CARIBBEAN FOOD CROPS SOCIETY

40

Fortieth

Annual Meeting 2004

Proceedings of the Caribbean Food Crops Society. 40:210-218. 2004

MARKET OPPORTUNITIES FOR PRODUCERS AND MARKETERS OF AGRICULTURAL PRODUCTS: A MARKET ASSESSMENT OF PRE-PACKAGED VEGETABLES IN TRINIDAD

Lisa Perez, Ardon Iton, and Wendy Lawrence. Marketing Unit, Caribbean Agricultural Research and Development Institute (CARDI), The University of the West Indies, St. Augustine Campus, Trinidad and Tobago

ABSTRACT: Driven by lifestyle shifts and the need for convenience, the demand and market opportunities for pre-packaged vegetables have substantially changed in the past decade. A survey of customers at six outlets of the major supermarket chain in Trinidad examined the purchasing pattern and demand for four pre-packaged vegetables. The market trends are consistent with those in metropolitan countries, and the potential exists for increasing value and opportunities for all participants along the agri-food chain.

INTRODUCTION

A major shift in consumer demand has severely impacted the global agri-food system to the extent that it has transformed the way food is produced, prepared and sold. In particular, the increased popularity of convenience foods has created new challenges and opportunities for the fresh produce market across the globe. Sustainable growth and success within the fresh produce industry is now dependent on ongoing reinvestment by producers, continuous product innovation and the formation of long term partnerships with customers. The fresh-cut produce industry in the Caribbean is in its early stage of development, comparable to the U.S industry twenty years ago. Mott et al., (1998) reported that sales of cut vegetables to restaurants and food service establishments accounted for US$6 million and sales of packaged salads to supermarkets and other retail establishments amounted to US$1billion. There is now a growing demand for prepackaged items in Trinidad and Tobago, and with that, opportunities for the agribusiness sector (producers and marketers).

"Convenience foods" encompass a wide range of items that are broadly defined as foods that require minimal preparation. A prepackaged vegetable, often referred to as a "salad mix" belongs to the "Fresh-cut produce" group and represents one category of the convenience food segment. "Fresh-cut produce" is defined as any fresh fruit or vegetable or any combination thereof that has been physically altered from its original form, but remains in a fresh state. All such commodities undergo a process of washing, trimming, peeling, and cutting into suitable sizes for bagging or convenient packaging for purchase by the consumer.

In the United States, the pre-cut produce segment of the market consists of packaged salads, pre-cut vegetables and pre-cut fruits. In recent times there has been an increase in retail sales of fresh cut produce, attributed to a number of factors, including the following:

- The growth in public knowledge and awareness of the link between diet and health, which has increased the demand for fruits and vegetables.
- Lifestyle shifts with the entrance of more women in the work force have increased the demand for foods of high and predictable quality that offer convenience and variety.

- Improvements in technology—advances in post-harvest technology and handling have improved the quality, presentation and shelf life of fresh-cut vegetables at retail.
- Improvements to and expansion in the range of products offered on supermarket shelves.
- Demographics—where greater ethnic diversity implies a greater variety of foods.
- Rising incomes—purchase is driven by taste and preference.
- Rise in two-income families since more women are in the workforce.

The aforementioned changes are not only applicable to metropolitan countries but to Latin America and the Caribbean.

In the absence of market information to support this new food industry in Trinidad, the Caribbean Agricultural Research Development Institute (CARDI) through its Marketing Unit embarked on a study to undertake a market assessment for convenience foods (pre-packaged vegetables) in Trinidad.

METHODOLOGY

A questionnaire was developed, pre-tested and administered at six Hi-Lo Supermarket outlets to collect data on trends in the market for pre-packaged (ready to cook) vegetables and to estimate the market demand for this commodity in Trinidad. Hi-Lo supermarket is the leading supermarket chain in Trinidad and Tobago. Interviews were also conducted with key industry officials.

A total of 1205 questionnaires were administered to shoppers randomly at six Hi-Lo supermarkets in the following areas: Westmoorings, St Augustine, El Dorado, Arima, Chaguanas, and Gulf City. These Hi-Lo supermarkets are located in densely populated areas in North, South, East, and Central.

The focus pre-packaged (ready to cook) vegetable packs were identified as "callaloo," "chow mein," "vegi," and "patchoi." A full description of these convenience items and their contents are presented in Figures 1 through 4. To ensure that the respondents were all using the same frame of reference for the pre-packaged vegetables that were the focus of this study, they were shown pictures of the pre-packaged vegetables by the enumerators.

The primary data collected were analysed by Statistical Package for Social Sciences (SPSS) version 7.5.

RESULTS

Profile of purchasers of prepackaged vegetables

Of the 1205 questionnaires administered, 67% of the respondents indicated that they purchase prepackaged vegetables. Of these, 78% were female and 22% were male. Ninety-three (93%) of purchasers of prepackaged vegetables provided responses to the question on average monthly household income. From Table 1, which shows the average monthly household income, it can be seen that the majority of respondents-28% who purchase pre-packaged vegetables belong to the greater than TT$12,999 (US$2,063) category. Conversely, smaller numbers of respondents in the lower income brackets purchased prepackaged vegetables.

The highest percentages of customers that purchase pre-packaged vegetables were in the 35-44 age categories, with 63% of all purchasers under 45 years of age. Two person households were the main household types that purchased pre-packaged vegetables accounting for 25% of the sample, with three and four member households accounting for 23% and 21%, respectively.

Preference for pre-packaged vegetables by respondents

Of the four pre-packaged vegetable products evaluated, the "callaloo" pack is the most frequently purchased, followed by the "vegi" pack, "chow mein" pack and the patchoi pack (see Table 2). Amongst purchasers, the "callaloo" and "vegi" pack were most popular choice by respondents, 77% and 71% respectively. Shoppers were very aware of the range of pre-packaged vegetables offered at Hi-Lo Supermarkets, with over 50% of respondents indicating knowledge of each of the four prepackaged items.

Frequency of purchase of pre-packaged vegetables

Table 3 shows the frequency of purchase of the pre-packaged vegetables in the following categories, weekly, fortnightly and monthly. The "callaloo" pack was purchased most frequently of the four prepackaged vegetables with 362 packs purchased on a weekly basis. These results clearly indicate that the purchase of pre-packaged vegetables is done on a weekly basis, and represents 68.7% of total purchase. This is as against the 20.2% of the respondents who indicated that pre-packaged vegetables were purchased on a fortnightly basis, and 11.2% who did so on a monthly basis. The popularity of the "callaoo"' pack can be attributed to its use as part of a traditional Sunday meal in Trinidad and Tobago.

Factors and relationships affecting the purchase of pre-packaged vegetables

The purchase of pre-packaged vegetables is driven by convenience as stated by 81% of respondents followed by quality (7%) and food safety (3%).

Sixty percent of married couples purchased pre-packaged vegetables. Of this amount 72% of the respondents belonged to households in which both partners are employed. Cross tabulation analysis on the relationship between: (a) income levels and purchase of pre-packaged vegetables and (b) marital status on the purchase of pre-packaged vegetables showed no correlation between the variables in either of these relationships. In addition, there was no major difference in the purchasing patterns of married couples where both partners worked versus couples where one partner worked (Table 4).

Estimation of Market Size in 2004 for pre-packaged vegetables with specific emphasis on the "callaloo" pack and the "vegi" pack.

The market size estimation gives the value of the current market size for prepackaged vegetables in Trinidad. The market size estimate applied the demand-side formula:

$$\mathbf{Md = nqp}$$

Where:

Md = Market size (demand side definition)

n = penetration (number of customers)

p = average price paid

q = Total volume purchased per customer in a period (Savvides, 2000)

The annual conversion factor was used to convert market size values to a yearly value. This estimate is used in situations where sensitive company information is not readily available as was the case in this study. Tables 5 and 6 show the elements used in the calculation of this variable.

Based on these surveys, the market size for the "vegi" pack was calculated to be TT$360,469.79 or US$57,217.45 per annum, and the market size for the "callaloo" pack calculated to be TT$211,546.20 or US$33,578.76 per annum.

DISCUSSIONS AND CONCLUSIONS

The preliminary market research and market information gathered on pre-packaged vegetables in this study is of value to all participants along the agri-food chain. In particular, the profiling of the consumers and the estimation of market demand is important in identifying opportunities for target marketing. Based on the demand for pre-packaged products in all segments of the market—supermarkets, fast food outlets, and the hospitality industry—production planning and forecasting will be critical to the development and sustainability of the industry.

An illustration of the potential of this industry is seen when a rough estimate of the profit margin on the "callaloo" pack is examined. Based on the wholesale prices of the ingredients ("callaloo" bush, ochroes, pumpkin and pepper; and the packaging material), the mark up is in the vicinity of 30-40%. As such, the production of a wide range of convenience foods for the Trinidad food sector can provide guaranteed markets for farmers for their produce and direct profits for marketers and other intermediaries.

The survey showed that the "callaloo" pack was the most popular prepackaged vegetable pack, related to its use as part of the traditional Sunday meal, where the cleaning and preparation of the vegetables are tedious and time consuming. The consumption of this convenience item has benefited from lifestyle shift, where increasingly women form a major part of the work force and there is a need to reduce meal preparation time. Notwithstanding, the "vegi" pack has the highest market value of TT$360,469.79 followed by the "callaloo" pack TT$211,546.20 or US$33,578.76, "chow mein" pack—TT$209,419.62 or US$33,241.21 and "patchoi" pack—TT$105,165.93 or US$16,693. The market size (value) for the four pre-packaged vegetables in Trinidad was estimated to be TT$886,601.54 or US$140,730.40.

The study showed that the profile of purchasers and factors influencing purchase of pre-packaged vegetables in Trinidad are similar to those of consumers in the metropolitan centres of the world. While purchasers at the six locations of Hi-Lo Supermarkets were generally satisfied with the quality and range of the four products under examination, there are opportunities for expansion, given the changing lifestyle of the modern-day consumers.

The success of this industry now depends on the effective use of market information and the response of participants along the commodity chain to the need for increased production and improvements in the quality of fresh produce. As such, continuous product innovation and the formation of long term partnerships with customers would ensure a sustainable industry.

REFERENCES

Mott W., F. Feferman, D. Webser, and V. Malazita. 1998. Fresh cut vegetable processing: Market opportunities in Panama, Mexico, Honduras, Jamaica, and Costa Rica. Study submitted to the Emerging Markets Office of the Foreign Agriculture, USDA, p. 68.

Savvides, S. 2000. Market Analysis and Competitiveness in Project Appraisal. Development Discussion Paper No. 755. Harvard Institute for International Development.

ACKNOWLEDGEMENTS

The authors acknowledge the financial support of the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) and the Caribbean Agricultural Research and Development Institute (CARDI) for facilitating the presentation of this paper at this Conference.

Table 1. Average monthly household income of sample survey that purchase pre-packaged vegetables

Income Levels (TT)	Percentage of Income
<$1,999	3
$2,000-$4,999	18
$5,000-$7,999	21
$8,000-$10,999	15
$11,000-$12,999	8
>$12,999	28

(1$US=6.3$TT)

Table 2. Knowledge of pre-packaged vegetable among shoppers that purchase

Pre-packaged vegetable	Awareness	Purchase
Callaloo pack	77	77
Vegi pack	72	71
Chow mein pack	67	65
Patchoi pack	51	50

Table 3. The frequency of purchase of pre-packaged vegetables among respondents

Pre-packaged vegetable packs	Number of packs purchased weekly	Number of packs purchased fortnightly	Number of packs purchased monthly
Callaloo pack	362	106	63
Vegi pack	336	96	56
Chow mein pack	285	83	49
Patchoi pack	215	67	27
Total purchases	1198	352	195
Percentage of Total (1745)	68.65%	20.17%	11.18%

Table 4. Percentage of respondents that purchase prepackages and civil status (married with both partners working versus married one partner working)

Married both partners working (N=352)		Married one partner working (N=135)	
Pre-pack	% Purchase	Pre-pack	% Purchase
Callaloo	75	Callaloo	80
Vegi-pack	68	Vegi-pack	67
Chow mein	63	Chow mein	67
Patchoi	46	Patchoi	50

Table 5. The market size estimation for the 'vegi'-pack in Hi-Lo Supermarkets in Trinidad

Frequency of Consumption	Sample Population			
	Number of respondents (n)	Average no. of packs purchased (q)	Average Price (p) (TT$)	Annual Conversion factor
Weekly	336	1.57	$11.16	52
Forthnightly	96	1.45	$11.16	26
Monthly	56	1.86	$11.16	12

Table 6. Market Size Estimation for the 'Callaloo' Pack in Hi-Lo Supermarkets in Trinidad

Frequency of Consumption	Sample Population			
	Number of respondents (n)	Average no. of packs purchased (q)	Average Price (p)	Annual conversion factor
Weekly	362	1.34	$6.99	52
Forthnightly	106	1.42	$6.99	26
Monthly	63	1.49	$6.99	12

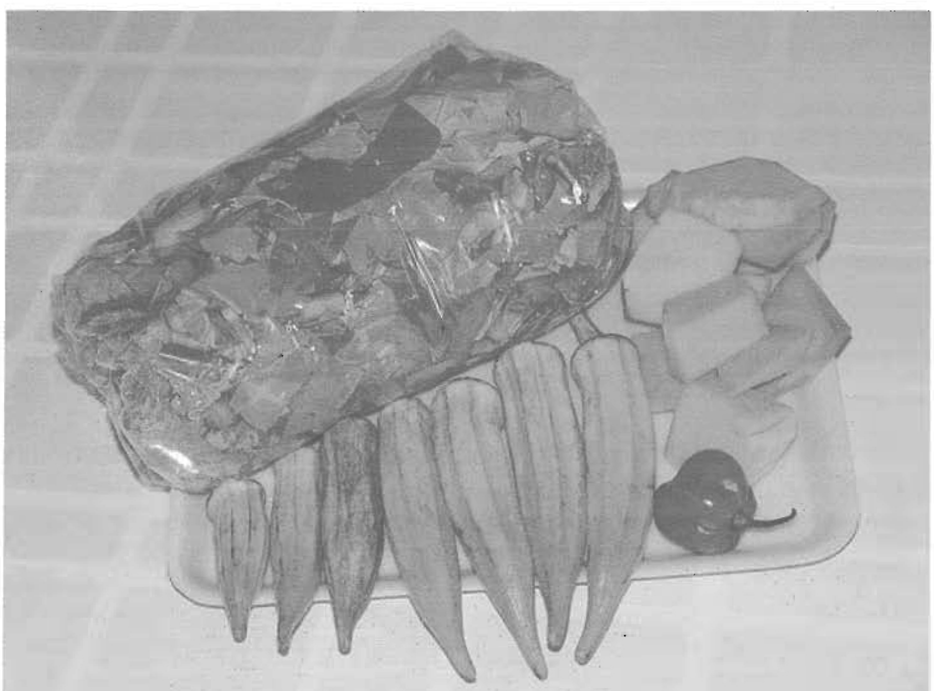

Figure 2. Chow mein pack

Figure 3. Pakchoi pack

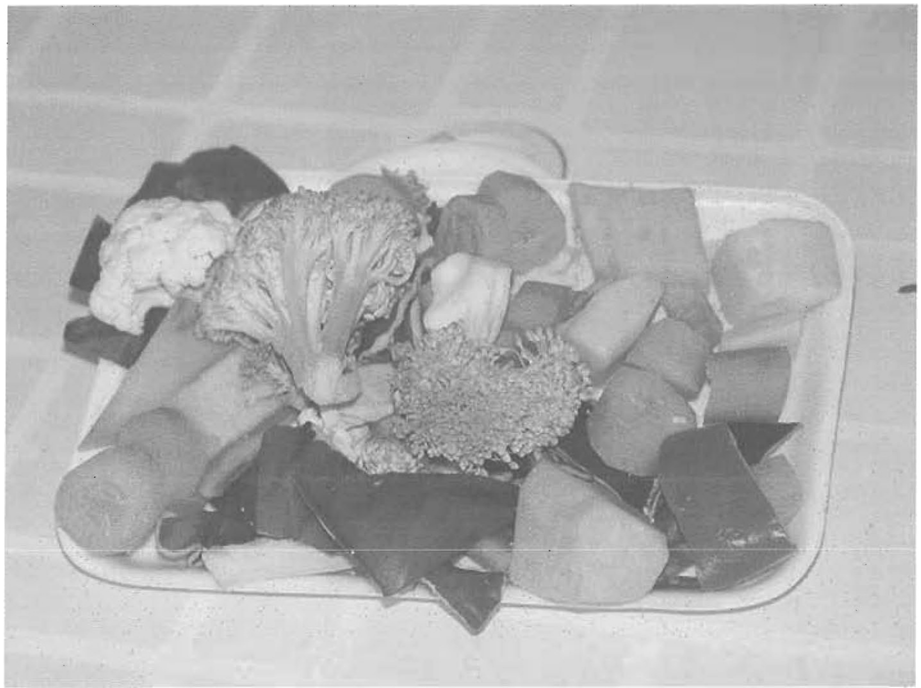

Figure 4. Vegetable pack