

Value Determination of Pesticide Residue-Tested Potatoes*

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Abstract

This study analyzed consumer response to potatoes tested for pesticide residues. These potatoes were packed in five pound bags and priced at three different levels in participating supermarkets. Even when sold at identical prices, consumers continued to favor the traditional round white over the residue-tested potatoes. However, sales of residue-tested were equal at all three price levels, indicating little price resistance among consumers interested in this type of product.

Introduction

Consumer preferences have been greatly influenced by growing concerns about food safety. The February 1989 release of the controversial report, "Intolerable Risk: Pesticides in our

Children's Food," by the Natural Resources Defense Council spurred a nationwide fear that brought food safety issues into the public and political spotlight (Shimskey, 1989).

The actual health risks continue to be debated. Nevertheless, the results of a consumer attitude survey conducted by the Food Marketing Institute show that chemical use and pesticide residue in the food supply is a major worry among consumers (Winter, 1988). This has had substantial impact on growers, shippers and buyers. Specifically, more and more food suppliers and retailers are contracting with commercial services for pesticide residue-testing on various commodities to offer consumers an added level of assurance about food safety (Gordenker, 1989). There is little systematic information about consumer response to residue-testing or their willing-

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ness to pay for it. A perspective on this question is vital to growers and suppliers as the food safety issue continues to gain momentum.

This report describes the proceeding and results of a market test conducted in stores throughout central and southern Maine on potatoes tested for selected pesticide residues. The study was designed to analyze consumer response to residue-tested potatoes with the purpose of acquiring a better understanding of the value consumers place on the testing feature.

Objectives

The study was based on four objectives:

1. To determine if Maine consumers prefer potatoes tested for pesticide residue over traditional Maine round white potato offerings.
2. To identify the additional price, if any, consumers are willing to pay for the pesticide residue-tested potatoes, relative to the standard round whites.
3. To examine the effects of selling the pesticide residue-tested potatoes on the sales of standard round white potatoes.
4. To understand why consumers purchased the pesticide residue-tested product, assess the importance of this characteristic in their produce purchasing decisions, and analyze their willingness to continue buying residue-tested potatoes.

The results are expected to provide packers, shippers and retailers with insights about consumer response to residue-tested potatoes and help them develop more refined marketing decisions on the product.

Methodology

The study design was based on two parts relating to the objectives. To meet the first three objectives, part one consisted of in-store experiments and statistical analyses of potato shipment data from participating retail stores. The second

component, designed to accomplish objective four, incorporated a consumer survey of attitudes about the residue-tested product and consumer satisfaction with the potatoes. Brief survey forms were enclosed in one-third of the bags containing residue-tested potatoes.

In-Store Experimental Design

The store experiment was conducted over a consecutive seven week period from October 2 through November 18, 1989. In cooperation with a major New England retail chain, twelve grocery stores located throughout central and southern Maine were divided into four groups labeled I to IV. Each group contained a large, medium and small sized store assessed in terms of square feet and customer counts.

Actual sales information on potato sales was unavailable. As an alternative, potato shipment data had to serve as a proxy for sales of round white and residue-tested potatoes. The produce director at the chain's headquarters provided three sets of data for the analysis: 1) shipments of total round white potatoes received by each store, 2) shipments of total round white potatoes in five pound bags, and; 3) shipments of five pound residue-tested round whites. Shipment data were adjusted for changes in store inventories. During the first three week pre-test period, shipments of Maine round white potatoes were monitored to obtain a basic profile of each store and subsequently, each study group.

In the four week test period, three of the four groups sold the round white residue-tested potatoes in five pound poly bags. These bags were labeled with the brand logo that identified the potatoes as tested for pesticide residues and were displayed beneath a price card containing the same logo. As the basis for comparison, the test stores also sold the standard Maine round white potatoes in five pound bags. Produce managers were asked to sell the two types of potatoes in close proximity and in displays of equal size.

The residue-tested potatoes were virtually identical to the standard round whites in terms of the physical appearance of the potatoes. Weekly store visits were conducted to ensure that the

quality of the standard and residue-tested potatoes were comparable. However, residue-tested potatoes were sold in bags carrying the brand logo of the company sponsoring the research. This bag design was distinctly different from the standard five pound bag sold at the participating stores. Although the package difference may have had some effects on purchasing behaviors, it is also likely to have alleviated the incidence of unintentional purchases of residue-tested potatoes. Had the two types of potatoes been sold in identical bags, it is likely that many consumers would have made their potato purchase without noticing the residue-testing logo.

In each of the three store groups carrying both types of potatoes, the residue-tested product received one of three price manipulations during the test period, constituting the treatment phase of the study. The specific treatment scenarios of the four groups are described below:

I. Group I was designated as the non-treatment condition in which none of the stores sold the residue-tested potatoes. Weekly round white potato shipments were monitored in these stores throughout the pre-test and test weeks to provide a benchmark for analyzing sales of round whites. By comparing average round white shipments from the other three treatment groups to the data recorded for Group I, the results were expected to show the impact of selling residue-tested potatoes on round white shipments (sales).

II. Group II sold both the standard Maine round white packs (five, ten, twenty, and sometimes fifty pound bags), as well as the five pound poly residue-tested packages. The tested potatoes were sold at the same price as the stores' five pound Maine round white package. Analysis of these shipment data was used to determine if consumers exhibited a general preference for the residue-tested potatoes, net of price.

III. Group III maintained the same format as Group II. However, the price of the residue-tested potatoes was ten cents higher per bag than the price of the control potatoes throughout the four week experimental period. Data obtained from this treatment were expected to reveal the effects of a slight price change on the quantity of

the residue-tested potatoes sold, relative to the stores' standard five pound round white packs.

IV. Group IV stores followed the same procedures as the other test groups except that the price of the residue-tested was set at thirty cents per bag above the price of the standard five pound round white potatoes. This differential was set to test a price level which allowed a substantial premium over the cost of producing, testing, packing, shipping and retailing.

Consumer Surveys

To accomplish objective four, questionnaires were enclosed in 1/3 of the bags. These survey forms consisted of five questions regarding the consumer's perspective on different aspects of food safety and level of satisfaction with the product, based on the respondent's willingness to continue buying the same type of potatoes. Responses were expected to indicate the potential for capturing an enduring share of the potato tablestock market.

Store Observations

Both the control and test stores were visited every week during the pre-test and test weeks. Produce managers were asked to keep the size of the residue-tested display equal to the size of the regular five pound round white display. For example, if the manager usually maintained four rows of five pound round whites, he or she displayed two rows of residue-tested potatoes and two rows of the regular five pound bags during the study period. The two types of potatoes were also sold on the same shelf line, typically adjacent to each other.

The only merchandising done for the residue-tested product was a special price card with the brand logo that read, "Tested for Pesticide Residue, Your Assurance of Safety." The card contained the appropriate price, depending upon the store's group assignment, and was placed directly above the product display. In addition, the produce managers were given an information sheet entitled "Facts About the Pesticide Residue-Testing Experiment in Your Store," which explained the meaning and purpose of the testing,

and briefly described the residue-testing procedure.

During each test week, the featured potato special was recorded to account for possible effects on the study. These are listed in Table 1.

Table 1

Featured Potato Specials During Test Weeks
October 23 through November 19, 1989

| | |
|------------------------------|---|
| Test Week 1 Oct. 23-28 | 4 lb poly pack Red Potatoes, \$1.49 |
| Test Week 2 Oct 30-Nov. 4 | 20 lb paper Maine Round White Potatoes, \$1.99 |
| Test Week 3 Nov. 6-11 | 5 lb Yukon Golds, \$1.49 |
| Test Week 4 Nov. 13-18 | 10 lb poly pack Maine Russets, \$1.77 |

Statistical Analysis

The data were analyzed using the T-Test for measuring differences in shipments between pre-test and test weeks for each group, and the one-way analysis of variance to test for differences in the means between groups. The three sets of data used in this analysis were: 1) Total weekly shipments of all round white potatoes, including residue-tested potatoes, 2) Shipments of five pound round whites, including residue-tested potatoes and; 3) Shipments of residue-tested round whites only. These totals were divided by the customer counts of each store so that the data reflect shipments in units of pounds per 1000 customers.

The first section of the analysis examines the significance of differences in round white potato shipment data during the pre-test and test weeks for each group of stores for both total

round whites and five pound packs of round whites. The results indicate the possible effects on round white shipments that might be associated with the residue-tested product.

In addition to analyzing the differences in average shipments of residue-tested product among the three groups, the share of total round whites accounted for by the residue-tested shipments and five pound shipments are also compared. Taken together, this information provides an estimate of the impact of residue-testing on shipments of round whites, and the effects of price variations on shipments of residue-tested potatoes.

Results

*Shipment Changes between
Pre-Test and Test Weeks*

Shipment data of total round whites and five pound bags of round whites were analyzed for each group to identify any unusual changes that may have occurred from pre-test to test weeks of the study period. Specifically, it was expected that the three test groups would follow the same pattern as the control group regarding changes in round white shipments. The results of the T-Tests are reported in Table 2.

These results show that each group substantially increased their total shipments of round whites during the test weeks. This is most likely due to the featured special of the 20 pound bag of round whites for \$1.99 during test week 2.

However, shipments of five pound bags of round whites show a statistically significant increase only in two groups: Group II, which sold residue-tested potatoes at the same price as the regular round whites, and Group III, which sold residue-tested potatoes at ten cents above regular. Although both Group I, the control, and Group IV show increases in their shipments of the five pound pack during the test weeks, their average five pound shipments were not statistically different between pre-test and test weeks.

Table 2**Tests For Differences in the Averages of Round White Shipments,
in Pounds Per Thousand Customers**

| | Group I (Control) | Group II (Regular) | Group III (10 cents) | Group IV (30 cents) |
|---|------------------------------|-------------------------------|---------------------------------|--------------------------------|
| Average Total Round Whites | | | | |
| Pre-test | 438.41 | 282.36 | 294.59 | 313.77 |
| Test Weeks | 669.06 | 483.93 | 555.27 | 530.50 |
| t-statistic: | -3.03 | -10.97 | -9.56 | -8.10 |
| probability: | 0.09* | 0.01* | 0.01* | 0.02* |
| Average 5 lb Bags Round Whites | | | | |
| Pre-Test | 136.83 | 92.32 | 76.21 | 102.35 |
| Test Weeks | 154.35 | 122.91 | 121.38 | 160.72 |
| t-statistic: | -0.45 | -4.71 | -6.36 | -1.54 |
| probability: | 0.70(NS) | 0.04* | 0.02* | 0.26(NS) |

NS denotes no significant difference

* denotes significant difference at or below the 10% level

Table 3

Results of the Analysis of Variance on Averages of Total Round White Deliveries,
In Pounds Per Thousand Customers

| <u>Group</u> | <u>Pre-Test Weeks</u> Oct. 2-Oct 21 | <u>Test Weeks</u> Oct 23-Nov. 18 |
|---|--|-------------------------------------|
| I. Control Stores | 438.41 ^A | 669.06 ^A |
| II. Residue-tested at Same Price as Regular Round Whites | 282.36 ^A | 483.93 ^A |
| III. Residue-tested at 10 cents above regular | 294.59 ^A | 555.27 ^A |
| IV. Residue-tested at 30 cents above regular | 313.77 ^A | 530.49 ^A |
| | F= 1.41 p=0.31(NS) | F=0.64 p=0.61(NS) |

NS denotes no significant difference

For comparisons in each column, averages with the same letters are not significantly different

Table 4

Results of the Analysis of Variance on Averages of Total Five Pound Round White Deliveries,
In Pounds Per Thousand Customers

| Group | Pre-Test Weeks Oct. 2-Oct. 21 | Test Weeks Oct. 23-Nov. 18 |
|---|----------------------------------|-------------------------------|
| I. Control Store | 136.83 ^A | 154.35 ^A |
| II. Residue-tested at same price as regular round whites | 92.32 ^B | 122.91 ^A |
| III. Residue-tested at 10 cents above regular round whites | 76.21 ^B | 121.38 ^A |
| IV. Residue-tested at 30 cents above regular round whites | 102.35 ^{AB} | 160.72 ^A |
| | F=7.45 p=0.01* | F=0.52 p=0.68(NS) |

NS denotes no significant difference

* denotes statistical differences at or below the 10% level

For comparisons in each column, averages with the same letters are not significantly different

Shipment Differences Between Groups

The second stage of the analysis focuses on differences in average shipments between groups for each time period. To detect any changes that might have occurred between the two periods, two separate tests were conducted with each set of shipment data; one for the pre-test period and one for the test period.

The first analysis tests for differences in total round white shipments between groups. The results based on the pre-test weeks are shown in the first column of Table 3, and the test week findings are shown in column 2.

The results indicate that the averages recorded for the pre-test weeks are not statistically different. Similarly, the averages for the test weeks shown in column 2 are not significantly different. Each group increased their total shipments of round whites, as reported in Table 2, but there were no differences between groups regarding the magnitude of these increases.

The second analysis, shown in Table 4, tested for differences in the averages of five pound bags of round white shipments between groups for each time period. These results show that during the pre-test period, shipments of five pound bags of round whites were statistically different between groups. Specifically, Groups II and III received significantly fewer pounds of five pound round whites in comparison to the Control Group. Shipments received by Group IV, however, were not significantly higher than Groups II and III, nor significantly lower than the Control Group.

The information in column 2 shows that during the test weeks, the preliminary situation was substantially altered. All groups increased their overall shipments of five pound round whites. But Groups II and III increased their shipments to such an extent that the pre-test differences between groups were diminished. In Groups II and III, sales of five pound round whites increased significantly during the four weeks when residue-tested potatoes were sold in their stores.

Table 5

Results of Analysis of Variance on Averages of Total Residue-Tested Potato Deliveries, In Pounds Per Thousand Customers

| Group | Test Weeks Oct. 23-Nov. 18 |
|--|-------------------------------|
| II. Residue-Tested at Same Price As Regular Round Whites | 30.16 ^A |
| III. Residue-Tested at 10 Cents Above Regular | 31.77 ^A |
| IV. Residue-Tested at 30 Cents Above Regular | 30.86 ^A |
| | F=0.02 p=0.97(NS) |

NS denotes no significant difference

Quantities with the same letters are not significantly different

Shipments of Residue-Tested Potatoes

The effects of the price variation on shipments of residue-tested potatoes were examined by comparing the shipments of residue-tested potatoes among the three store groups that sold the test potatoes. Table 5 reports the average shipments of residue-tested potatoes and the statistical results. There were no significant differences in the average shipment of residue-tested potatoes among the three store groups, indicating that each group received virtually the same amount of residue-tested potatoes, regardless of the price at which stores sold the product.

Share Analysis

As a second indicator of the possible effects of the price treatments, the residue-tested shipment data were analyzed as a share of total round white shipments per thousand customers and as a share of total five pound round white shipments per thousand customers. These are shown in Table 6.

**Consumer Response
to Residue-Tested Potatoes**

Table 6
Comparison of Average Residue-Tested Shipments per 1000 Customers as a Percentage of Average Round White Shipments

| Group | Residue-Tested Share of Total Round White Shipments | Residue-Tested Share of 5-lb Round White Shipments |
|--|---|--|
| II. Residue-Tested at Regular Price | 6.2% | 24.5% |
| III. Residue-Tested at 10 cents higher | 5.7% | 26.0% |
| IV. Residue-Tested at 30 cents higher | 5.8% | 19.0% |

These sets of figures give another perspective on the performance of the residue-tested brand. The first column shows that as a percent of total round white shipments, residue-tested potatoes accounted for an average of 6 percent overall. The largest difference is found between Groups II and III, which differ by only one half of one percent. Percentages are more varied in the second column, with residue-tested potatoes accounting for 19 to 26 percent of five pound shipments.

Most important, these figures show that consumers favored the standard five pound bag by at least a 3 to 1 margin, even when the standard and residue-tested potatoes were sold at the same price. Although the previous results indicate that price differences did not greatly influence sales of residue-tested potatoes, Maine consumers did not exhibit an overall preference for the residue-tested product.

To accomplish the fourth objective of the study, a survey was designed to evaluate the importance of the testing for pesticide residues and their general attitudes about food safety among consumers who bought the residue-tested product. The survey form consisted of four questions printed on a postage paid card. The first was an open ended question asking respondents why they bought the potatoes. The second question asked about the importance of food safety concerns with "not at all," "somewhat," and "very" as optional responses. Another open ended question was used to find out what other residue-tested products they would like to buy. Respondents were then asked if they would continue buying residue-tested potatoes, if available, with a "Yes/No" response choice. Finally, a space was provided for optional write-in comments. Analysis of these responses was expected to show the level of dedication that consumers might have for residue-tested potatoes.

This analysis is based on responses from Maine consumers. Altogether, 92 residents who purchased the residue-tested potatoes returned useable surveys, yielding a response rate of approximately 3.5 percent. The following tables report their responses to each of the survey questions.

The first question asked consumers to identify what factors influenced their initial purchasing decision. The four reasons listed by respondents most frequently are shown in Table 7.

product (Kezis, Smith, Peavey and Lloyd, 1988; Smith and Peavey, 1989).

Table 7

**WHY DID YOU BUY
RESIDUE-TESTED POTATOES?
The Four Most Common Reasons**

| | <u>Percent of Respondents</u> |
|------------------------------|-----------------------------------|
| Product Appearance | 27.7% |
| Concerned About Food Safety | 21.7% |
| Because They Were From Maine | 18.1% |
| Price | 12.0% |

Number of Respondents
Who Listed One or
More Reasons: 83

Just as other consumer studies on potato varieties have found, product appearance was the most common reason motivating the initial purchasing decision (Kezis, Smith, Peavey and Lloyd, 1988). Since the appearance of both the standard and residue-tested potatoes was monitored weekly to ensure the similarity of the two types of potatoes, "appearance" as a purchasing motive does not necessarily imply that consumers were drawing comparisons between the standard and residue-tested round whites.

Concern about food safety was also high, with close to 22 percent indicating that it influenced their choice. Others reported buying the residue-tested potatoes because they were Maine potatoes. However, the standard round whites were also identified as Maine potatoes. Among 12 percent, price was important, although other studies have shown those concerned with price are not necessarily looking for the least expensive

Consumers had the option of listing more than one reason for buying the potatoes. The most common combination was appearance and food safety. Although food safety concerns may be highly influential, many respondents did not seem willing to compromise on product appearance. Similarly, price was typically listed with appearance, confirming that price alone is rarely the single most important factor.

Responses to the question asking consumers to rate the importance of food safety are reported in Table 8. An overwhelming majority indicated that food safety testing was very important to them. This high percentage would be expected, since their feelings on the importance of this issue is likely to have influenced their willingness to complete the questionnaire.

Table 8

**HOW IMPORTANT IS FOOD SAFETY
TESTING TO YOU?**

| | <u>Percent of Respondents</u> |
|------------------------|-----------------------------------|
| Not At All | 1.1% |
| Somewhat | 19.5% |
| Very | <u>79.3%</u> |
| | 100.0% |
| Number of Respondents: | 87 |

Respondents were also asked to list other specific items that they would like to buy as tested for pesticide residue. The most frequent listings are presented in Table 9. Over 40 percent said that they would like to buy "all produce" or "all food" as residue-tested. Another 31 percent

listed the general category of "vegetables" as products they would like to buy, while "Fruits" was also a recurring answer. Not surprisingly, the response "apples" was listed more often than any other specific product, indicating some lingering doubts caused by the alar publicity.

Table 9

**WHAT OTHER
RESIDUE-TESTED PRODUCTS
WOULD YOU LIKE TO BUY?**

The Four Most Common Listings

| | <u>Percent of Respondents</u> |
|------------------|-----------------------------------|
| All Produce/Food | 40.6% |
| All Vegetables | 30.4% |
| All Fruits | 24.6% |
| Apples | 8.7% |

Number of Respondents
Who Listed One or
More Products: 69

Note: Other specific products listed by respondents included carrots, lettuce and broccoli. These tended to be isolated responses.

As a measure of consumer satisfaction with the potatoes, respondents were asked if they would buy the potatoes again. The results are presented in Table 10.

Table 10

**WILL YOU CONTINUE BUYING
RESIDUE-TESTED POTATOES
IF THEY ARE AVAILABLE?**

| | <u>Percent of Respondents</u> |
|-----|-----------------------------------|
| Yes | 90.5% |
| No | 9.5% |

Total Number of
Respondents: 84

The percentage of positive responses to this question is consistent with the response to other Maine potato varieties tested for consumer acceptance (Kezis, Smith, Peavey and Lloyd; 1988). Based on the willingness to purchase the product again reported by most respondents, residue-tested potatoes appear to be able to maintain a consistent share of the market.

To complete the survey, consumers were given the opportunity to write in any comments. Their remarks tended to be quite varied, but the four categories listed in Table 11 capture the major topics.

Table 11

COMMENTS
The Four Most Common Subject Areas

| | <u>Maine Residents</u> |
|---|----------------------------|
| Expressed a Concern About Food Safety | 33.9% |
| Commented On The Good Quality of the Potatoes | 16.1% |
| Complained About the Potatoes | 16.1% |
| Didn't Understand "Residue-Testing" / Wanted to Know More About Testing | 10.7% |

| | |
|--|----|
| Number of Respondents Who gave one or more comments: | 56 |
|--|----|

Among the 56 Maine respondents who chose to comment, 34 percent were compelled to emphasize their feelings about food safety. The high percentage who stressed the strength of their feelings about food safety as a write-in further demonstrates the sincerity of their attitudes.

Interestingly, the proportion of respondents who complained about the potatoes was offset by an equal proportion who praised the potatoes. There is an obvious disparity in viewpoints with both sides expressing strong opinions on the quality of the residue-tested product.

Close to 11 percent were confused about the testing characteristic with many indicating they were unaware they had purchased residue-tested

potatoes. In fact, the actual percentage of consumers who unintentionally purchased residue-tested potatoes is probably higher, since the only merchandising tactic was the brand price card that simply read, "Tested for Pesticide Residue, Your Assurance of Safety." These responses highlight the need for better explanations about the testing procedure, which can be accomplished through more sophisticated merchandising activities.

Summary and Conclusions

The purpose of this study was to analyze consumer response to residue-tested potatoes and evaluate the additional cost consumers are willing to pay for the pesticide residue-testing feature.

Weakness of the Study

Conclusions addressing the first three objectives are outlined in the next section. However, the results of the tests point to several conclusions that need to be qualified. First, the statistical findings do not define a causal relationship between the selling of residue-tested potatoes and round white sales. At best, the analysis revealed some associations that suggest a relationship.

More important, shipment data have been used as indicators of potato sales and proxy information of this type carries several serious considerations. First, shipments are subject to variation simply because of differences between produce managers and their managerial styles. The study is also based on the assumption that all of the potatoes that were shipped were inevitably sold. Consequently, there is no accounting for shrink.

The results of the consumer survey cannot be interpreted as representing the viewpoints of all Maine consumers. There is an obvious likelihood of response bias, since those consumers who had intense feelings about food safety were probably most inclined to complete the survey. Nevertheless, the overall response reveals a consumer group that seems to constitute an interested clientele and concerted efforts should be extended to identifying the characteristics of this group to develop target market strategies.

Total Round White Shipments

In the first section of the analysis, residue-tested potatoes did not seem to be associated with any significant trend regarding the shipments of total round whites. The analysis showed that all stores exhibited an increase in total shipments of round whites, but the magnitudes were similar between the four groups.

An analysis of five pound shipments uncovered some notable distinctions. Specifically, the group of stores selling the residue brand at the same price as the regular round whites, and the group selling residue-tested potatoes at ten cents above the standard round whites experienced a significant increase in their shipments of five pound round whites, more so than what would be expected by chance. This implies that within these stores, sales of residue-tested potatoes corresponded to an increase in total sales of five pound round whites. It is possible that for the two test groups selling the residue-tested potatoes at either the same price or 10 cents above the standard price, consumers were induced to buy the five pound tested potatoes over other sizes of round whites. However, without data on five pound and total round white shipments gathered during several post-test weeks in which residue-tested potatoes were not displayed, there is insufficient evidence to confirm this possibility.

The Effects of Price Manipulations

In section two, the average shipments of residue-tested potatoes were compared to test for differences that might be attributed to consumer response to the price differential between residue-tested and the regular five pound round white pack. No significant differences were found between groups, indicating that price variation had little impact on the sales of residue-tested potatoes.

Based on the three price levels tested in this study, it seems that even at the highest differential of thirty cents per bag, price is not a barrier to those consumers who want residue-tested potatoes. However, most consumers were not induced to switch to the residue-tested brand, even when they were sold at the same price as the standard five

pound round white bag. The residue-tested potatoes' shares of shipments averaged approximately 23 percent of the five pound shipments and only 6 percent of the total round white shipments. Taken together, the results suggest that residue-tested potatoes appeal to a small group of consumers who are willing to pay for the cost of the residue-testing service.

Analysis of the survey responses adds another dimension to the study. Respondents and nonrespondents constitute two distinct groups, especially in a study such as this. Consequently, the responses only provide a composite of the typical consumer who completed the survey: he or she bought the potatoes because of personal concerns about food safety coupled with the attractive appearance of the product. This person feels very strongly about the importance of food safety and would also like to buy all produce as residue-tested. These respondents represent a potentially loyal clientele, since most expressed a willingness to continue buying the residue-tested potatoes, if available.

Recommendations

Based on the statistical analysis, survey responses, observations made during store visits and discussions with produce managers, residue-tested potatoes have the potential for successfully acquiring a small, but seemingly dependable share in the tablestock market. The product appeals to a small group of consumers whose doubts about the general safety of food figure prominently in their shopping decisions. This target group seems to consist of individuals whose purchasing decisions are influenced by strong feelings about food safety, rather than by impetuous curiosity. But although their concerns are genuine, it is difficult to predict the life span of their interest.

Another important finding is that respondents tended to report "product appearance" as a factor in their purchasing decision. The quality of residue-tested potatoes, as implied by their appearance, will have to remain high to attract even those who are very concerned about food safety.

Since the price levels tested in this study had little impact on shipments of residue-tested potatoes, the promotion of this product is likely to be far more critical than low or competitive pricing. Suppliers, in cooperation with their retailers, need to run an aggressive promotional and merchandising campaign. These potatoes should be marketed as an elite product with consistently high quality, and sold at sufficiently higher prices than competing untested products to compensate for the cost of the promotional campaign and residue-testing. Consistent quality, consistent availability, and well-targeted promotions along with the residue-tested guarantee are likely to sufficiently differentiate this product to allow premium pricing.

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