 percent of the annual sales in direct consumer retail sales was significant in predicting the future retailer users of Jersey Fresh. The estimate showed a negative coefficient significant at the 0.05 level and implied that retailers who sold more than 75 percent of their total sales in retailing produce to consumers were 27 percent less likely to be willing to use Jersey Fresh Logos in the future than those who did not. Primary wholesalers (WHL75) who wholesale more than 75 percent of their produce were 37 percent less willing to use them in the future. The results suggest that primary wholesalers and primary retailers were less willing in promoting their produce with Jersey Fresh Logos in the future.

Retailers who sold produce through outlets that were open for more than 8 months of the year (OPEN) were found to be 7 percent more likely to be users of Jersey Fresh Logos than their counterparts. They were also 15 percent more willing to use Jersey Fresh Logos in the future. Given that the major agricultural production season in the state spanned 6 to 7 months (NJ Farm Bureau, 1995), this result implies that farmers who sold produce through greenhouse production or who retailed produce acquired from outside New Jersey were more likely to use Jersey Fresh Logos compared to farmers who sold produce for less than 8 months in a year.

Retailers with outlets in urban areas were 13 percent more likely to use Jersey Fresh Logos compared to those in the rural or suburban areas. The retailers in these regions cater to the produce needs of urban populations, in competition with supermarkets in the areas. Hence they might use the Jersey Fresh Logos to promote the freshness and quality aspects of their farm produce.

The dummy variable FWHL for wholesalers who were also farmers showed that they were 17 percent more likely to use Jersey Fresh Logos in the future than wholesalers

who were not farmers. A similar dummy variable (FRET) for retailers who were also farmers which was used in the retailers models was not significant.

Conclusions and Recommendations

Summary of Survey Results

1. Retailers who believed that consumers were highly aware of Jersey Fresh were found more likely to have been using the Jersey Fresh Logos. Retailers who used other logos to identify their fresh produce were found more likely to use Jersey Fresh Logos in the future.
2. Retailers with outlets in the urban areas of New Jersey and with retail outlets that were open for more than 8 months during the year were more likely to be use Jersey Fresh Logos. Farmers with more experience in retailing produce were more likely to use the logos.
3. Willingness to use Jersey Fresh Logos in the future was found to be lower among retailers who sell more than 75 percent of their sales in retailing. Willingness to use the logos was also found to decrease with the age of retailers.
4. Wholesalers who used other logos, who advertised through signs and used word of mouth to identify their produce were more found more likely to use the Jersey Fresh Logos.
5. Primary wholesalers, who sell more than 75 percent of their annual trade to other wholesale buyers, were found less likely to use the logos and less willing to use the logos in the future.
6. It was found that as the amount spent on advertising by wholesalers increased, the likelihood to use Jersey Fresh Logos in the future also increased. Wholesalers who were farmers were found more willing to use the Jersey Fresh Logos than those who were not farmers.

The results from the logit models help determine which characteristics of wholesalers and retailers influence their awareness and participation in the Jersey Fresh Program. The summary of the important findings are shown in the Table 19 which shows the common significant coefficients (with the stars indicating the level of significance) and their respective coefficient sign (+ or -). The table summarizes the results of the direct marketers (DM) and wholesalers logit models' results.

Conclusions and Recommendations

The purpose of the Jersey Fresh Program is to promote the sales of produce grown in New Jersey by emphasizing the freshness, quality and, above all, the “locally grown” aspect of the produce.

Table 19: Summary of Direct Marketer (Retailer) and Wholesaler Logit Models

Variable	Retailer Models		Wholesaler Models	
	Use logo	Willing to	Use logo	Willing to
CONSUM	+*	+	+	+
OTHER	+*	+*	+**	+**
SALES	+*	+**	+	+*
WHL75		-**	-	-***
RET75		-**		-
AGE	-	-**	-	-
EDUC			-*	-
OPEN	+*	+***		
ADVT	-	-	+**	-
WOFM	+	+	+**	+***
FRET/WHL	+		-	+**
INCOME	-	-	+	-
NUM	+**			

Note: 1. The positive and negative signs indicate the sign of the variable coefficient in the models. 2. * Refers to significance of the variable in that model at 0.10 percent level, ** refers to significance of the variable at 0.05 percent level, *** refers to significance of the variable in the model at 0.01 percent level.

The results of this study indicate that the promotional aspect of the program was more popular among all the participant groups than the quality control aspect. The focus group meetings of wholesalers and retailers, as well as the mail surveys, indicated that a greater number of participants were aware of and were using the promotional logo than the quality grading logo. Only a fifth of the wholesalers who were aware of the

quality-grading program were enrolled in the program. The results also indicated that participants who thought that consumer awareness of the program was high were more likely to be enrolled. Hence, a greater number of retailers and wholesalers might be motivated to participate in the program if they were informed of the high awareness of the program among consumers, as evident from results of the consumer survey phase of this study.

The benefits of the Jersey Fresh Program were more stressed by direct marketers than by wholesalers. Small retailers with farm markets and roadside stands seem to be benefiting most by using the advertisements of the Jersey Fresh Program that promote locally grown fresh produce. Since the farm markets sell farm-fresh produce just as the logos indicate, the Jersey Fresh Logos have become more commonly associated with these operations. While it was evident that the promotions are benefiting the farm markets, the program could probably be made more popular through other kinds of markets as well.

Since the advertisements of the Jersey Fresh Program feature popular crops grown in New Jersey, the program benefits retailers and wholesalers both directly and indirectly. It would appear that the overall performance of the program could be improved further by the various groups involved in the Jersey Fresh Program - namely the farmers, wholesalers and retailers - coming together and working to promote the program.

It appears that the motivation for wholesalers to participate in the program needs to be improved. They seem to feel that the promotional aspect of the program offers little advantage to them directly. Since the promotion of the program would appear to increase the demand for fresh produce in New Jersey, wholesalers would benefit from the program. Moreover, the quality assurance that the logo is associated with could help in obtaining a premium price for their produce. Advertising the produce in all the markets that New Jersey wholesalers sell would likely increase sales and would help in increasing overall popularity of Jersey Fresh produce.

Wholesalers are less inclined to participate in the Jersey Fresh Quality Grading Program as they feel that there is little incentive to have their produce inspected. Many direct marketers are using promotional logos for advertising but are not registered in the quality grading program as they are also not interested in having their produce inspected. The quality-grading program needs to be more differentiated so that participants and non-participants are evident in terms of the prices they receive. Wholesalers should be more motivated to participate in the program when the incentive for participation becomes apparent.

The results of this study make it evident that increased patronage of the Jersey Fresh Products by consumers would be followed by increased motivation for retailers and wholesalers to participate in the program. This study also illustrates that most retailers and wholesalers participating in the program prefer the colorful Jersey Fresh Promotional Logo (A) and would like to have one common logo for both promotion and quality grading.

Jersey Fresh retailers and wholesalers feel that the logos are effective in increasing sales. Most feel that the popularity of the logo among the consumers is moderate. Non-users are primarily those who do not retail any produce, retail very large quantities with their own logos or retail very small amounts for short periods of time during the year.

References

- Adelaja, A. O., R. M. Nayga, Jr., and B. Schilling, "Returns to the Jersey Fresh Promotional Program -- An Econometric Analysis of the Effects of Promotion Expenditures on Agricultural Cash Receipts in New Jersey," Report submitted to the Division of Markets, New Jersey Department of Agriculture, April 1994.
- Blisard, W.N., Blaylock J.R., "*Generic Promotions of Agricultural Products- Balancing Producer's and Consumers' Needs*", Economic Research Service, USDA, Agricultural Information Bulletin 565, 1989.
- Brooker, J.R., C. L. Stout, D.B. Eastwood, R. H. Orr, "*Consumers' Perception of Locally Grown Produce at Retail Outlets*," Journal of Food Distribution Research, Feb. 1987, pp. 99-107.
- Brooker, J.R., C. L. Stout, D.B. Eastwood, R. H. Orr, "*Analysis of In-store Experiments Regarding Sales of Locally Grown Tomatoes*," Tennessee Agricultural Experiment Station, Bulletin 654, 1987.
- Census of Agriculture, 1992. *U.S. Summary and County Level Data*. U.S. Bureau of the Census, Washington D.C.
- Eastwood, D.B., J.R. Brooker, and R.H. Orr, "*Consumer Preferences for Selected Fresh Produce - A Case Study*," Tennessee Agricultural Experiment Station, Bulletin 650, 1987.
- Gallup Organization, Inc., "*Awareness of and Attitude Toward Jersey Fresh Program*," Princeton, New Jersey, 1986.
- Gallup Organization, Inc., "*Awareness of and Attitude Toward Jersey Fresh Program*," Princeton, New Jersey, 1987.
- Gallup Organization, Inc., "*Awareness of and Attitude Toward Jersey Fresh Program*," Princeton, New Jersey, 1988.
- Govindasamy, R., and R.M. Nayga, Jr., "*Visitations to Farmer-to-Consumer Direct Marketing Operations in New Jersey: A Logit Analysis*," New Jersey Agricultural Experiment Station, P-02137-1-95, September 1995.
- Gujarati, Damodar. *Essentials of Econometrics*. McGraw Hill, New York, 1992.
- Halloran, J.M. and M.V. Martin, "*Should States be in the Agricultural Promotion Business?*" Journal of AgriBusiness, 5(1989):65-75.
- Henneberry, S.R. and C.V. Willoughby, "*Marketing Inefficiencies in Oklahoma's Produce Industry: Grower and Buyer Perceptions*," Journal of Food Distribution Reserach, September 89, pp. 97-109.
- Italia, John. "*Consumer Preference for Integrated Pest Management Produce*," Masters Thesis, Rutgers University, New Jersey , October 1997.
- Intriligator, Michael, *Econometric Models, Techniques, and Applications*. Prentice Hall, Inc. Englewood Cliffs, New Jersey, 1978.
- Kmenta, Jan. *Elements of Econometrics*. McMillan Pub. Co., New York, 1971.

Kennedy, P. "A Guide to Econometrics," 4th edition. Cambridge, Massachusetts. The MT Press, 1994.

Lininger, Kimberley, "Estimating Demand Functions for Products that are Differentiated on the Basis of Quality Characteristics of Tomatoes," Southern Journal of Agricultural Economics, Dec. 1985, pp. 139-146.

Lopez, Rigoberto A., Emilio Pagoulatos, and Leo C. Polopolus. "Constraints and Opportunities in Vegetable Trade." Journal of Food Distribution Research, September 1989: pp 63-74.

Moor, Dianne. "Tapping Into State Loyalty," Produce Business. September 1989: pp 26-30

Michigan Department of Agriculture, "1989 Benchmark Attitude and Awareness Study," 1989.

New Jersey Farms Commission, "Ensuring a Fertile Future for New Jersey Agriculture", 1994.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics, Circular #536, 1994.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1993.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1992.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1991.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1990.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1989.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1986.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1985.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1984.

New Jersey Department of Agriculture, "Annual Report on Agricultural Statistics," 1983.

New Jersey Department of Agriculture, "New Jersey Farmers' Survey," 1992.

Nicholson, Walter, "Microeconomic Theory: Basic Principles and Extensions," The Dryden Press, New York, 1991.

Pindyck, R.S., and D.L. Rubinfeld, "Econometric Models and Economic Forecasts," Third Edition. McGraw Hill Book Company, New York, 1991.

Weisburg, H. F., and Bruce D.B., "An Introduction to Survey Research and Data Analysis," W.H. Freeman, San Francisco, 1977.

Zeldis Research Associates, "Jersey Fresh Tracking Study", submitted to Wenzel and Associates on Behalf of the New Jersey Department of Agriculture, November 1993.

Zeldis Research Associates, "Jersey Fresh Tracking Study", submitted to Wenzel and Associates on Behalf of the New Jersey Department of Agriculture, December 1995.

Zind, T. "Fresh Trends 1990: A Profile of Fresh Produce Consumers", The Packer Focus 1989-1990. Vance Publishing Co., Overland Park, Kansas, 1990.

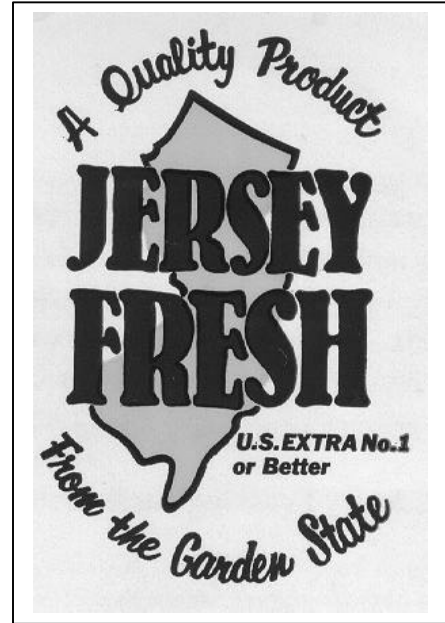
Appendix

The following are the three Jersey Fresh Logos used in the surveys. The first is the promotional logo (A), the second is the quality grading logo (B), and the last is the premium logo (C).

A.



B.



C.



Survey of Producers of Fresh Vegetables

1. Are you a: (check all that are applicable)

- Farmer Wholesaler
 Retailer

2. Are you aware of the Jersey Fresh Program sponsored by the New Jersey Department of Agriculture (NJDA)?

- Yes No

3. Have you used any of the Jersey Fresh Logos (shown below) in your retail outlets?

- Yes If yes, please indicate which of the above: A B. C.
 No If no, please skip to Question No. 13

4. For how many years (since 1984) have you used the Jersey Fresh Logo: ____ yrs; Please circle the year/s you remember NOT using the Jersey Fresh Logo from 1990:

1990 91 92 93 94 95 1996

5. For how many months during a year do you display produce with the Jersey Fresh Logo, please indicate the approximate number of months: ____ months/year

6. Which of the following best describes the reason why you use the Jersey Fresh Logo: Please check all that are applicable:

- Add 'beauty' to promotions (a)
 Add 'locally grown' value (b)
 Add 'freshness value' to produce (c)
 Logos were obtained free of cost (d)
 Other reasons like _____ (e)

Which of the above is the most important reason? ____ (please indicate a, b, c, d, or e)

7. Please list in order of importance (as measured in dollar value of sales) the 6 principal farm products you market with Jersey Fresh Logos (e.g., tomatoes, apples, Xmas trees)

- a. _____ b. _____
 c. _____ d. _____
 e. _____ f. _____

8. Among these various items, check all that were used in your sales advertising with Jersey Fresh Logo in them?

- Billboards Media Advertisements
 Posters, Banners Produce demos/displays
 Price cards of produce Recipe cards
 Stickers Salesperson caps, aprons, etc.

9. How has using the Jersey Fresh Logo in the sales promotions changed your average gross sales?
- | | |
|------------------------------------|-------------------------------------|
| <input type="checkbox"/> Increased | <input type="checkbox"/> Decreased |
| <input type="checkbox"/> No change | <input type="checkbox"/> Don't Know |
10. If your answer to question - 9 is 'Increased' or 'Decreased', please indicate approximately by how much annually?
- | | |
|-------------------------------------|--------------------------------------|
| <input type="checkbox"/> 1 to 10% | <input type="checkbox"/> 31 to 40% |
| <input type="checkbox"/> 11 to 20 % | <input type="checkbox"/> 41 to 50% |
| <input type="checkbox"/> 21 to 30% | <input type="checkbox"/> 51% or more |
11. What is the total amount in dollars you spent in purchasing various Jersey Fresh promotional material (approximately): \$ _____
12. Please rank order the following Jersey Fresh promotions in terms of their effectiveness as 1,2,3,4 and 5, where 1 = most effective ... 5 = least effective
- | | |
|-------|---|
| _____ | Various promotional material (labels, posters...) |
| _____ | Media advertising (T.V, Radio) |
| _____ | Matching funds to direct marketers |
| _____ | Promotional events (e.g. exhibitions, demos) |
| _____ | Any other _____ |
13. Would you be interested in using Jersey Fresh Logos in future.
- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|
- If no, please explain why : _____
14. What is your opinion about the awareness of Jersey Fresh among consumers?
- | | |
|-------------------------------|-------------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Moderate |
| <input type="checkbox"/> Low | <input type="checkbox"/> Don't Know |
15. Do you use any logos to identify your fresh produce (excluding Jersey Fresh Logo)?
- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|
- If yes, how do they effect your fresh produce sales?
- | | |
|-----------------------------------|-------------------------------------|
| <input type="checkbox"/> Increase | <input type="checkbox"/> No Change |
| <input type="checkbox"/> Decrease | <input type="checkbox"/> Don't know |

The Jersey Fresh Quality Grading Program is a commodity inspection program for growers which permits them to use the Jersey Fresh Logo on produce boxes. The logo implies that the produce has been inspected for quality and grade by the program inspectors. The program adds a quality assurance note to the Jersey Fresh marketing program.

16. Are you aware of the Jersey Fresh Quality Grading Program sponsored by the New Jersey Department of Agriculture?
- | | |
|-----------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> Not sure | |

17. Are you registered with the Quality Grading Program? (Registration is done at an annual \$30 fee to become a Jersey Fresh licensee)

Yes --> * Total number of years of participation: _____ years.

Please circle the years you did NOT participate from 1990:

1990 91 92 93 94 95 1996

No --> Please Skip to Question No.21.

18. Which of the logos shown on page 1 do you use to identify quality inspected produce-boxes (check all those used): A B. C.

19. How has participation in Quality Grading Program changed the sales of your fresh produce:

Increased No change
 Decreased Don't know

20. In using the Jersey Fresh promotional quality grading logos, would you prefer them to be:

The same logo
 Different logos
 No preference

21. Do you employ other fresh produce quality & grading procedures (excluding Jersey Fresh Quality Grading procedures) Yes No
 If yes, please specify _____

22. If you do not participate in the Jersey Fresh Quality Grading Program, which of the following best explains the reason for your non-participation: (Check all that are applicable)

Did not know about the program
 Registration fee of \$30 per year is high
 Logo not effective in fetching premium price
 Not interested in having produce inspected
 Any other reason: _____

Your answers to the following questions will be kept strictly confidential and only the summary results will be reported.

1. How many acres do you farm? _____ acres
2. Of these how many do you
 - a) Own: _____ acres
 - b) Rent: _____ acres
 County in New Jersey where your major farming operation located: _____
 County in New Jersey where your major retail sales operation located: _____
3. Value of your annual gross farm sales in dollars: \$ _____
5. What is your average annual advertising & promotional expenditure \$ _____
5. What percentage of your annual production do you wholesale? _____ %
 What percentage do you Retail directly to consumers? _____ %
6. What percentage of your annual production do you sell in New Jersey markets (Direct Consumer Retail Sales only). Please circle the appropriate percentage from below:

0% 10 20 30 40 50 60 70 80 90 100%

7. What is the trend in your annual gross retail sales in the last five years:

- | | | | |
|--------------------------|------------|--------------------------|----------------|
| <input type="checkbox"/> | Increasing | <input type="checkbox"/> | Decreasing |
| <input type="checkbox"/> | No change | <input type="checkbox"/> | No clear trend |

8. Please indicate all method(s) of advertising you use (Circle applicable number(s))

- | | | | |
|--------------------------|------------|--------------------------|-----------------------|
| <input type="checkbox"/> | newspaper | <input type="checkbox"/> | direct mail |
| <input type="checkbox"/> | radio | <input type="checkbox"/> | signs |
| <input type="checkbox"/> | television | <input type="checkbox"/> | word of mouth |
| <input type="checkbox"/> | brochures | <input type="checkbox"/> | other (specify) _____ |

9. Please indicate the number of signs used for advertising (approximately)

_____ on-site _____ off-site

Total market display and sales area (approximately): _____ sq. ft.

10. Check all places you retail:

- | | | | |
|--------------------------|-----------------|--------------------------|-----------------|
| <input type="checkbox"/> | Roadside stands | <input type="checkbox"/> | Farmers Market |
| <input type="checkbox"/> | Pick Your Own | <input type="checkbox"/> | Any other _____ |

Demographic Information: Your answers to the following questions will be kept strictly confidential and only the summary results will be reported.

Age of the active producer: _____ years

Education of the active producer: _____

No. of years in farming: _____ years

No. of years in retailing business: _____ years

Which of the following do you think best describes the area in which your market is located?

- | | | | |
|--------------------------|-------|--------------------------|----------|
| <input type="checkbox"/> | rural | <input type="checkbox"/> | suburban |
| <input type="checkbox"/> | urban | | |

What is the zoning on the land occupied by your farm-market? (Circle one)

- | | | | |
|--------------------------|--------------|--------------------------|-----------------------|
| <input type="checkbox"/> | agricultural | <input type="checkbox"/> | residential |
| <input type="checkbox"/> | commercial | <input type="checkbox"/> | industrial |
| <input type="checkbox"/> | don't know | <input type="checkbox"/> | other (specify) _____ |

Total number of months your market is open during a year _____ months/year

Annual Family Income after taxes:

- | | | | |
|--------------------------|---------------------|--------------------------|-----------------------|
| <input type="checkbox"/> | less than \$20,000 | <input type="checkbox"/> | \$80,000 - \$109,999 |
| <input type="checkbox"/> | \$20,000 - \$49,999 | <input type="checkbox"/> | \$110,000 - \$139,000 |
| <input type="checkbox"/> | \$50,000 - \$79,999 | <input type="checkbox"/> | \$140,000 or more |

Annual Gross Farm Income after taxes:

- | | | | |
|--------------------------|-----------------------|--------------------------|---------------------------|
| <input type="checkbox"/> | less than \$25,000 | <input type="checkbox"/> | \$250,000 - \$500,000 |
| <input type="checkbox"/> | \$25,000 - \$49,999 | <input type="checkbox"/> | \$500,000 - \$999,999 |
| <input type="checkbox"/> | \$50,000 - \$99,999 | <input type="checkbox"/> | \$1,000,000 - \$1,599,999 |
| <input type="checkbox"/> | \$100,000 - \$249,999 | <input type="checkbox"/> | \$1,600,000 or more |

Thank you very much for participating in this survey. Please mail the survey back in the reply-paid envelope provided to you before Monday, December 2, 1996.

Survey of Fresh Vegetable Retailers and Wholesalers

1. Do you buy fresh produce from New Jersey farmers in wholesale?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

2. Are you aware of the Jersey Fresh Program sponsored by the New Jersey Department of Agriculture (NJDA)?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

3. Are you aware of the Jersey Fresh Quality Grading Program sponsored by the New Jersey Department of Agriculture?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

4. If yes to question 3, are you registered with the Quality Grading Program? (Registration is done at an annual rate of \$30 fee to become a Jersey Fresh licensee)

<input type="checkbox"/> Yes If yes, number of years participated: _____ years.
<input type="checkbox"/> No

5. When buying fresh produce from farmers, do you look specifically for Jersey Fresh Logo on the boxes of the produce?

<input type="checkbox"/> Always
<input type="checkbox"/> Sometimes
<input type="checkbox"/> Never

6. Have you ever bought fresh produce from farmers who had the Jersey Fresh Quality Grading logo on their produce boxes?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

7. What is your opinion about the fresh produce sold with Jersey Fresh Logos on the boxes in terms of the following aspects?

	<i>Good</i>	<i>Same as others</i>	<i>Poor</i>	<i>Don't Know</i>
Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Package	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Freshness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. How do you think the participation of farmers and wholesalers in Jersey Fresh Quality Grading Program would change their sales of fresh produce?

<input type="checkbox"/> Increase	<input type="checkbox"/> Decrease
<input type="checkbox"/> No Change	<input type="checkbox"/> Don't know

9. Does the knowledge of origin of the fresh produce affect your purchasing decision for fresh produce?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

10. Do you wish to buy fresh produce that is grown in New Jersey farms?

- Yes No

11. Would you like to buy quality-inspected produce from farmers?

- Yes No

12. Would you find the Jersey Fresh Quality logo useful in identifying New Jersey's fresh and quality produce?

- Yes No
 Not sure

13. What would be your reaction to Jersey Fresh Quality logos on produce you wish to buy?

- I would definitely buy more
 I would occasionally buy more
 I would buy as much as I originally planned
 I would buy less than I planned
 Don't know

14. How much more over the current price would you be willing to pay for Jersey Fresh Quality tested produce that is fresh from New Jersey farms?

- I will not pay more 11 % to 20% more
 1 % to 10 % more More than 20 %

15. What is your opinion about the awareness of the quality-grading program among wholesale produce buyers?

- High Moderate
 Low Don't Know

16. What is opinion on the overall effectiveness of the Jersey Fresh Quality Grading Program in terms of quality control:

Not Effective 1 2 3 4 5 6 7 **Very Effective**

17. Would you be interested in participating in the Jersey Fresh Quality Grading Program in future?

- Yes No

If no, please explain why: _____

18. What is your opinion about the awareness of Jersey Fresh promotions among consumers?

- High Moderate
 Low Don't know

19. What is opinion on the overall effectiveness of the Jersey Fresh Promotional Program in terms increasing sales of New Jersey produce in the market:

Not
Effective 1 2 3 4 5 6 7 **Very**
Effective

20. How has participation in Quality Grading Program changed the sales of your fresh produce?

- | | |
|------------------------------------|-------------------------------------|
| <input type="checkbox"/> Increased | <input type="checkbox"/> No change |
| <input type="checkbox"/> Decreased | <input type="checkbox"/> Don't know |

21. Please list in order of importance (as measured in dollar value of sales) the 6 principal farm products you market with Jersey Fresh Logos (e.g., tomatoes, apples, Xmas trees)

- | | |
|----------|----------|
| a. _____ | b. _____ |
| c. _____ | d. _____ |
| e. _____ | f. _____ |

If you market any of the above with Jersey Fresh Logo – Please circle the alphabet.

22. What percentages of your annual trade do you:

- | | |
|----------------------|---------|
| Sell to retailers? | _____ % |
| Sell to wholesalers? | _____ % |
| Retail to consumers? | _____ % |

23. From where do you acquire most of the fresh produce you market? Please check all that are applicable:

- | | |
|---|---|
| <input type="checkbox"/> Own Farms | <input type="checkbox"/> Landsville Co-op |
| <input type="checkbox"/> Other Farms | <input type="checkbox"/> Vineland Auction |
| <input type="checkbox"/> Terminal Markets | <input type="checkbox"/> Swedesboro Auction |
| <input type="checkbox"/> Out of State | <input type="checkbox"/> Any other, please specify: |

24. In which of the following markets do you sell fresh produce? Please check all that are applicable:

- | | |
|---|---|
| <input type="checkbox"/> Supermarkets | <input type="checkbox"/> Landsville Co-op |
| <input type="checkbox"/> Roadside Stands | <input type="checkbox"/> Vineland Auction |
| <input type="checkbox"/> Terminal Markets | <input type="checkbox"/> Swedesboro Auction |
| <input type="checkbox"/> Farmers Markets | <input type="checkbox"/> Any other, please specify: |

25. Do you use any logos to identify your fresh produce (excluding Jersey Fresh Logo)?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

If yes, how do they effect your fresh produce sales?

- | | |
|-----------------------------------|-------------------------------------|
| <input type="checkbox"/> Increase | <input type="checkbox"/> No Change |
| <input type="checkbox"/> Decrease | <input type="checkbox"/> Don't know |

26. What percent of your annual sales do you sell for markets outside New Jersey? _____%.

27. What is the average value of your annual gross sales from wholesaling fresh produce? _____%.

General Questions:
Your answers to the following questions will be kept strictly confidential and only the summary results will be reported.

County in New Jersey where your major operation located: _____

Number of years respondent has been in wholesaling business: _____ years

Age of the active responding wholesaler: _____ years

Size of respondents wholesale business operation: _____ years

To market your produce do you hire:

- | | |
|---------------------------------------|-----------------|
| <input type="checkbox"/> Salespersons | How many? _____ |
| <input type="checkbox"/> Brokers | How many? _____ |

Total number of months your business is active during a year _____ months/year

Which of the following do you think best describes the area where you market fresh produce?

- | | |
|--------------------------------|-----------------------------------|
| <input type="checkbox"/> Rural | <input type="checkbox"/> Suburban |
| <input type="checkbox"/> Urban | |

Highest level of education of the respondent

- | | |
|--|---|
| <input type="checkbox"/> Less than high school | <input type="checkbox"/> Some College |
| <input type="checkbox"/> Advanced Prof. | <input type="checkbox"/> High School graduate |
| <input type="checkbox"/> College Graduate | <input type="checkbox"/> Degree |

Annual Gross Farm Income after taxes:

- | | |
|--|--|
| <input type="checkbox"/> less than \$25,000 | <input type="checkbox"/> \$250,000 - \$500,000 |
| <input type="checkbox"/> \$25,000 - \$49,999 | <input type="checkbox"/> \$500,000 - \$999,999 |
| <input type="checkbox"/> \$50,000 - \$99,999 | <input type="checkbox"/> \$1,000,000 - \$1,599,999 |
| <input type="checkbox"/> \$100,000 - \$249,999 | <input type="checkbox"/> \$1,600,000 or more |

Thank you very much for participating in this survey. Please mail the survey back in the reply paid envelope provided to you before Friday, February 21, 1997.



**Rutgers Cooperative Extension
N.J. Agricultural Experiment Station
Rutgers, The State University of New Jersey, New Brunswick**

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