

PN-MAR-283  
ISN= 36872

62

CONSUMER ACCEPTANCE OF FORTIFIED  
WEANING FOODS:  
THE CASE OF CEREX IN GUYANA

Jane C. Hopkins  
John P. Nichols  
Leslie Chin

June 1983

The Texas Agricultural Market Research and  
Development Center of Texas A&M University

in cooperation with

The Nutrition and Agribusiness Group  
Office of International Cooperation and Development  
USDA

and

The Guyana Pharmaceutical Corporation

for

The United States Agency for International Development, Guyana

Funds for Texas A&M's work on this project were provided by the,  
Office of Nutrition, Bureau for Science and Technology,  
Agency for International Development, Washington, D.C.

## PREFACE

In 1976 the Market Research and Development Center at Texas A&M University undertook a cooperative program with the Nutrition and Agribusiness Group, Office of International Cooperation and Development of the United States Department of Agriculture. The purpose of this program is to assist in the design and evaluation of food marketing programs related to nutrition intervention projects in developing countries. More specifically the focus is on intervention efforts involving the commercial marketing of nutritionally improved food products aimed at particular at-risk target populations in these selected developing countries.

Several of the specific activities are related to cereal based low-cost infant weaning foods. This report provides the detailed results of a consumer survey conducted in Guyana as part of the evaluation of the project in that country. The results are an important component of the information needed in assessing how well the project achieved its objectives. The survey procedures and results should also be useful to program managers in other countries where similar projects are contemplated or underway.

Funds for Texas A&M's work on this project were provided by the Office of Nutrition, Bureau for Science and Technology, Agency for International Development, Washington, D.C.

## TABLE OF CONTENTS

	Page
HIGHLIGHTS . . . . .	x
1.0 INTRODUCTION . . . . .	1
1.1 Weaning Food Project Description . . . . .	1
1.2 Phase I Evaluation . . . . .	2
2.0 SURVEY METHODOLOGY . . . . .	3
2.1 Questionnaire . . . . .	3
2.2 Sample Design . . . . .	4
2.3 Field Work . . . . .	7
2.4 Coding and Editing . . . . .	8
2.5 Tabulations and Analysis . . . . .	8
3.0 SURVEY RESULTS . . . . .	10
3.1 Characteristics of the Sample . . . . .	10
3.1.1 Household Location, Ethnicity and Composition . . . . .	10
3.1.2 Household Income and Food Expenditures . . . . .	12
3.1.3 Household Buyer, Decider, Preparer . . . . .	14
3.2 Child Feeding and Weaning Practices . . . . .	15
3.2.1 Breastfeeding Practices . . . . .	15
3.2.2 Baby Food Preferences and Use . . . . .	19
3.2.3 Clinic Attendance . . . . .	24
3.3 Product Awareness and Sources of Information . . . . .	24
3.3.1 Product Awareness . . . . .	26
3.3.2 Sources of Information . . . . .	28
3.4 Purchasing Pattern and Source . . . . .	31
3.4.1 Non-users . . . . .	33
3.4.2 CEREX Users . . . . .	34
3.5 Product Acceptability . . . . .	39
3.5.1 Product . . . . .	39
3.5.2 Price . . . . .	40
3.5.3 Packaging . . . . .	41
3.5.4 Storage, Instructions, Preparation . . . . .	42
3.6 Product Use . . . . .	44
3.6.1 Children Under Two . . . . .	44
3.6.2 Children 2-5 . . . . .	51

	Page
3.6.3 Children Over 5 . . . . .	54
3.6.4 Adults . . . . .	57
3.6.5 Summary . . . . .	57
4.0 SUMMARY AND CONCLUSIONS . . . . .	61
4.1 Summary . . . . .	61
4.1.1 Survey Methodology . . . . .	61
4.1.2 Major Results . . . . .	61
4.2 Conclusions . . . . .	63
APPENDIX A . . . . .	A-1
APPENDIX B . . . . .	B-1
APPENDIX C . . . . .	C-1
APPENDIX D . . . . .	D-1

## LIST OF TABLES

		Page
Table 1.	Selection of Enumeration Districts . . . . .	5
Table 2.	Distribution of Sample Households by Ethnicity and Location . . . . .	11
Table 3.	Distribution of Sample Households by Monthly Take-home Pay and Weekly Food Expenditures, July 1981 . . . . .	13
Table 4.	Average Weekly Food Expenditures by Income Category . . . . .	14
Table 5.	Distribution of Sample Households by Selected Characteristics of the Individual Who Decides What the Children Under Five Years of Age Consume . . .	16
Table 6.	Distribution of Sample Children 24 Months of Age or Less by Age Category . . . . .	17
Table 7.	Distribution of Sample Children Still Being Breastfed by Age Category and Location . . . . .	17
Table 8.	Distribution of Sample Children No Longer Being Breastfed at the Time of the Survey by the Age at Which They Were Taken Off the Breast and by Location . . . . .	18
Table 9.	Distribution of Sample Household Deciders by Preference for Selected Types of Currently Unavailable Imported Baby Foods . . . . .	20
Table 10.	Distribution of Sample Households by Type of Semi-solid Food First Given to Children and Location . . . . .	21
Table 11.	Distribution of Sample Children 24 Months and Under by Cereals and Porridges Consumed Before CEREX, in Addition to CEREX and, for Non-users, What is Now Being Consumed . . . . .	23
Table 12.	Distribution of Sample Children 24 Months and Under by the Frequency With Which They Attend Clinic . . . . .	25
Table 13.	Distribution of Sample Household Deciders by Responses to Selected Questions Concerning Perceptions of CEREX . . . . .	27

	Page
Table 14. Distribution of Household Deciders Who Recognized CEREX by How They First Learned About CEREX and Location . . . . .	29
Table 15. Distribution of Household Deciders by Frequency of Cinema Attendance and Newspaper Reading . . . . .	30
Table 16. Distribution of Sample Households by CEREX Usage, and by Selected Socio-economic Characteristics and Location . . . . .	32
Table 17. Distribution of Sample Households Who Tried CEREX by Where CEREX was Purchased and Location . . . . .	35
Table 18. Distribution of CEREX Users by Usage Frequency and by Selected Socio-economic Characteristics and Location . . . . .	36
Table 19. Distribution of Households Who Stopped Using CEREX by Reasons Given for Stopping and Location . . . . .	39
Table 20. Distribution of Households by Retail Prices Paid for CEREX as of July 1981 and Location . . . . .	41
Table 21. Distribution of Sample Households Who Have Used CEREX by Free versus Prompted Responses to the Steps Used in Preparation and by Location . . . . .	43
Table 22. Distribution of Sample Individuals Who Have Used CEREX and Who Are Still Using CEREX by Age Category, Ethnicity and Location . . . . .	45
Table 23. Distribution of Sample Children Under Two Years of Age Who Have Used CEREX by Frequency, Method and Amount of CEREX Consumption and by Ethnicity and Location . . . . .	46
Table 24. Distribution of Children Five Years of Age and Under by Quantity of CEREX Consumed by Age Category and Ethnicity . . . . .	48
Table 25. Distribution of Children Under Two Years of Age Consuming "Insufficient" Quantities of CEREX by the Type of "Insufficient" Consumption and by Ethnicity . . . . .	49
Table 26. Distribution of Children Under Two Years of Age Who Consume CEREX 2-3 Times/day by Form, Method and Amount of Consumption . . . . .	49

	Page
Table 27. Distribution of Sample Individuals Who Have Used CEREX and Who are Still Using CEREX by Age Category, Education and Income . . . . .	50
Table 28. Distribution of Children Under Two Years of Age Who Have Used CEREX by Frequency, Method and Amount of CEREX Consumption, and by Education and Income Levels . . . . .	52
Table 29. Distribution of Children Ages 2-5 Who Have Used CEREX by Frequency, Method and Amount of CEREX Consumption and by Ethnicity and Location . . . . .	53
Table 30. Distribution of Children Ages 2-5 Who Have Used CEREX by Frequency, Method and Amount of CEREX Consumption, and by Education and Income Levels . . . . .	55
Table 31. Distribution of Children Over Five Years of Age Who Have Used CEREX by Frequency and Form of CEREX Consumption, and by Ethnicity, Education and Income . . . . .	56
Table 32. Distribution of Adults Who Have Used CEREX by Frequency and Form of CEREX Consumption, and by Ethnicity, Education and Income . . . . .	58
Table 33. Distribution of Sample Individuals by Age, the Percentage of Individuals Within Each Age Group Still Using CEREX, and the Percentage Which Users Within an Age Group Are of All Users . . . . .	59

LIST OF FIGURES

	Page
Figure 1. CEREX Survey Regions . . . . .	6

## HIGHLIGHTS

- \* CEREX is a fortified, cereal based weaning food developed in Guyana by the Guyana Pharmaceutical Corporation (GPC) in cooperation with the U.S. Agency for International Development (USAID). The product was commercially marketed in eight ounce polyethylene packets beginning in 1980.
- \* A survey of consumers was conducted in July 1981. The questionnaire included sections on product awareness, acceptability, child feeding and weaning practices, purchasing practices, and selected socio-economic characteristics. This report documents the results of that survey.
- \* The study population for the CEREX Evaluation Survey was defined as all households with children between four months and five years of age. A multistage stratified random sample of 737 households was selected with urbanization being the major distinction among strata.
- \* The sample was 40.8% urban and 59.2% rural and the major ethnic groups, Negro and Indian, accounted for 91.9% of the households. The sample was found to be fairly representative of the residence patterns and ethnic composition of rural coastal and urban households when compared with the 1970 Guyana census.
- \* The majority of the households had a monthly take-home pay of less than 500 Guyana dollars (G\$) and weekly food expenditures of less than G\$100. The lowest income group, with an approximate mean monthly income of G\$300, spent 81% of household income on food.
- \* The individual who decides what the children under five years of age consume is most often a mother and housewife between the ages of 21 and 35 with no more than a secondary education. Promotional/educational campaigns should be directed towards this individual.
- \* One third of the children under two years of age were being breast-fed at the time of the survey and 90% of the others had been breast-fed at one time. Rural children tend to be breastfed longer and given their first semi-solid/solid food later than urban children.

- \* Over one quarter of the children under two were given CEREX as their first semi-solid/solid food. Plantain flour and crushed fruits and vegetables were other important weaning foods. Imports accounted for only 15.3% of the semi-solid/solid foods first given to children. CEREX seems to have filled a gap in weaning food availability -- it was introduced at a low price at a time when imports were being restricted.
- \* Only 6.6% of the sample households did not recognize CEREX and 19% of the 737 households recognized it but never used it (mostly due to a preference for other products). Rural non-recognition and non-use was higher than that of urban areas probably due to inadequate distribution.
- \* Although only a small percentage of the population did not recognize CEREX, one-third to half had incorrect perceptions of what CEREX is, who CEREX is for and what it is made from. This can be partially attributed to insufficient advertising and promotion.
- \* The Negro population was, as a whole, better informed about CEREX than the Indian population possibly due to their history of pap/porridge consumption.
- \* Nearly three-quarters of the sample households had tried CEREX. Of these, about 62% were still using CEREX at the time of the survey. CEREX consumption is higher among the Negro population than the Indian population however, the fact that over half of the Indian households who tried CEREX continued to use it indicates a reasonable degree of acceptance.
- \* A slightly higher percentage of rural households were still using CEREX at the time of the survey than urban households and more rural households who stopped using CEREX did so after repeated CEREX use which reinforces the notion of distribution rather than acceptance problems in the rural areas.
- \* The low and middle income categories and the lower educational levels were associated with a higher percentage of households still using CEREX.

- \* The majority of households (86%) who used CEREX were satisfied with it as a food for their infants. Eighty percent thought CEREX was as good as or better than other baby cereals and 73% had no complaints with CEREX at all (the largest single complaint was the texture).
- \* Usage among the target group was fairly high. Of the children under two 79.1% had used CEREX and 58.2% were still consuming it at the time of the survey. For the 2-5 year olds, 61.6% had tried CEREX and 40.6% were still using it. Usage was highest for the Negro children in urban and rural areas alike.
- \* Although over 80% of the Indian and Negro children under two who were using CEREX consumed it 2-3 times/day, only 50% of the Indian children and 62% of the Negro children were getting 1/4 cup or more per serving. Over half the children (64% of the Indians, 53% of the Negroes) were consuming CEREX through a bottle and less than a third with a bowl and spoon.
- \* "Sufficient quantities of CEREX (1/4 cup or more, 2 or 3 times per day regardless of the form in which it is consumed -- this corresponds to a minimum daily intake of 57 grams of CEREX providing approximately 220 calories) are consumed by 26.7% of the children under two and 29.6% consume "insufficient" quantities. The remainder are not consuming CEREX. The majority of insufficient consumption was due to dilution; the children were eating CEREX 2-3 times/day but were not getting the correct amount.
- \* "Sufficient" consumption was defined with respect to children under two but does provide a guideline for the 2-5 year olds. With this qualification in mind, 17.2% of the 2-5 year olds consume sufficient quantities of CEREX.
- \* With respect to the non-target group 30.8% of the children over five and 11.1% of the adults were using CEREX at the time of the survey. The majority of non-target users consume CEREX once a day or less in porridge form. GPC has estimated that as much as 54% of CEREX production could be going to the non-target group.

- \* Although 84% of the households thought the price of CEREX was just right, only 42.8% of the households were paying the suggested retail price at the time of the survey. There is evidence that blackmarketing of CEREX was taking place as early as July 1981. If CEREX is to be used by low income families with malnourished children, steps must be taken to insure adequate supplies through reputable retailers so that CEREX is affordable to these households.
  
- \* The current packaging of CEREX (half pound, plastic bag) was preferred by the majority of users. Although most households found the instructions easy to follow, survey questions concerning preparation indicate that they were not followed closely, particularly with respect to the CEREX/water ratio.
  
- \* The results of the 1981 CEREX Consumer Evaluation Survey indicate that Phase I of the Guyana Weaning Food Project has been reasonably successful in meeting its objectives. CEREX has been widely distributed (and accepted) throughout Guyana among all segments of the population.

## 1.0 INTRODUCTION

CEREX, a nutritious, cereal based weaning food, was developed under the Guyana Weaning Food Project by Guyana Pharmaceutical Corporation (GPC) in cooperation with the United States Agency for International Development (USAID). Although some indigenous commodities are used in the production of CEREX (rice and sugar), the majority are imported under a PL480, Title II, grant (corn meal, soybean flour, soybean oil, milk powder, vitamins, and minerals). The basic raw ingredients are processed through a low-cost extrusion cooking system before blending with ICSM and a vitamin-mineral premix. The final product is packaged in 8-ounce polyethylene consumer packets. From November 1978 to May 1979 CEREX was test marketed with small consumer groups and in June 1980 the product was officially launched.

### 1.1 Weaning Food Project Description

The goal of the Guyana Weaning Food Project was to improve the nutritional status of Guyana's infants and preschool children (4 months to 2 years of age). A three year pilot project began on October 1, 1978. The purpose of the pilot project was 1) to establish the production capacity for a nutritious weaning food made from indigenous commodities, and 2) to test the feasibility of retail distribution of the product (Guyana, Project Paper, Weaning Food Development).

It was envisaged that the weaning food would be distributed to the target group primarily through commercial marketing channels and secondarily, through maternal child health (MCH) clinics. An evaluation of Phase I (ending December 31, 1982) would indicate if the distribution system had been "effective". If so, project activities could continue (Phase II) as an ongoing nutrition intervention program. Phase II, having a duration of three years, would expand distribution to its maximum potential and phase out Title II ingredients in favor of local ingredients.

## 1.2 Phase I Evaluation

According to the Weaning Food Project Paper, the distribution system would be "effective" if the product had been widely distributed throughout Guyana among all segments of the population via retail outlets and MCH clinics. The project expected to reach at least 40-50% of the 150,000 pre-school children. It was further expected that 60% of these (24-30% of all pre-school children) would be reached during the three year pilot project.

The CEREX Consumer Evaluation Survey Questionnaire, conducted in July 1981, was designed to evaluate the success of Phase I by addressing the following questions:

- 1) What proportion of children under five years of age use CEREX frequently?
- 2) Of those children who use CEREX frequently, what proportion use it correctly?
- 3) What, if any, socio-economic, racial, cultural, religious or age factors influence the purchase or non purchase of CEREX and the way in which CEREX is used?

The purpose of this report is to document the findings and conclusions of that survey. Section 2 of the report reviews the survey methodology including questionnaire design, sample design, field work, coding and editing of data and tabulations. The findings of the CEREX Consumer Evaluation Survey are presented in Section 3, along with a discussion of the implications of these findings. An evaluation of Phase I, based on answers to the above questions, is found in Section 4, Summary and Conclusions.

## 2.0 SURVEY METHODOLOGY

### 2.1 Questionnaire

A draft questionnaire was completed in September 1980 by Dr. John Nichols (Texas A&M University) in collaboration with Beverly Harper (GPC). This questionnaire was tested by personnel in the Marketing Department of GPC and reviewed by other interested persons. A number of improvements were suggested and revisions made. Beverly Harper was responsible for completing revisions, consulting with interested parties and carrying out the pretest.

After many revisions the questionnaire stood in near final form six months later. A number of interested parties, the United States Agency for International Development, the Guyana Pharmaceutical Corporation, the Guyana Ministry of Health (MOH), and the Pan American Health Organization (PAHO), were involved in the revision process. Testing followed each major revision of the questionnaire. The tests were done mostly at clinics and in areas near GPC headquarters at La Penitence. Problem questions were identified and changed.

The final pretest took place as a part of the training program for hired survey interviewers. Each person interviewed four or five households for a total of between 60 and 80. Although the pretest was conducted within reasonable distance of Georgetown (Essequibo and Berbice regions were not included) a diverse sample of urban/rural, ethnic and income backgrounds were covered. Minor adjustments in the questionnaire were made following this pretest.

A copy of the 1981 CEREX Consumer Evaluation Survey Questionnaire is found in Appendix A. The questionnaire is divided into six sections, excluding the introductory page. The introductory information establishes and describes the family member who decides, who purchases and who prepares what the children four months to five years of age consume. Parts I, IV, V and VI, Product Awareness and Knowledge, Product Acceptability, Child Feeding and Weaning Practices, Demographic and Socio-Economic Information, are all answered by the "decider". Part II, Purchasing Pattern and Source, is answered by the "purchaser" leaving Part III, Product Use, for the "preparer".

Some questions were answered by all 737 households while only subsets of the sample population responded to others. For example, only households with children two years and under answered question 36, only households who had used CEREX responded to question 24 and only households still using CEREX answered question 20. A schematic representation of the questionnaire indicating the number of expected responses to each of the questions is found in Appendix A (Figure A-1). Expected and actual responses diverged at times but usually not by large amounts. These divergences were due to several factors: unwillingness on the part of the respondent to answer certain questions, interruptions terminating the interview in midstream, and illegible responses. No difficulties were encountered by the supervisor or in the field work due to problems with questionnaire design.

## 2.2 Sample Design

The study population for the CEREX Consumer Evaluation Survey was defined as all households with children between four months and five years of age. Due to time and resource constraints remote areas accessible only by air or boat were not included in the sample. Since the bulk of the population lives along the coastline and along the banks of the Demerara River this did not impose a serious limitation on the sample. One-occupant households were also deleted in order to maximize the probability of selecting households with children between four months and five years of age.

For the purposes of the 1970 Population Census Guyana was divided into enumeration districts of about 100 households each. These enumeration districts, updated using the as yet unpublished 1980 Population Census, were used as the first stage sampling units for the CEREX survey.

A multistage stratified random sample was decided upon, with the major distinction being between urban and rural strata. Within each major stratum, substrata were formed based on location. These substrata are the same (except for remote areas) as those used in the 1970 Population Census. Table 1 from the 1975 Guyana Fertility Survey

illustrates the procedure used in selection of enumeration districts. Enumeration districts (ED) were selected at random with the number based on the proportion of households in the substrata. Within each ED the households to be included in the sample were selected by an appropriate random procedure.

Table 1. Selection of Enumeration Districts<sup>1</sup>.

Stratum	Population Census 1970	Estimated number of households 1975	Proportion households	Number of enumeration districts	Number of selected enumeration districts	Expected sample size (number of households)
<b>Urban</b>						
Georgetown	63,767	12,768	0.089	155	18	445
Suburbs of Georgetown	102,477	23,354	0.165	170	32	825
New Amsterdam	17,779	3,926	0.027	40	6	135
Upper Demerara (Linden)	23,956	5,293	0.037	50	8	185
<b>Total</b>	<b>207,979</b>	<b>45,341</b>	<b>0.318</b>	<b>415</b>	<b>64</b>	<b>1,590</b>
<b>Rural</b>						
Remote Areas	12,560	2,775	0.019	22	4	95
West Berbice	33,633	7,207	0.050	62	10	250
East Bank Demerara	36,399	8,104	0.057	63	12	285
Essequibo	52,271	11,538	0.081	106	16	405
West Demerara	77,808	17,182	0.120	149	24	600
East Coast Demerara	98,107	22,806	0.160	206	32	800
East Berbice	126,281	27,821	0.195	207	38	975
<b>Total</b>	<b>436,259</b>	<b>97,433</b>	<b>0.682</b>	<b>817</b>	<b>136</b>	<b>3,410</b>
<b>Total Guyana</b>	<b>644,238</b>	<b>142,974</b>	<b>1.000</b>	<b>1232</b>	<b>200</b>	<b>5,000</b>

1/ From the 1975 Guyana Fertility Survey Country Report - Volume 1.

Freddie Duncan, formerly of the GPC Planning Department and now with CARICOM was responsible for: 1) determining the sample size required to fulfill the survey objectives, 2) selecting an appropriate sample design, 3) identifying the sampling procedures, and 4) drafting a specific set of instructions for a systematic sampling routine to be used by interviewers. A statistical report, documenting the sampling procedures was submitted by Mr. Duncan at the end of the survey. This report as well as the interviewers' instructions for sampling are found in Appendix B. Although brief, the report does offer insight into the sampling procedures, particularly when combined with the interviewer's instructions. The rural and urban substrata summary including total households visited; number of "no children", "no response" and "no house" situations; number of questionnaires completed; and number of questionnaires desired is also in Appendix B (Table B-1). The location of rural and urban sample regions along with the number of households interviewed in each is shown on the map in Figure 1.

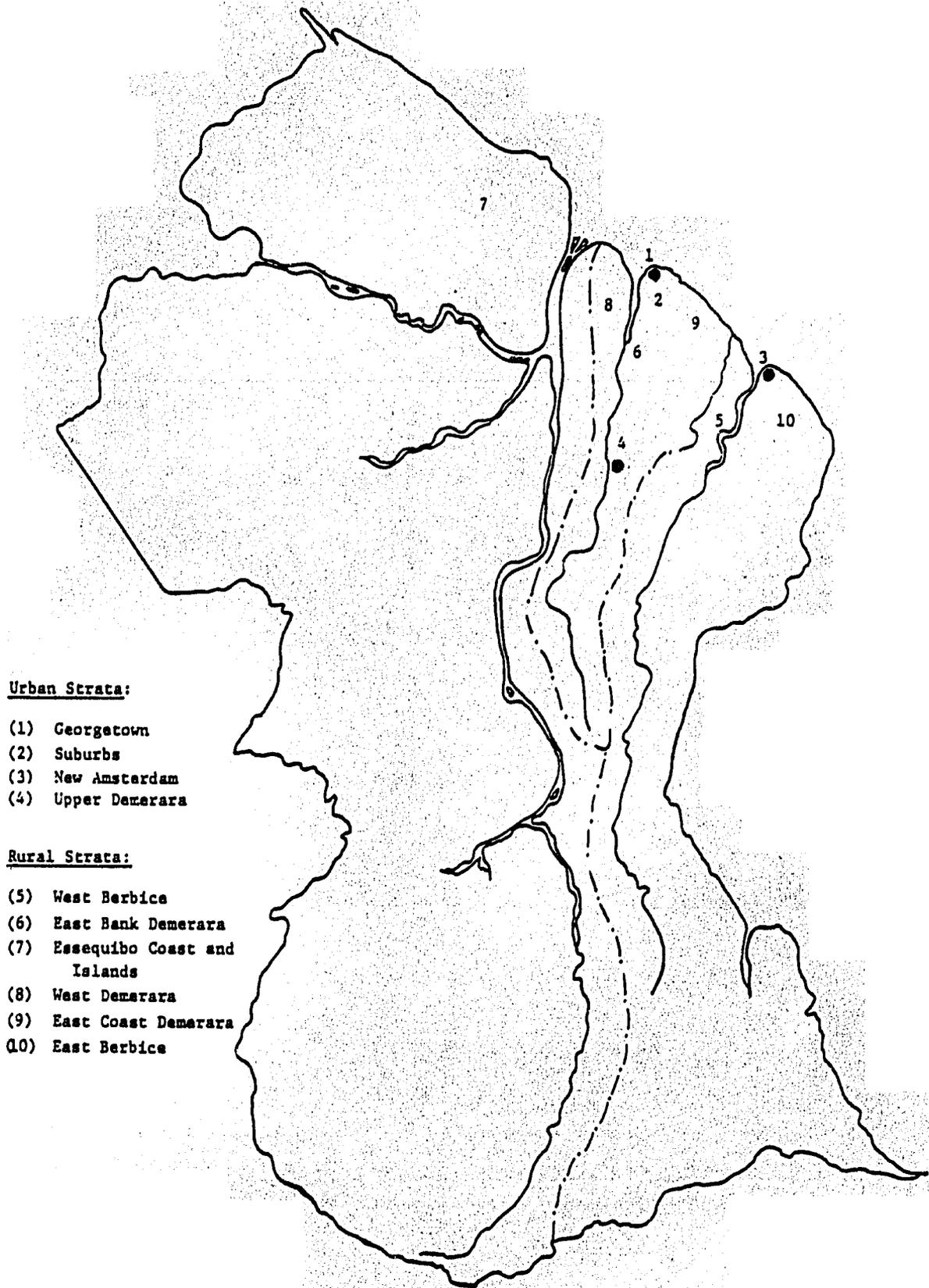


Figure 1. CEREX Survey Regions.

The sampling procedure used in the CEREX survey is commonly employed in studies of this nature; the 1971 Food and Nutrition Survey and the 1975 Guyana Fertility Survey are examples. The sample selection procedure was statistically valid and should have resulted in an unbiased and random sample of households within the selected strata. Whether in fact this occurred is dependent on how closely the statistician's instructions were followed during the fieldwork. This topic is addressed in the next section.

### 2.3 Field Work

Two weeks prior to the beginning of field work sixteen interviewers (mainly University of Guyana students) were hired to conduct the CEREX survey. The four supervisors for the survey came from within GPC and started their preparation 3-4 weeks before field work began. Detailed sets of instructions were distributed to all interviewers (Appendix C). Objectives were discussed, the questionnaire reviewed and the sampling procedure described carefully. It was essential that the interviewers know and understand all parts of the questionnaire. Numerous practice interviews were conducted, anticipating all possible situations or responses one might encounter. This preparation culminated in the questionnaire pretest. By the end of the training period several persons had been dismissed while others were not ready for field work and spent an additional week in training.

Teams of 3-4 interviewers and one supervisor covered an area; interviewers were never sent out unsupervised. In this way field editing could be carried out and questions checked for errors on location. When problems with a particular household or issues that needed clarification arose the supervisor was available to handle them. Problems were resolved on the spot rather than after the fact.

Each interviewer was required to complete and initial a form indicating households where interviews were attempted, those with no responses, and those that completed questionnaires. With this information the supervisor ran spot checks by picking a household at random and verifying that it was actually interviewed.

Most of the problems in the field were related to locating the households selected for interviewing. The local post offices, police stations and village elders assisted in this task. Sometimes the person named was nonexistent or went by a name other than that reported in the official census. In a number of cases the household had moved away. The lists of "A" and "B" households (see Appendix B; "Interviewer Instruction Sheet for Sampling") were sufficient, however, to permit completion of the required number of interviews.

Persons contacted who were involved in the field work indicated that the statistician's instructions were followed as nearly as possible. When problems did arise the field work supervisor consulted with the statistician and they worked out a solution together. Due to the thorough training of interviewers and the close supervision of the fieldwork there is little reason to suspect that the sample would be biased. The entire interviewing process took approximately two months.

#### 2.4 Coding and Editing

Coding and editing of the data was done by the four supervisors with additional help from several of the interviewers. Guidelines were set and agreed upon to minimize or eliminate any subjectivity in the coding. Due to time constraints the data was not edited after being punched into the computer. It was later evident, from discrepancies in the results, that computer editing was necessary. This task was completed by November 1981. All programs using the unedited data were discarded.

#### 2.5 Tabulations and Analysis

All one-way and cross tabulations were completed by July 1982. In cross checking the results from different sections of the survey a number of computer programming errors were found and corrected. A list of all frequency and cross tabulations completed by the GPC computer staff and on file in their department is found in Appendix D. It is recommended that this list be continually updated in order to simplify future access to particular programs.

Data for the four urban regions was summed to get an overall urban trend. The same was done for the six rural regions. GPC employees then checked the trends in the individual urban and rural regions to see how closely they corresponded to the overall urban and rural trends. All individual regions having particularly low or high responses were noted and later discussed. The figures in this report are all in percentage terms. The base used for these percentages varies from question to question but is always stated either in a footnote or in the text. At times the percentages refer only to a subset of the population whereas in other sections of the report percentages of the total population are used. The selection depends on which percentage is relevant to the individual question.

### 3.0 SURVEY RESULTS

The results of the 1981 CEREX Consumer Evaluation Survey are divided into six major sections: 1) Characteristics of the Sample, 2) Child Feeding and Weaning Practices, 3) Product Awareness and Sources of Information, 4) Purchasing Pattern and Source, 5) Product Acceptability, and 6) Product Use. In general these categories follow the headings used in the questionnaire with slightly different ordering. Only those tables relevant to the discussion are presented in the body of the paper. Additional figures can be found in Appendix D along with a list of all frequency distributions and cross tabulations on GPC computer files - not all of which were summarized for this report.

#### 3.1 Characteristics of the Sample

##### 3.1.1 Household Location, Ethnicity and Composition

The sample consisted of 737 households each with at least one child between four months and five years of age. It represents fairly accurately the residence patterns and ethnic groups of the rural coastal and urban households as depicted in the 1970 Population Census. The sample did have a higher percentage of urban households (40.8%) than either the 1970 Population Census or the 1971 National Food and Nutrition Survey (about 34.0%). Two factors account for this difference. In the ten year period considerable rural-urban migration has probably taken place. Secondly, there has been some redistricting in the past ten years causing areas once considered rural to now be included within urban boundaries. It is also possible that the administrative constraints on the sample, which eliminated rural coastal communities that were accessible only by boat, may have resulted in slight skewness. The urban households interviewed were from Georgetown, suburbs of Georgetown, New Amsterdam, and Upper Demerara (major settlements of the mining areas). Rural households from West Berbice, East Bank Demerara, Essequibo, West Demerara, East Coast Demerara and East Berbice made up the remaining 59.2% of the sample households.

As Table 2 shows, 52.5% of the households were classified as Indian, 39.4% as Negro and 8.1% as Mixed, Portuguese, Chinese, Amerindian and other combined. In examining the urban versus rural characteristics of households and the differences in question responses, one should bear in mind that the Indians make up the bulk of the rural population and, as a group, are 90% rural (1971 Food and Nutrition Survey). The figures from this survey indicate that the Indian population is only 79% rural as a group. It must be emphasized, however, that the CEREX survey was based on a subset of Guyanese households - those with children between four months and five years of age. Migratory patterns may have had an effect on this figure also.

Table 2. Distribution of Sample Households by Ethnicity and Location.

Ethnicity	Location		Overall Sample
	Urban	Rural	
	- - - - - percent <sup>1</sup> - - - - -		
Indian	28.0	69.4	52.5
Negro	58.7	26.2	39.4
Mixed	9.3	3.9	6.1
Portuguese	1.0	0	0.4
Chinese	0.7	0	0.3
Amerindian	2.0	0.2	1.0
Other	0.3	0.2	0.3
Total	100.0	99.9	100.0

1/ N = 735: 300 urban, 435 rural.

On the average there were six persons per household with the rural areas having slightly higher numbers. The 1971 Food and Nutrition Survey suggests that this is due to ethnicity rather than urbanization with Indians having larger households on the average. The typical sample household is composed of 1-2 children less than

five years of age, 1-2 children between five and sixteen years of age and 3 persons (probably a father, mother and grandparent) over sixteen years of age. Since the sample is restricted to those households with children 4 months to 5 years of age the household composition of the sample cannot be generalized for the entire population.

### 3.1.2 Household Income and Food Expenditures

The majority of sample households (65.2%) have a monthly take-home pay of less than 500 Guyana dollars (G\$) (Table 3). The percentage of rural households in this category (73.9%) is higher than the percentage of urban households (52.3%) with a monthly take-home pay of less than G\$500. The urban areas have a higher percentage of households falling into the upper income brackets than do the rural areas. For the G\$500-G\$1000/month range the percentages are 33.5% and 23.0% respectively and for the over G\$1000/month range the percentages are 14.2% and 3.1% respectively. Unfortunately these categories cannot be further subdivided since the household was simply asked which classification best described their situation. These income classes are too broadly defined to be of much practical use beyond this general description.

Weekly expenditures on food varied by income group and household location. Overall, 15.8% of the households spent 40 Guyana dollars or less on food per week, 65.0% spent between G\$41 and G\$100/week and 19.1% spent over G\$100/week on food. The urban areas had a slightly higher percentage of households in the lowest food expenditure bracket (17.3%) than the rural areas (14.9%). The percentage of urban households who spend over G\$100/week on food (27.2%) is double the percentage of rural households in the same food expenditure bracket. More rural households fell into the middle bracket (G\$41-G\$100/week) than urban households (71.6% versus 55.5%).

Although the income classes are too loosely defined to draw any definite conclusions, an attempt was made to estimate average weekly food expenditures by income group. The overall figures are presented in Table 4. The difficulty with relying on these figures is

Table 3. Distribution of Sample Households by Monthly Take-home Pay and Weekly Food Expenditures, July 1981.

Income/Expenditure Category in G\$	Location		
	Urban	Rural	Overall Sample
	- - - - - percent - - - - -		
Monthly Income <sup>1</sup>			
< 500	52.3	73.9	65.2
500-1000	33.5	23.0	27.2
> 1000	14.2	3.1	7.6
Total	100.0	100.0	100.0
Weekly Food Expenditures <sup>2</sup>			
< 40	17.3	14.9	15.8
40-100	55.5	71.6	65.0
> 100	27.2	13.7	19.1
Total	100.0	100.0	100.0

1/ N = 699: 281 urban, 418 rural.

2/ N = 737: 301 urban, 436 rural.

evidenced in the great dispersion of weekly food expenditures within a given income category.

Table 4. Average Weekly Food Expenditures by Income Category.

Monthly Income	Weekly Food Expenditures	
	Mean	Range
- - - - - Guyana dollars - - - - -		
< 500	60.71	15 - 130
500 - 1000	104.78	25 - 250
> 1000	171.45	50 - 500

Food expenditures as a percentage of income were calculated assuming the average income within each category to be G\$300, G\$600, and G\$1200. Under this assumption 80.9% of household income went towards food for the lowest income group, 69.8% of household income was spent on food by the middle income group and 57.2% for the highest income group. These figures are not so farfetched when compared to the figures derived in the 1971 Food and Nutrition Survey. The authors indicated that for the median, 69% of household income was spent on food while the upper income class (upper half of households) spent only 44% of household income on food and the lower income class (lower half of households) spent up to 87% of household income on food.

### 3.1.3 Household Buyer, Decider, Preparer

As mentioned in section 2.1, the questionnaire was divided into six parts. Questions concerning purchasing patterns and source were answered by the individual purchasing the children's food. Questions pertaining to product use were answered by the individual preparing the children's food. All other questions were answered by the individual deciding what the children under five years of age consume.

Since the majority of the questionnaire is answered by the household "decider" (in most instances this individual fulfills all three roles), only the characteristics of the household "decider" are presented here (Table 5). The mother is the decider of what the children under five consume in 84.5% of the households. It has been noted that although the mother may make the decisions, the grandmother is a very important influencing factor as an advisor in all matters concerning the children. Seventy percent of the "deciders" are between the ages of 21 and 35 and 85.7% of the "deciders" have not gone beyond secondary education. The majority of the "deciders" (78.4%) categorized themselves as housewives. The emphasis of any promotional/educational campaign must be directed toward the individuals in the population with these characteristics.

### 3.2 Child Feeding and Weaning Practices

Only those households with children 24 months of age and under were asked to complete this section of the questionnaire. The information provides a baseline scenario from which a nutritionist can measure the impact of educational programs aimed at modifying child feeding and weaning practices. Although not included in this report, but undoubtedly of interest to nutritionists, are the ethnic differences in feeding and weaning practices. This cross tabulation was requested and should be available from GPC computer files. The results of this part of the survey are reported under the following headings:

- 1) Breastfeeding Practices, 2) Baby Food Preferences and Use and
- 3) Clinic Attendance.

#### 3.2.1 Breastfeeding Practices

Table 6 gives the age distribution for children 24 months and under in the sample population. One third of these children were being breastfed at the time of the survey (36.0% of the rural children  $\leq$  24 months and 24.4% of the urban children  $\leq$  24 months). Table 7 reports the percentage of children still being breastfed within each age class. Nearly 2/3 of the children under six months of age and

Table 5. Distribution of Sample Households by Selected Characteristics of the Individual Who Decides What the Children Under Five Years of Age Consume.

Characteristics of Household Decider	Overall Sample
	- percent <sup>1</sup> -
<b>Who is Decider</b>	
Mother	84.5
Grandmother	10.2
Father	2.8
Other	2.4
<b>Age of Decider</b>	
0-20	10.5
21-35	69.6
36-50	15.2
> 50	4.7
<b>Education of Decider</b>	
Primary	55.4
Secondary	30.3
Higher	12.9
<b>Occupation of Decider</b>	
Housewife	78.4
Trained/Skilled	12.5
Unskilled	9.1

1/ N = 737: 301 urban, 436 rural.

Table 6. Distribution of Sample Children 24 Months of Age or Less by Age Category.

Age in Months	Overall Sample
	- percent <sup>1</sup> -
0-6	18.7
7-12	30.9
13-18	26.9
19-24	23.4

1/ N = 401: 164 urban, 237 rural.

Table 7. Distribution of Sample Children Still Being Breastfed by Age Category and Location.

Age in Months	Location		Overall Sample
	Urban	Rural	
	- - - - - percent <sup>1</sup> - - - - -		
0-6	48.4	72.7	62.7
7-12	28.6	44.0	37.9
13-18	17.0	24.6	21.3
19-24	8.1	8.8	8.5

1/ For 0-6, N = 75: 31 urban, 44 rural  
 For 7-12, N = 124: 49 urban, 75 rural  
 For 13-18, N = 108: 47 urban, 61 rural  
 For 19-24, N = 94: 37 urban, 57 rural

about 1/3 of those between seven and twelve months were being breastfed. Of those from thirteen to eighteen months of age less than 1/4 were receiving breast milk. The percentage figures are consistently higher for the rural areas.

Of the children who were not being breastfed at the time of the survey 90% had been breastfed at one time - this figure remains unchanged between rural and urban areas. Mothers were asked to report the age at which these children were taken off the breast. Table 8 gives the percentage figures for each age class. Eighty-four percent of the children stopped breastfeeding before they reached nine months. The urban areas had a higher percentage of children who stopped before four months while the rural areas had greater percentages stopping later - between five and twelve months. From the figures in Tables 7 and 8 the expected conclusion can be drawn - rural children tend to be breastfed for a longer period of time than their urban counterparts.

Table 8. Distribution of Sample Children No Longer Being Breastfed at the Time of the Survey by the Age at Which They Were Taken Off the Breast and by Location.

Age in Months	Location		Overall Sample
	Urban	Rural	
	- - - - - percent <sup>1</sup> - - - - -		
0 - 4	62.0	56.1	58.8
5 - 8	23.1	26.5	25.0
9 - 12	9.3	12.9	11.3
> 12	5.6	4.5	5.0
Total	100.0	100.0	100.0

1/ N = 240: 108 urban, 132 rural.

### 3.2.2 Baby Food Preferences and Use

Due to restrictions on imports, a number of baby food items are not officially available in Guyana. The "deciders" were asked what items currently unavailable they would like to see on the market (Table 9). "Any combination" was the answer given with the highest frequency. The most popular individual items were imported processed baby foods such as Nestum, Cerelac and Farex (26.0%) and imported milk (20.4%). A greater percentage of rural household "deciders" (25.9%) wanted to see imported milk on the market than did the urban deciders (13.0%). If imported milk is more readily available in the urban areas this would explain the difference in urban/rural "demand" for the item. These products were viewed by the household "deciders" as being nutritious and better for the child than local foods. Many "deciders" also preferred them due to their positive impact on child development and because they were accustomed to using them.

Nearly two-thirds of the children received their first semi-solid/solid food before they were five months old. Another 22.4% were given their first semi-solid food between five and six months of age with only 12.8% of the children waiting until after six months before receiving some semi-solid/solid food. Coinciding with the finding that rural children stay on the breast longer than urban children is the later age with which they are first given a semi-solid/solid food. In the rural areas 58.7% of the children received their first semi-solid food before five months (versus 72.9% in urban areas), 26.8% between five and six months (16.4% in urban areas) and 14.5% after six months (10.7% in urban areas).

For 27.6% of the children CEREX was the first semi-solid food given (Table 10). Another 42.2% were equally divided between receiving plantain flour and crushed fruits and vegetables as their first semi-solid food. The number of children receiving CEREX as their first semi-solid food appears to be quite high considering that CEREX had only been on the market on a steady basis for about six months prior to the survey. However, the fact that CEREX was introduced

Table 9. Distribution of Sample Household Deciders by Preference for Selected Types of Currently Unavailable Imported Baby Foods.

Type of Baby Food	Location		Overall Sample
	Urban	Rural	
	----- percent <sup>1</sup> -----		
Imported Cereals (Sago, Cornmeal, Barley)	5.7	6.6	6.2
Imported Processed Baby Cereals (Nestum, Cerelac, Farex)	28.5	24.1	26.0
Imported Processed Cereals (Quaker Oats, Cream of Wheat)	0	0.6	0.3
Imported Milk (Lactogen, SMA, Oster Milk, Carnation)	13.0	25.9	20.4
Imported Processed Baby Foods (Heinz, Rusts)	4.1	0	1.7
Any Combination	46.9	42.2	43.9
Other	1.4	0.6	1.4
Total	100.0	100.0	100.0

1/ N = 289: 123 urban, 166 rural.

Table 10. Distribution of Sample Households by Type of Semi-solid Food First Given to Children and Location.

Type of Semi-solid Food	Location		Overall Sample
	Urban	Rural	
	- - - - - percent <sup>1</sup>		
CEREX	28.1	27.3	27.6
Plantain Flour	22.5	20.0	21.1
Crushed Fruits/Vegetables	26.3	17.3	21.1
Crushed Protein	4.4	12.3	8.9
Imported Cereals, Baby Foods, Milk	15.0	15.5	15.3
Other	3.8	7.7	6.1
Total	100.0	100.0	100.0

1/ N = 380: 160 urban, 220 rural.

at a low price at a time when imports were being decreased makes this figure more plausible. Forty-seven percent of the children using CEREX started consumption before five months and 31.6% started between five and eight months of age.

Baby food consumption patterns of CEREX users (prior to using CEREX and while using CEREX) and non-users are given in Table 11. Of the children using CEREX and for whom responses were given, over one-third were consuming imported items (mainly processed baby cereals and milk) before CEREX was available. Another 61.7% were consuming local foods, primarily plantain flour. Contrary to a priori expectations, import usage, before CEREX was available, was highest in the rural populations with 44.4% of the children consuming imported baby foods versus only 29.9% of the urban children consuming these foods. Most of this difference is due to the higher usage of imported milk in the rural areas. It is reasonable to assume that imports were more readily available during this period (1979-81). As mentioned, the higher percentage of rural households with a desire for imported milk (Table 10) may reflect acute availability problems in the rural areas. The higher "demand" for imported milk in the rural areas (Table 10) may also indicate that these areas were, at one time, more dependent on imported milk (Table 11). Two other possibilities come to mind. If imports were already restricted prior to CEREX availability then imported milk may have been more readily available in rural areas due to the influx of black market goods from Surinam directly into an area classified as rural. Another explanation could be that rural respondents may be more prone to "inflate" their actual practices thereby distorting the true percentages of import usage.

Once CEREX was given and the availability of imports further restricted, the use of imports dropped with only 13.3% of the children given imported items in addition to CEREX. The decrease in the use of imports as a supplement to CEREX was greatest in the rural areas where consumption was highest. A large majority (86.7%) consumed local foods in addition to CEREX. The use of local porridges

Table 11. Distribution of Sample Children 24 Months and Under by Cereals and Porridges Consumed Before CEREX, in Addition to CEREX and, for Non-users, What is Now Being Consumed.

Type of Cereal/Porridge	CEREX Users						Non-Users		
	Cereals Given Before CEREX <sup>1</sup>			Cereals Given in Addition to CEREX <sup>2</sup>			Cereals Now Given <sup>3</sup>		
	Location		Overall Sample	Location		Overall Sample	Location		Overall Sample
	Urban	Rural		Urban	Rural		Urban	Rural	
----- percent -----									
<b>Imports:</b>									
Processed Baby Cereals (Nestum, Cerelac, Farex)	14.9	17.1	16.2	3.2	1.8	2.5	12.8	4.9	7.4
Milk (Lactogen, SMA, Oster Milk, Carnation)	10.3	19.7	15.7	0	5.5	3.0	5.1	24.4	18.2
Other (Quaker Oats/Cream of Wheat; Heinz/Rusts; Sago/Cornmeal/Barley) <sup>4</sup>	4.6	7.7	6.4	9.7	6.4	7.9	17.9	7.3	10.7
<b>Total for Imports</b>	<b>29.9</b>	<b>44.4</b>	<b>38.2</b>	<b>12.9</b>	<b>13.6</b>	<b>13.3</b>	<b>35.9</b>	<b>32.9</b>	<b>33.9</b>
<b>Local:</b>									
Plaintain Flour	55.2	42.7	48.0	58.0	52.7	55.2	51.3	32.9	38.8
Local Porridge/Cereal	11.5	8.5	9.8	16.0	20.0	18.2	12.8	13.4	13.2
Other (Crushed Fruits, Vegetables, Protein)	3.4	4.3	3.9	12.9	13.6	13.3	0	20.7	14.0
<b>Total for Local</b>	<b>70.1</b>	<b>55.5</b>	<b>61.7</b>	<b>86.9</b>	<b>86.3</b>	<b>86.7</b>	<b>64.1</b>	<b>67.0</b>	<b>66.0</b>
<b>Total for Imports and Local</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

1/ N = 204: 87 urban, 117 rural

2/ N = 203: 93 urban, 110 rural

3/ N = 121: 39 urban, 82 rural

4/ For CEREX users "other" was mainly Quaker Oats/Cream of Wheat and Heinz/Rusts (processed cereals and baby foods) while for non-users the "other" category was mostly Sago/Cornmeal/Barley (cereals).

and crushed fruits and vegetables increased substantially along with an increase in the percentage of children consuming plantain flour.

Those children who do not use CEREX still rely heavily on imported baby foods, particularly imported milk. One-third of these children are consuming imported items and two-thirds local food. Imported processed baby cereals and other imported cereals are consumed by a higher percentage of urban children whereas imported milk is consumed by a higher percentage of rural children. With respect to local foods, plantain flour is used by a larger percentage of urban "non-users" whereas crushed fruits and vegetables are given to a larger percentage of rural "non-users". These differing consumption patterns are probably more a product of ethnic background than urbanization. An analysis of feeding practices on an ethnic basis would shed some light on this hypothesis.

### 3.2.3 Clinic Attendance

The results of this survey indicate that children under two in rural areas attend clinic slightly more frequently than do urban children of the same age group (Table 12). The overall percentage of sample children attending clinic once a month or more, 63.7%, is thought to be unrealistically high based on Ministry of Health estimates. The higher percentages probably reflect answers to what should be done and not what is actually done. It may also be due to poor time perception since once a month is the simplest answer if one really does not know or cannot judge the time lapse between visits.

### 3.3 Product Awareness and Sources of Information

Questions relating to perceptions of CEREX and media habits were answered by the subset of the sample population (688 households) who recognized CEREX. Only 6.6% of the total sample population did not recognize either the word "CEREX" or the packet of CEREX shown to them. The percentage of non-recognition in the rural areas (8.2%) was almost double that of the urban areas (4.3%). Three regions in particular - New Amsterdam, West Berbice and East Berbice had much higher percentages of non-recognition (17.6%, 14.8% and 15.7% respectively). GPC

Table 12. Distribution of Sample Children 24 Months and Under by the Frequency With Which They Attend Clinic.

Frequency	Location		Overall Sample
	Urban	Rural	
	- - - - - percent <sup>1</sup> - - - - -		
Never	11.0	13.5	12.4
Less than once/month	28.7	20.4	23.9
Once/month	56.1	62.6	59.9
Greater than once/month	4.3	3.5	3.8
Total	100.0	100.0	100.0

1/ N=394: 164 urban, 230 rural

management attributes this to inadequate distribution in these regions, all of which lie in the same area of the country (Figure 1). Regional sales figures for 1981 which report the volume of sales going directly to subdistributors and retailers in these regions tend to support GPC's contention; only 3.9% of CEREX sales went directly to these areas which, combined, account for 23% of the total population. Another factor contributing to the high percentage of non-recognition in these areas may be the contraband goods trade between Surinam and Berbice. Imported baby foods not available elsewhere in the country may be found in Berbice, decreasing the necessity for discovering new products.

### 3.3.1 Product Awareness

Although only a small percentage of the total sample did not recognize CEREX, one-third to half of those who did recognize the product had incorrect perceptions. The figures in Table 13 indicate the percentage of households with correct and incorrect responses or no response. Generally, the actual number of responses corresponds fairly closely with the expected number of responses. In this series of questions however, the incidence of "no response" is substantial and appears to increase with the difficulty of the question (who, what, ingredients). Perhaps, faced with a difficult question, many households chose not to hazard a guess. Interviewers were instructed not to antagonize the households and there were no prompted responses for these questions. Therefore "no response" is, in effect, a failure to establish the "correct" perception. As shown in Table 13 the percentage of deciders with correct responses increased with the ease of the question - "Who is CEREX For," considered to be the easiest question, was answered correctly by 63.8% of the "deciders".

Although what constituted a correct response was determined by the individual coder, the judgement was not entirely subjective. Decisions were based on predetermined guidelines listing key words. For example, under "What is CEREX" a correct response would be either cereal or porridge while any mention of milk or formula was automatically considered incorrect. Incorrect responses to this question

also may reflect the method of preparation (too much water) and how it is consumed (in a bottle).

The low level of correct perceptions to CEREX is in part attributable to insufficient advertising and promotion. GPC discontinued their promotional efforts after the initial launch of CEREX due to production difficulties. These problems were resolved but GPC never followed up with "Phase II" of the promotion plan. The final tally of correct responses given in Table 13 suggest a need for a new promotional/educational program.

Table 13. Distribution of Sample Household Deciders by Responses to Selected Questions Concerning Perceptions of CEREX.

Question	Overall Sample Responses		
	Correct	Incorrect	No Response
	- - - - - percent <sup>1</sup> - - - - -		
What is CEREX	48.3	43.0	8.7
Who is CEREX For	63.8	35.3	0.9
What is CEREX Made From	38.8	30.0	31.3

1/ N = 688: 289 urban, 399 rural.

Differences in CEREX perceptions on the basis of ethnic background were tabulated and relayed to the appropriate market personnel. Although not all of the results are reported herein, it is interesting to note that the Negro population was, as a whole, better informed about CEREX. A possible explanation - the Negro population (according to various surveys) is predisposed toward cereal/porridge consumption and extensive "behavior modification" efforts were not necessary. In short, the advertising messages fell on already receptive ears.

When asked to report "... the first thing that comes to your mind when you hear the word CEREX," 38.8% of the household "deciders"

responded with baby "cereal". This response was 15% higher in urban areas while the rural areas had a 10% higher response of baby "food". This may indicate a more frequent use of CEREX as a formula rather than a cereal/porridge in the rural areas. The section of the report on "Product Use" offers greater insight into this occurrence.

The CEREX slogans and keywords - "CEREX and the breast are best", "bowl and spoon", "for babies four months and over" - did not stick in the minds of those interviewed. Perhaps this was due to the lack of continued promotion or the attempt to implant more messages than could be absorbed.

### 3.3.2 Sources of Information

Over one-fourth of the household "deciders" first learned about CEREX by seeing it in a shop or store (Table 14). This was more common in rural (30.3%) than urban areas (20.5%). Radio was more effective in informing the urban population; 30.9% of the urban "deciders" first learned of CEREX on the radio versus only 17.0% of the rural "deciders". Word of mouth, product visibility and the recommendation of clinics were important means of informing the rural populace about CEREX although the radio also played a significant role. In urban areas radio and newspaper advertisements were more effective although product visibility also accounted for informing a substantial portion of the population. The more traditional advertising channels; radio, and newspaper ads and posters, may not have been as effective as expected due to the lack of continued promotion efforts.

The reading, listening and cinema habits of the household "deciders" who recognized CEREX were explored and should be of interest to GPC market analysts in designing promotional strategies. The results are given in Table 15. Although not included in this report, the media habits of household "deciders" by ethnicity, education and income have been tabulated and forwarded to marketing personnel.

Table 14. Distribution of Household Deciders Who Recognized CEREX by How They First Learned About CEREX and Location.

Information Source	Location		Overall Sample
	Urban	Rural	
	- - - - - percent <sup>1</sup> - - - - -		
Radio	30.9	17.0	22.8
Newspaper	15.6	13.3	14.3
Saw in Store	20.5	30.3	26.2
Friends/Neighbors	13.9	16.8	15.6
Clinic	8.3	16.3	13.0
Poster	4.2	2.0	2.9

1/ N = 687: 288 urban, 399 rural

Table 15. Distribution of Household Deciders by Frequency of Cinema Attendance and Newspaper Reading.

Frequency of Attendance/Reading	Overall Sample
	- percent -
<b>Cinema<sup>1</sup></b>	
Never/Hardly ever	46.7
Less than once/month	14.6
Once per month	12.8
More than once/month	25.9
<b>Newspaper<sup>2</sup></b>	
Never/Hardly ever	11.3
Sundays only	19.6
A few times/week	13.1
Daily	56.4

1/ N = 687: 288 urban, 399 rural

2/ N = 689: 288 urban, 401 rural

Cinema attendance is higher in the urban areas than the rural areas - most probably a result of theater proximity. Fifty-four percent of the rural "deciders" never/hardly ever attend cinema. This figure drops to 36.1 % in the urban areas. Also, the percentage of household "deciders" who visit the cinema more than once a month is 14% higher in the urban areas than the rural areas.

The percentage of household "deciders" in rural areas who never/hardly ever read the newspaper (14.2%) is almost double that of urban areas. Sunday only readership is nearly three times higher in rural areas than urban areas while daily readers among the household "deciders" are 20% greater in the urban areas. Overall, a Sunday ad would reach roughly 3/4 of the household "deciders".

Morning is the most popular time of the day for listening to the radio; 28.6% of the "deciders" are tuned in at this time. Only 16.6% of the "deciders" never listen to the radio (21.1% in rural areas and 10.4% in urban areas). Twenty-two percent of the urban household "deciders" said they listened to the radio all day (only 16.8% of the rural "deciders" listen all day). A morning radio advertisement or talk show should reach nearly half the household "deciders".

#### 3.4 Purchasing Pattern and Source

On the basis of purchasing patterns, the sample can be divided into two obvious groups: non-users and users. Non-users can be decomposed further into households who did not recognize CEREX (6.6% of the sample) and households who recognized CEREX but never used it (19% of the sample). The term "CEREX users" will be used throughout section 3.4 to refer to any household which has tried CEREX (74% of the sample). CEREX users include households which used CEREX only once, households which used CEREX more than once but stopped and households which were still using CEREX at the time of the survey. Table 16 gives the distribution of households among the major sub-groups by location, ethnic, education, and income variants. Since non-recognition was covered under "Product Awareness" the discussion

Table 16. Distribution of Sample Households by CEREX Usage, and by Selected Socio-economic Characteristics and Location.

Characteristics	Location																
	Urban					Rural					Overall Sample						
	CEREX Users <sup>1</sup>		Non-Users			Total <sup>5</sup>	CEREX Users <sup>1</sup>		Non-Users			Total <sup>5</sup>	CEREX Users <sup>1</sup>		Non-Users		
	Still Using	Stopped Using	Never Used	Didn't Recognize	Still Using		Stopped Using	Never Used	Didn't Recognize	Still Using	Stopped Using		Never Used	Didn't Recognize			
All Households	50.8	31.9	12.3	4.3	99.3	42.6	25.5	23.6	8.3	100.0	45.9	28.1	19.0	6.6	99.6		
Ethnicity <sup>3</sup>	percent <sup>2</sup>																
Indian	38.1	35.7	20.2	4.8	98.8	34.4	28.1	26.8	10.6	100.0	35.2	29.8	25.4	9.3	99.7		
Negro	61.4	27.8	6.8	4.0	100.0	63.2	19.3	14.9	2.6	100.0	62.1	24.5	10.0	3.4	100.0		
Education <sup>3</sup>	percent <sup>2</sup>																
Primary	55.0	32.1	6.4	4.6	98.1	42.3	24.5	24.2	9.1	100.0	45.7	26.5	19.4	7.9	99.5		
Secondary	50.8	31.0	14.3	4.0	100.0	50.5	22.7	23.7	3.1	100.0	50.7	27.4	18.4	3.6	100.0		
Higher	44.4	33.3	19.0	3.2	100.0	25.0	43.8	25.0	6.3	100.0	37.9	36.8	21.1	4.2	100.0		
Income <sup>4</sup>	percent <sup>2</sup>																
< 500	53.7	32.7	8.2	4.1	98.7	41.4	26.9	24.6	7.1	100.0	45.4	28.7	19.3	6.1	99.5		
500-1000	57.4	23.4	13.8	5.3	100.0	46.9	26.0	17.7	9.4	100.0	52.1	24.7	15.8	7.4	100.0		
> 1000	30.0	45.0	22.5	2.5	100.0	46.2	0	38.5	15.4	100.0	34.0	34.0	26.4	5.7	100.0		

1/ CEREX Users are any households who have tried CEREX.

2/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-1.

3/ Ethnicity and Education are based on the ethnic grouping and educational level of the household "decider".

4/ Income indicates monthly take-home pay of the entire household in Guyana dollars.

5/ The total does not always sum to 100.0% due to cases of no response.

under "Non-users" proceeds with households who recognized but never used CEREX.

#### 3.4.1 Non-users

The difference between urban and rural non-use is wide. Nearly one-fourth of the rural households who recognized CEREX had never used it while only one-eighth of the urban households had never purchased the product. If one adds to this those households who never used CEREX because they didn't even recognize the product, the difference between rural and urban non-use is even more pronounced. Several factors are involved in creating this difference. One is product availability. GPC management feels the distribution system may have been inadequate for certain rural areas causing a shortage of supplies and inadequate exposure to CEREX. The percentage of households who recognized but never used CEREX was particularly high in the rural areas of West Bank Demerara and East Berbice. The contraband trade with Surinam is a contributing factor to the high percentage of non-use in Berbice. With other products available, CEREX may be less attractive to the population.

A second factor contributing to the difference between urban and rural usage of CEREX is the ethnic background of the household. The Negro households had a much lower percentage of non-use than the Indian households in both rural and urban areas. However, the percentage of rural Negro households who never used CEREX was over double that of the urban Negro households. This indicates that the urban/rural differences cannot be explained by ethnicity alone; inadequate distribution may still be a problem. Cultural differences in child feeding and weaning practices could account for the higher percentage of Indian households who never used CEREX. According to the 1971 Food and Nutrition Survey the Negro population has a long history of pap/porridge usage which could explain the more rapid acceptance of CEREX among Negro households.

The percentage of households who never used CEREX increases slightly with higher education and income levels. It could

be hypothesized that these households had the means of purchasing products not readily available to the lower income, less educated groups. The overall percentage should be used to indicate trends in usage by education and income groups. The urban/rural subdivisions often have so few households in each category, particularly the highest education and income classes, that they cannot be used to make inferences.

The most common reason given for never using CEREX was "preferred other products". The rural responses in this category were much higher (45.6%) than the urban responses (27.0%). Section 3.2 on Child Feeding and Weaning Practices indicated that the rural households consistently had stronger preferences for certain imported products such as milk. This is perhaps an ethnic difference where the Indian population is more inclined toward feeding formula through a bottle. The urban non-users had a higher percentage of responses for "did not like", "locally produced" and "not hygienic", although the magnitude of these responses was 8% or less. Surprisingly, the percentage of households who said they never used CEREX because it was not available was higher in the urban areas (8.1%). Approximately 14 percent of the households never used CEREX because their child was too old.

#### 3.4.2 CEREX Users

In all, 74% of the sample households have used CEREX. The "user" figure is higher for the urban areas (82.7%) than the rural areas (68.1%) and for the Negro population as opposed to the Indian population (86.6% versus 65.0%). The majority of urban households purchased CEREX in the supermarket (Table 17). Other important outlets for the urban buyer include neighborhood shops and market stalls. As might be expected, a higher percentage of rural households purchase CEREX in neighborhood shops rather than supermarkets or market stalls.

Table 17. Distribution of Sample Households Who Tried CEREX by Where CEREX was Purchased and Location.

Where Purchased	Location		Overall Sample
	Urban	Rural	
	- - - - - percent <sup>1</sup> - - - - -		
Supermarket	58.0	29.3	42.4
Neighborhood Shop	18.8	59.6	41.0
Market Stall	16.4	6.7	11.2
Clinic	0.8	2.0	1.5
GPC Outlet	3.6	0.7	2.0
Other	2.4	1.7	2.0
Total	100.0	100.0	100.0

1/ N = 547: 250 urban, 297 rural

CEREX users have been divided into three categories in Table 18. About 15 percent of the users tried CEREX only once, 22.7% used CEREX more than once but stopped and 61.9% of the households who tried CEREX were still using it at the time of the survey. Table 16 also breaks the sample into households who stopped using CEREX and those still using it, however, the percentage figures reported in Table 16 are based on the entire sample (737 households) rather than the subset (548 households) who used CEREX. Although the calculations in Table 16 are justified and add some useful information (i.e. the percentage of "continual users" in the entire sample) they may mask underlying usage patterns. In addition, it is of little value to discuss the percentage of all sample households who stopped using CEREX when not all households used CEREX to begin with. The usefulness of Table 18 becomes clear when usage patterns by ethnicity and location are examined.

Table 18. Distribution of CEREX Users by Usage Frequency and by Selected Socio-economic Characteristics and Location.<sup>1</sup>

Characteristics	Location								Overall Sample			
	Urban				Rural				Used CEREX Only Once	Used More Than Once But Stopped	Still Using CEREX	Total <sup>5</sup>
	Used CEREX Only Once	Used More Than Once But Stopped	Still Using CEREX	Total <sup>5</sup>	Used CEREX Only Once	Used More Than Once But Stopped	Still Using CEREX	Total				
All Households	20.3	17.9	61.4	99.6	10.8	26.6	62.6	100.0	15.1	22.7	61.9	99.7
Ethnicity <sup>3</sup>	percent <sup>2</sup>											
Indian	28.6	19.0	50.8	98.4	14.3	30.7	55.0	100.0	17.9	27.8	54.0	99.7
Negro	17.8	13.4	68.8	100.0	4.3	19.1	76.6	100.0	12.7	15.5	71.7	100.0
Education <sup>3</sup>												
Primary	22.7	13.4	61.9	98.0	9.5	27.1	63.3	100.0	13.9	22.6	62.8	99.3
Secondary	17.5	20.4	62.1	100.0	9.9	21.2	69.0	100.0	14.4	20.7	64.9	100.0
Higher	20.4	22.4	57.1	100.0	22.7	40.9	36.4	100.0	21.1	28.2	50.7	100.0
Income <sup>4</sup>												
< 500	21.7	15.5	61.2	98.4	12.8	26.5	60.7	100.0	16.2	22.4	60.9	99.5
500-1000	13.2	15.8	71.1	100.0	7.1	28.6	64.3	100.0	10.3	21.9	67.8	100.0
> 1000	33.3	26.7	40.0	100.0	0	0	100.0	100.0	27.8	22.2	50.0	100.0

1/ CEREX Users are any households who have tried CEREX.

2/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-1

3/ Ethnicity and Education are based on the ethnic grouping and educational level of the household "decider".

4/ Income indicates monthly take-home pay of the entire household in Guyana dollars.

5/ The total does not always sum to 100.0 % due to cases of no response.

Based on Table 16, 35.2% of the Indian households were still using CEREX versus 62.1% of the Negro households, a 27% difference. If only the households who have used CEREX are considered (Table 18), the results, of course, differ. Fifty-four percent of the Indian households who tried CEREX were still using it versus 71.7% of the Negro households - only a 17.7% difference. While still a wide gap in usage, it is not as large as Table 16 would suggest. The higher incidence of non-use and non-recognition among the Indian households is, in a sense, incorporated into the "still using" figure of Table 16 distorting a true representation of the proportion of households still using CEREX. Thus, a word of caution in the interpretation of Table 16 figures - those in Table 18 may be more relevant to a discussion on usage patterns. A higher percentage of Indian households used CEREX only once (17.9% versus 12.7%) and stopped using CEREX (27.9% versus 15.9%). It appears that acceptance is not as high among the Indian households as the Negro households, however, the fact that over half (54%) of the Indian households who tried CEREX continued to use it does indicate some success.

The rural/urban trends indicated by Table 16 can also be misleading. While the percentage of all rural households still using CEREX is about 8% lower than the urban households (Table 16), the percentage of rural households who tried CEREX and are still using it (Table 18) is slightly higher than for urban households. As suggested previously, the difference in the percentages of all rural/urban households still using CEREX is due largely to the higher percentage of non-recognition and non-use in the rural areas. This may be indicative of a distribution rather than an acceptance problem. Although the percentage of rural and urban households still using CEREX is almost the same (62.6% and 61.4% respectively), Table 18 reveals another interesting usage pattern worth noting. In the rural areas the percentage of households who used CEREX only once is 10% lower than the urban areas, whereas the percentage who used CEREX more than once but eventually stopped is 10% higher. A similar trend is evident for rural versus urban Indians and Negroes indicating that the pattern

cannot be explained entirely by ethnic differences. It is reasonable to assume that the urban population may be more sophisticated in their tastes and preferences and influenced to a greater degree by the "low quality" image which often thwarts acceptance of locally produced goods, hence, the higher percentage of households who used CEREX only once in the urban areas. The higher percentage of rural households who used CEREX more than once but eventually stopped could be attributed to inadequate distribution. As with the rural/urban breakdown for all households, the rural versus urban percentages by ethnicity of households still using CEREX do not vary greatly but are somewhat higher in the rural areas for Indians and Negroes alike (by 4.2% and 7.6% respectively).

Several interesting patterns are apparent in CEREX usage by educational and income level. Again, the urban areas exhibit a higher percentage of households who used CEREX only once while the rural areas have higher percentages for "used more than once but stopped". This supports the hypothesis presented in the preceding paragraph. Overall, the percentage of households still using CEREX with "deciders" of primary or secondary education is about the same (62.8% and 64.9%). However for households with a "decider" of higher education the percentage is lower, 50.7%. A similar trend is evident for the income categories. Overall, the low and middle income categories have a higher percentage of households still using CEREX (60.9% and 67.8% respectively) than does the upper income category (50%).

The majority of those who tried CEREX continued to use it (61.9%), however, 22.7% stopped using it and 15.1% used it only once. The reasons why over one third of those who tried CEREX did not continue usage should be of interest to GPC planners and marketing personnel. Although Table 19 aggregates the responses of all households who stopped using CEREX, the distribution of households who used CEREX only once differs somewhat from households who used it more than once but stopped. While overall, the most common reason was simply that the baby disliked CEREX, it was received with much greater frequency from those households who used CEREX only once (61.5% versus

37.2%). Responses such as "not available" and "child too old" were given more often by households who used CEREX more than once but stopped (10.1% versus 1.9% and 15.5% versus 3.8% respectively).

Table 19. Distribution of Households Who Stopped Using CEREX by Reasons Given for Stopping and Location.

Reasons	Location		
	Urban	Rural	Overall Sample
	- - - - - percent <sup>1</sup> - - - - -		
Baby disliked	48.6	41.1	44.2
Child too old	5.4	16.8	12.2
Caused diarrhea	12.2	5.6	8.3
Bad taste or smell/Worm infested/Didn't mix well	12.3	4.7	7.9
Not available	5.4	9.3	7.7
Other	16.2	22.4	19.9
Total	100.0	100.0	100.0

1/ N = 181: 74 urban, 107 rural

### 3.5 Product Acceptability

#### 3.5.1 Product

CEREX has been widely accepted in urban and rural areas alike. Eighty-six percent of the sample population who had used CEREX (544 households) were satisfied with it as a food for their children. In comparison with baby cereals and porridges previously used, CEREX also received high marks. Nearly eighty percent of those households who had used CEREX considered it to be as good as or better than others.

The majority of households, 72.6%, had no complaints about CEREX - this percentage was higher in rural areas (81.1%) than in urban areas (62.5%). The largest single complaint concerned the

texture of CEREX - 17.5% of the urban households did not like the texture whereas only 6.8% of the rural households voiced the same complaint. GPC management feels this difference is due to urbanization. The reasoning is that the urban population has had greater exposure to a wide variety of imported baby food items and have developed certain "tastes" causing them to be more particular than the rural population. Ethnicity could also account for some of the differences in rural and urban opinions of CEREX. Cereals and porridges have long been a part of the largely urban, Negro population's diet (1971 Food and Nutrition Survey). Therefore, they may have different standards against which to judge CEREX than the Indian population.

### 3.5.2 Price

At the time of the survey only 42.8% of the households who had used CEREX were paying the suggested retail (Georgetown) price of G\$0.50/8 oz. packet (Table 20). The percentage of households paying the suggested retail price is much higher in the urban areas than in the rural areas. One would expect the price of CEREX to increase somewhat as the distance from Georgetown increases to allow for transportation costs. Sixty cents could be considered a reasonable cut off price which should incorporate the costs incurred in transport to most rural areas. It is unlikely that those households paying 61-75¢ and over 75¢ are paying a differential due only to costs of transportation. A devaluation of the Guyana dollar, which took place just before the survey, caused retailers to increase prices on all items by about 18%. This might account for some of the higher prices. However, blackmarketing of CEREX was probably taking place as early as July 1981. Interviewers found evidence of this occurring both directly via pricing and indirectly via "conditional" sales of CEREX.

Table 20. Distribution of Households by Retail Prices Paid for CEREX as of July 1981 and Location.

Price/8 oz. in Guyana Dollars	Location		Overall Sample
	Urban	Rural	
	----- percent <sup>1</sup> -----		
.50	64.9	22.6	42.8
.51 - .55	15.6	31.0	24.1
.56 - .60	9.1	16.4	13.1
.61 - .75	8.7	23.0	16.4
> .75	1.7	6.9	3.7
Total	100.0	100.0	100.0

1/ N = 548: 251 urban, 297 rural

Thirty percent of the rural population was paying a price greater than 60¢/packet and information gathered from informal conversations in some rural areas indicate that CEREX was selling for \$1.50-1.75/packet by late 1981 when shortages were beginning. If CEREX is to be used by low income families with malnourished children (many of whom are in rural areas) steps must be taken to insure adequate supplies through reputable retailers so that CEREX is affordable to these households.

About 84% of the households felt the price of CEREX was just right and 14.0% thought it was too high. Of the rural households, 21.2% thought the price of CEREX was too high. Only 6.1% of the urban households expressed this sentiment.

3.5.3 Packaging

Over half the households who used CEREX were satisfied with the type of packaging and the size of the packet. Nearly two-thirds (64.3%) preferred the plastic bag while 53.4% preferred half

pound packets. The tin followed the plastic bag in popularity; 27.6% of the households preferred CEREX in a tin even though an increase in price could be expected with this type of packaging. About 32% of the households wanted to see CEREX marketed in one pound packets. Several subdistributors expressed concern over the marketing of a one pound packet. Given the current economic conditions in Guyana it would be profitable to break the larger packet down into several packets for resale at blackmarket prices. Therefore, greater control over the product could be maintained by continuing with the smaller packets.

#### 3.5.4 Storage, Instructions, Preparation

Of the households who used CEREX, 57.5% said they stored it in a tin and 15.7% in a safe/cupboard. For the urban households the percentages were 50.8% and 19.0% respectively whereas the figures for the rural households were 63.4% and 12.9% respectively. Other means of storage - refrigerator, plastic container, bottle - had percentages ranging from 3% to 10%. About 5% of both the urban and the rural households said that they used the whole packet upon opening.

A majority of households (69.7%) found the instructions easy to follow (75.7% urban and 64.6% rural). Nearly a third of the rural households (32.3%) said that they don't read the instructions versus less than a quarter (21.1%) of the urban households.

Although 70% of the households felt the instructions were easy to follow, only 7.4% mentioned the correct CEREX/water ratio when asked to list the steps used in preparation (Table 21). After prompting, the percentage using the correct mix increased, but only to 43%. The number of households who mentioned the use of boiled water in preparing CEREX was also low (54.9%) but increased to 72.7% with prompting. These figures suggest a need for more educational programs if CEREX is to be successful in decreasing malnutrition among Guyana's preschool children. The clinics would be an integral part of such a program.

Table 21. Distribution of Sample Households Who Have Used CEREX by Free versus Prompted Responses to the Steps Used in Preparation and by Location.<sup>1</sup>

Steps in Preparation	Location					
	Urban		Rural		Overall	
	Free	Prompted	Free	Prompted	Free	Prompted
	----- percent <sup>2</sup> -----					
Use Boiled Water	55.2	64.6	54.6	80.0	54.9	72.7
Correct CEREX/Water Mix	6.0	35.0	8.6	50.2	7.4	43.0
Add Other Ingredients <sup>3</sup>	82.3	85.2	79.1	89.2	80.5	87.4

1/ "Free" responses indicate the percentage of households who mentioned the above steps when describing their method of preparation. Those households who did not mention one of these steps were then asked directly if, for example, they used boiled water ("prompted" responses).

2/ N = 544: 247 urban, 297 rural.

3/ "Other Ingredients" were mainly sugar and milk.

### 3.6 Product Use

#### 3.6.1 Children Under Two

At the time of the CEREX Consumer Evaluation Survey, 79.1% of the sample children under two were reported to have used CEREX and 58.2% were using it "regularly" (Table 22). Regularly is defined as those households who were still using CEREX when the survey was taken. Generally, usage is slightly higher in the urban areas than the rural areas.

Quite a large difference exists between the usage patterns of Indians and Negroes. Overall, 71.4% of the Indian children under 2 had used CEREX versus 88.0% of the Negro children. Only 48.5% of the Indian children under 2 were still using CEREX at the time of the survey. This represents a 22.9% drop in usage - a much steeper drop than the 15.0% decline in usage for Negro children under 2 (73.0% of the Negro children were still using CEREX at the time of the survey). The pattern holds for urban and rural areas alike. This appears to indicate that a number of Indian households tried the product since it was something novel but did not continue consumption. CEREX did not have as substantial an impact in changing the consumption habits of the Indian children.

With respect to frequency of consumption, over half of the children under two in both the Indian and the Negro households are consuming CEREX 3 times per day and over 80% consume CEREX 2-3 times per day (Table 23). A large majority of both the Indian and Negro target population who have used CEREX are consuming it with sufficient frequency. The difficulties arise when one examines the method and amount of feeding. Overall, 64.0% of the Indian children consume CEREX from a bottle. Only about one third of the children under 2 are receiving CEREX via bowl and spoon. These percentages do not vary much from urban to rural areas. Fifty percent of the Indian children are getting 1/4 cup or more at each serving whereas 62.1% of the Negro children receive ample quantities at each serving.

Of all sample children under two, 41.8% are not consuming CEREX (this percentage includes those who never used CEREX and those

Table 22. Distribution of Sample Individuals Who Have Used CEREX and Who Are Still Using CEREX by Age Category, Ethnicity and Location.<sup>1</sup>

Age/Ethnic Category	Location				Overall Sample	
	Urban		Rural			
	Have Used	Still Using	Have Used	Still Using	Have Used	Still Using
	----- percent <sup>2</sup> -----					
Children Under 2	83.0	62.7	76.4	55.1	79.1	58.2
Indian	75.0	50.0	70.4	48.0	71.4	48.5
Negro	87.6	73.0	88.9	73.0	88.0	73.0
Children 2-5	69.4	50.8	53.8	34.2	61.6	40.6
Indian	66.7	38.7	46.2	22.5	50.1	25.6
Negro	68.8	58.2	68.3	57.2	68.6	57.8
Children Over 5 <sup>3</sup>	45.4	40.1	31.4	24.0	37.3	30.8
Indian	34.3	31.5	20.6	13.0	23.3	16.6
Negro	46.6	43.1	48.0	40.6	47.2	42.1
Adults <sup>3</sup>	17.1	13.5	13.0	9.4	14.7	11.1
Indian	12.9	9.4	9.4	5.1	10.2	6.1
Negro	23.7	20.1	23.4	20.7	23.6	20.3
Non Target Group <sup>4</sup>	27.4	23.2	19.5	14.6	22.8	18.1
Indian	19.3	16.0	13.1	7.7	14.4	9.5
Negro	32.9	29.3	33.4	28.8	33.1	29.1

1/ The ethnic groupings are based on the ethnicity of the person who decides what the child consumes. Only the percentages for the two major ethnic groups are presented here.

2/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-2.

3/ See footnote 3, Table 23.

4/ Non Target group = children over 5 and adults.

Table 23. Distribution of Sample Children Under Two Years of Age Who Have Used CEREX by Frequency, Method and Amount of CEREX Consumption and by Ethnicity and Location.

Usage Pattern	Children Under 2					
	Location					
	Urban		Rural		Overall Sample	
	Indian	Negro	Indian	Negro	Indian	Negro
	----- percent <sup>1</sup> -----					
Frequency of Feeding						
3 times/day	39.4	60.8	77.8	60.7	68.8	60.7
2 times/day	21.2	20.3	8.3	25.0	11.3	22.2
1 time/day	27.3	10.1	7.4	8.9	12.1	9.6
Total	87.9	91.2	93.5	94.6	92.2	92.5
Method of Feeding						
Bowl & Spoon	27.3	29.9	27.4	31.5	27.3	30.5
Feeding cup	8.3	7.8	7.5	27.8	7.9	16.0
Bottle	63.3	62.3	64.2	40.7	64.0	53.4
Total	98.9	100.0	99.1	100.0	99.2	99.9
Amount Per Feeding						
< 1/4 cup	42.4	39.0	52.3	36.4	50.0	37.9
1/4 cup	42.4	29.9	33.6	47.3	35.7	37.1
> 1/4 cup	15.2	31.2	14.0	16.4	14.3	25.0
Total	100.0	100.1	99.9	100.1	100.0	100.0

1/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-3.

who stopped using CEREX) and 56.3% are still using CEREX (Table 24). The percentage of Indian children who are not consuming CEREX (50.5%) is much higher than the percentage of Negro children (27.0%) not using CEREX. Again, these figures underscore the differences in consumption habits between the Indian and Negro populations.

Applying the definition given in footnote 1 of Table 24, children still using CEREX were divided into those who consume "sufficient" quantities and those who consume "insufficient" quantities of CEREX. Of all children under two, 26.7% consume "sufficient" quantities of CEREX while 29.6% consume it in "insufficient" quantities (Table 24). For both the Indian and the Negro populations, the percentage of children consuming "insufficient" quantities was higher in the urban areas. To pinpoint whether "insufficient" consumption was due to infrequent feedings or diluted feedings, Table 25 was developed. The majority of insufficient consumption (for both Indian and Negro children) was due to "dilution"; the children were eating CEREX 2-3 times a day but were not getting the correct amount of CEREX per serving.

Table 26 represents another way of looking at the same problem. In this table, only children under 2 who consume CEREX with the correct frequency (2-3 times/day) are considered. Of these children, 20.5% eat the correct amount of CEREX (1/4 cup or more) in porridge form from a bowl and spoon. At the other end of the spectrum are 25.8% of these children, who consume incorrect quantities (<1/4 cup) as a tea or drink through a bottle. Overall, only 34.4% of these children are eating CEREX in porridge form and 65.6% consume CEREX as a tea/drink.

The impact of education and income on CEREX consumption is somewhat indeterminate. However, it does appear that higher educational levels are associated with appropriate use (Table 27). That is, as the educational level of the "decider" increases the percentage of children under two who have used (and are still using) CEREX increases while adult consumption decreases. More highly educated "deciders" may have a greater awareness of the nutritional needs of children and be less likely to consume CEREX themselves. The trend

Table 24. Distribution of Children Five Years of Age and Under by Quantity of CEREX Consumed by Age Category and Ethnicity.

Age/Ethnic Category	Location											
	Urban				Rural				Overall Sample			
	Not Consuming CEREX	Still Consuming CEREX		Total	Not Consuming CEREX	Still Consuming CEREX		Total	Not Consuming CEREX	Still Consuming CEREX		Total
Sufficient <sup>1</sup> Quantities		Insufficient <sup>2</sup> Quantities	Sufficient <sup>1</sup> Quantities			Insufficient <sup>2</sup> Quantities	Sufficient <sup>1</sup> Quantities			Insufficient <sup>2</sup> Quantities		
	----- percent <sup>3</sup> -----											
Children Under 2	27.3	25.5	35.3	98.1	44.9	27.6	25.8	98.3	41.8	26.7	29.6	98.1
Indian	50.0	18.2	31.8	100.0	50.7	23.0	24.3	98.0	50.5	21.9	26.0	98.4
Negro	27.0	34.8	34.8	96.6	27.0	38.1	27.0	92.1	27.0	36.2	32.9	96.1
Children 2-5	49.2	21.6	24.3	95.1	65.8	14.4	18.3	98.5	59.4	17.2	20.6	97.2
Indian	61.3	17.3	16.0	94.6	77.5	7.6	14.2	99.3	74.4	9.5	14.6	98.5
Negro	41.8	26.5	27.5	95.8	42.8	29.0	24.8	96.6	42.2	27.5	26.3	96.0

1/ "Sufficient" consumption is defined as 1/4 cup of CEREX or more, 2 or 3 times per day regardless of the form in which it is consumed. One quarter cup of CEREX, 2 times per day, is roughly equivalent to 57 grams of CEREX per day (220 calories).

2/ "Insufficient" consumption is defined as less than 1/4 cup of CEREX per serving no matter how many times a day it is consumed or less than 2 servings per day no matter what quantity is consumed.

3/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-2.

Table 25. Distribution of Children Under Two Years of Age Consuming "Insufficient" Quantities of CEREX by the Type of "Insufficient" Consumption and by Ethnicity.

Ethnicity	Type of "Insufficient" Consumption			Total
	< 1/4 cup		≥ 1/4 cup	
	2 or 3 times/day	≤ 1 time/day	≤ 1 time/day	
	----- percent <sup>1</sup> -----			
Children Under 2	65.2	15.2	19.6	100.0
Indian	60.8	21.6	17.6	100.0
Negro	68.0	10.0	22.0	100.0

1/ N = 101: 51 Indian, 50 Negro

Table 26. Distribution of Children Under Two Years of Age Who Consume CEREX 2-3 Times/day by Form, Method and Amount of Consumption.

Feeding Method	Form of Consumption				Total
	Porridge		Tea/Drink		
	≥ 1/4 cup	< 1/4 cup	≥ 1/4 cup	< 1/4 cup	
	----- percent <sup>1</sup> -----				
Bowl and Spoon	20.5	7.0	0	0	27.5
Feeding Cup	4.4	1.7	3.5	3.5	13.1
Bottle	0.4	0.4	32.8	25.8	59.4
Total	25.3	9.1	36.3	29.3	100.0

1/ N = 243

Table 27. Distribution of Sample Individuals Who Have Used CEREX and Who are Still Using CEREX by Age Category, Education and Income.

Education/Income Category	Have Used CEREX					Still Using CEREX				
	Under 2	2-5	Over 5 <sup>3</sup>	Adults <sup>3</sup>	Non Target <sup>4</sup>	Under 2	2-5	Over 5 <sup>3</sup>	Adults <sup>3</sup>	Non Target <sup>4</sup>
Overall	79.1	61.6	37.3	14.7	22.8	58.2	40.6	30.8	11.1	18.1
Education <sup>2</sup>										
Primary	74.2	57.1	35.6	17.3	24.3	54.2	39.3	29.2	13.5	19.5
Secondary	81.3	68.2	43.1	16.5	25.2	63.4	48.1	37.1	12.4	20.5
Higher	88.0	53.6	29.0	12.6	17.8	62.0	31.0	23.7	9.5	13.9
Income <sup>2</sup>										
< \$500	79.5	56.9	38.6	18.8	26.4	56.6	38.2	32.0	14.8	21.3
\$500-1000	76.1	71.7	35.5	15.4	22.1	63.6	50.3	29.0	11.4	17.3
> \$1000	73.3	49.1	25.8	7.1	12.8	50.0	37.7	21.5	4.3	9.5

- 1/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-2.
- 2/ Education refers to the level of education of the person in the household who decides what the child consumes. Income refers to total monthly take-home pay for the entire household in Guyana dollars.
- 3/ Separate percentage figures for these two age classes were calculated under the assumption that the "over 5" and "adults" categories used in survey question 24 (CEREX consumption) correspond to the "5-16" and ">16" categories used in survey questions 38c and 38d (Household composition). These results may slightly overestimate product use by the "over 5" age class and slightly underestimate product use by the "adults". The percentages for the non target group - "over 5" and "adults" combined - are exact.
- 4/ Non target group = children over 5 and adults.

is unclear for the 2-5 and over 5 age categories where usage is highest under "deciders" with a secondary education.

Regardless of age, CEREX consumption is higher for households in the lowest income bracket than those in the highest bracket (Table 27). This trend seems reasonable. The low price of CEREX would certainly make it attractive to low income households and wealthier households might be expected to have greater access to imported baby cereals thereby decreasing their demand for CEREX.

The figures in Table 28 indicate that the percentage of children who are getting CEREX frequently enough (2-3 times per day) increases as the level of education decreases. The same is true for income - as income decreases, the percentage of children under 2 consuming CEREX 2-3 times per day increases. Consumption of CEREX with a bowl and spoon is greater (and bottle use, less) for those "deciders" with an education beyond secondary. Income does not appear to have much of an influence on method of feeding, however, the lower levels of income do have a higher percentage of children eating 1/4 cup or more per serving. Perhaps this is due to the reasonable price of CEREX and prohibitive prices of other items with similar nutritional value.

### 3.6.2 Children 2-5

Of the children in the secondary target group, 61.6% have consumed CEREX and 40.6% are still using it. Again, the drop between children 2-5 who have used and those still using is much greater for the Indian population (Table 22). Urban Indian consumption for children 2-5 is higher than rural Indian consumption, whereas urban and rural Negro consumption is about the same.

The percentage of children 2-5 reported to be consuming CEREX 2-3 times/day is less than the percentage of children under 2 who consume 2-3 times/day (Table 29). Over half of the Indian children 2-5 consume CEREX as a porridge but 42.9% still consume CEREX as a tea/drink. The Negro population has a higher percentage of children 2-5 who consume CEREX as a porridge (72.7%) and a lower

Table 28. Distribution of Children Under Two Years of Age Who Have Used CEREX by Frequency, Method and Amount of CEREX Consumption, and by Education and Income Levels.

Usage Pattern	Children Under 2					
	Education			Income		
	Primary	Secondary	Higher	< \$500	\$500-1000	> \$1000
	----- percent <sup>1</sup> -----					
Frequency of Feeding						
3 times/day	68.8	61.5	54.5	66.5	67.2	40.9
2 times/day	15.6	17.4	20.5	16.0	10.4	36.4
1 time/day	8.5	13.8	15.9	11.3	10.4	22.7
Total	92.9	92.7	90.9	93.8	88.0	100.0
Method of Feeding						
Bowl & Spoon	28.1	26.4	39.5	29.3	26.2	50.0
Feeding cup	10.1	13.2	9.3	10.5	13.8	0
Bottle	61.2	60.4	51.2	60.2	58.5	50.0
Total	99.4	100.0	100.0	100.0	98.5	100.0
Amount Per Feeding						
< 1/4 cup	52.1	33.3	45.2	42.9	52.2	42.9
1/4 cup	32.1	46.3	23.8	38.7	28.4	28.6
> 1/4 cup	15.7	20.4	31.0	18.3	19.4	28.6
Total	99.9	100.0	100.0	99.9	100.0	100.1

1/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-3.

Table 29. Distribution of Children Ages 2-5 Who Have Used CEREX by Frequency, Method and Amount of CEREX Consumption and by Ethnicity and Location.

Usage Pattern	Children 2-5					
	Location				Overall Sample	
	Urban		Rural			
	Indian	Negro	Indian	Negro	Indian	Negro
	----- percent <sup>1</sup> -----					
Frequency of Feeding						
3 times/day	30.0	31.8	41.2	39.2	38.4	34.9
2 times/ day	34.0	32.6	24.3	26.8	26.8	30.1
1 time/day	24.0	29.5	23.0	20.6	23.2	25.8
Total	88.0	93.9	88.5	86.6	88.4	90.8
Form						
Porridge	62.0	76.7	53.4	67.3	55.6	72.7
Tea/drink	36.0	22.5	45.3	32.7	42.9	26.9
Total	98.0	99.2	98.7	100.0	98.5	99.6
Amount Per Feeding						
< 1/4 cup	17.4	29.6	49.0	21.3	41.3	26.0
1/4 cup	60.9	32.0	35.0	48.9	41.3	39.3
> 1/4 cup	21.7	38.4	16.1	29.8	17.5	34.7
Total	100.0	100.0	100.1	100.0	100.1	100.0

1/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-3.

percentage (26.9%) who consume it as a tea/drink. The percentage of urban Indian children who consume CEREX in porridge form is higher than that for rural Indian children. Slightly higher percentages of the children 2-5 are getting 1/4 cup or more of CEREX than the children under 2. A higher percentage of rural Indian children are not getting 1/4 cup or more than rural Negro children (49.0% versus 21.3%) - perhaps a result of the tendency toward bottle feeding in rural Indian households. Table 30 gives the breakdown of how CEREX is consumed according to variations in the education level of the "decider" and total monthly take-home pay. No trends are obvious.

Nearly 60% of children 2-5 are not consuming CEREX (again this includes those who never consumed CEREX and those who stopped using it) and 37.8% are still using the product (Table 24). A larger percentage of Indian children 2-5 (74.4%) are not consuming CEREX than Negro children (42.2%). "Sufficient" consumption was defined with respect to children under two. Since nutritional requirements change with age this definition is not as applicable to the 2-5 year olds, however, it can serve as a guideline. With this qualification in mind, Table 24 indicates that only 17.2% of the children 2-5 consume "sufficient" quantities of CEREX. The figure is much lower for Indian children 2-5 (9.5%) than Negro children (27.5%). The ethnic differences are more pronounced in the rural areas.

### 3.6.3 Children Over 5

Of the children over 5, 37.3% were reported to have consumed CEREX and 30.8% are still using CEREX (Table 22). As with the two previous age groups, the percentage of children who have used CEREX is higher for the Negro population and the drop between "used" and "still using" is less pronounced. Use by urban children over 5 is greater than for rural children over 5. This appears to be due mostly to ethnicity rather than location.

The majority of children over 5 who have used CEREX consume it as a porridge; 71% of the Indian children and 85.2% of the Negro children (Table 31). Only 22.7% of the Indian children over 5

Table 30. Distribution of Children Ages 2-5 Who Have Used CEREX by Frequency, Method and Amount of CEREX Consumption, and by Education and Income Levels.

Usage Pattern	Children 2-5					
	Education			Income		
	Primary	Secondary	Higher	< \$500	\$500-1000	> \$1000
	----- percent <sup>1</sup> -----					
<b>Frequency of Feeding</b>						
3 times/day	38.9	32.2	28.8	36.0	35.8	30.8
2 times/day	27.0	28.1	33.3	29.0	27.7	26.9
1 time/day	22.6	30.1	26.7	24.0	24.1	38.5
Total	88.5	90.4	88.8	89.0	87.6	96.2
<b>Form</b>						
Porridge	64.1	67.1	58.7	63.2	65.9	70.4
Tea/drink	35.4	32.2	37.0	35.7	34.1	25.9
Total	99.5	99.3	95.7	98.9	100.0	96.3
<b>Amount of Feeding</b>						
< 1/4 cup	34.4	34.3	38.6	34.3	37.1	36.0
1/4 cup	42.7	35.0	36.4	38.8	42.4	32.0
> 1/4 cup	22.9	30.8	25.0	26.9	20.5	32.0
Total	100.0	100.1	100.0	100.0	100.0	100.0

1/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-3.

Table 31. Distribution of Children Over Five Years of Age Who Have Used CEREX by Frequency and Form of CEREX Consumption, and by Ethnicity, Education and Income.

Usage Pattern	Children Over 5							
	Ethnicity		Education			Income		
	Indian	Negro	Primary	Secondary	Higher	< \$500	\$500-1000	> \$1000
	----- percent <sup>1</sup> -----							
<b>Frequency</b>								
3 times/day	6.8	17.6	18.1	7.0	2.6	11.8	18.3	20.8
2 times/day	15.9	23.3	17.7	21.8	30.8	19.4	21.6	20.8
1 time/day	53.8	36.5	37.5	52.8	51.3	45.7	37.5	29.2
> 1 time/week	15.9	13.2	19.1	4.2	12.8	13.5	11.7	25.0
1 or less/week	7.6	9.5	7.6	14.1	2.6	9.7	10.8	4.2
<b>Total</b>	100.0	100.1	100.0	99.9	100.1	100.1	99.9	100.0
<b>Form</b>								
Porridge	71.0	85.2	77.1	89.1	79.5	79.9	84.2	90.0

1/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-3.

consume CEREX 2 or 3 times a day - the remainder (77.3%) consume it once/day or less. In contrast, 40.9% of the Negro children over 5 consume CEREX 2-3 times/day and 59.2% once/day or less. This indicates a wider use of CEREX as a general family cereal among the Negro population.

#### 3.6.4 Adults

Of the adult population, 14.7% reported using CEREX and 11.1% are still using it. These percentages are higher in the urban areas due to higher usage among the adult Negro population (Table 22). The percentage of adult Negroes using CEREX (23.6%) is higher than that of adult Indians (10.2%). The trend is more pronounced in the rural areas.

Only 20.7% of the adult Indians who consume CEREX use it 2-3 times/day - 79.4% consume it once or less/day (Table 32). The percentage of adult users consuming CEREX 2-3 times/day is higher among the Negro population (35.8%). The majority of adults using CEREX consume it in porridge form - 76.3% of the Indian adult users and 82.9% of the Negro adult users.

#### 3.6.5 Summary

A summary of CEREX consumption by age category indicates both promising and disturbing trends (Table 33). Eight percent of the sample individuals were children under two years of age and 58.2% of these children were consuming CEREX at the time of the survey. The secondary target group accounted for 16.8% of the sample individuals and 40.6% of this group was using CEREX. This suggests a reasonable degree of acceptance and use by the target population. However, only 18.8% of all CEREX users are under two years of age and 45.9% under five years of age. Assuming that adults consume the same amount of CEREX as children (they consume CEREX less frequently but in larger quantities per serving), then 21.2% of CEREX production is being consumed by adults; 54% by the non-target group. This represents a maximum amount of production going to the non-target group, since the

Table 32. Distribution of Adults Who Have Used CEREX by Frequency and Form of CEREX Consumption, and by Ethnicity, Education and Income.

Usage Pattern	Adults							
	Ethnicity		Education			Income		
	Indian	Negro	Primary	Secondary	Higher	< \$500	\$500-1000	> \$1000
	----- percent <sup>1</sup> -----							
<b>Frequency</b>								
3 times/day	9.1	12.4	12.5	9.8	5.0	9.2	15.8	0
2 times/day	11.6	23.4	17.6	18.8	22.5	21.0	15.8	20.0
1 time/day	49.6	34.9	32.9	48.2	57.5	38.0	38.6	46.7
> 1 time/week	12.4	17.0	19.4	11.6	2.5	14.0	16.8	26.7
1 or less/week	17.4	12.4	17.6	11.6	12.5	17.9	12.9	6.7
Total	100.1	100.1	100.0	100.0	100.0	100.1	99.9	100.1
<b>Form</b>								
Porridge	76.3	82.9	78.9	88.1	74.4	82.4	80.8	78.6

1/ The total number of rural, urban and overall responses used to calculate these percentages are found in Appendix D, Table D-3.

Table 33. Distribution of Sample Individuals by Age, the Percentage of Individuals Within Each Age Group Still Using CEREX, and the Percentage Which Users Within an Age Group Are of All Users.

Age in Years	Distribution of Sample <sup>1</sup>	% of Age Group Still Using CEREX <sup>1</sup>	% of All Users Still Using CEREX <sup>2</sup>
	----- percent -----		
< 2	8.1	58.2	18.8
2-5	16.8	40.6	27.1
5-16	26.8	30.8	32.8
> 16	48.1	11.1	21.2
Total	99.8	--	99.9

1/ The number of overall responses used to calculate these percentages are found in Appendix D, Table D-2 (row 1, columns 9-12).

2/ The number of overall responses used to calculate these percentages are found in Appendix D, Table D-3 (row 1, columns 5-8).

assumption that adults consume quantities of CEREX equal to that of the children is quite generous. Even so, an inordinate amount of CEREX production is being "siphoned off" by the non-target group; a problem which has been exacerbated by the worsening economic situation. GPC is well aware of the "leakage" and is taking steps to correct the problem.

## 4.0 SUMMARY & CONCLUSIONS

### 4.1 Summary

#### 4.1.1 Survey Methodology

The study population for the July 1981 CEREX Evaluation Survey was defined as all households with children between four months and five years of age. A multistage random sample of 737 households was selected. The sample design is well documented and commonly employed in studies of this nature. Due to time and resource constraints remote areas accessible only by air or water were excluded. This did not impose a serious limitation on the sample since the large majority of the population (96%) lives along the coastline and along the banks of the Demerara River. The fieldwork was conducted according to statistician's sampling instructions with close supervision. There is little reason to suspect that any sample bias was introduced at this stage.

#### 4.1.2 Major Results

From either a nutritionist's or a market analyst's standpoint the data from the CEREX survey provides valuable insight for future planning. However, only the results which are directly relevant to the continuation of the Guyana Weaning Food Project will be summarized here; namely product acceptability and usage by the target population.

Only 6.6% of the sample households did not recognize CEREX and 19% of the 737 households recognized the product but had never used it (mostly due to a preference for other products). The majority of households (86%) who used CEREX were satisfied with it as a food for their infants. Eighty percent thought CEREX was as good as or better than other baby cereals they had used and 73% had no complaints with CEREX at all (the largest single complaint was the texture). In terms of price, 84% of the households thought it was just right. The plastic bag and half-pound size packets were preferred by 64% and 53% of the households respectively. Urban areas showed higher levels of

recognition and use as compared to rural areas. This pattern was consistent for both Indian and Negro populations indicating that the differences are perhaps due to inadequate distribution rather than ethnicity.

A large percentage of the target population (79.1% of the children under two and 61.6% of the children two to five) have tried CEREX. These results are encouraging. However, to evaluate project effectiveness or success, the more important figures are the percentages of the target population using CEREX frequently and correctly. Although 79.1% of the children under two had used CEREX, only 58.2% were still using CEREX at the time of the survey (40.6% of the children two to five). Of the children under two who had used CEREX over 80% were consuming it 2-3 times/day. However, only 50% of the Indian children and 62% of the Negro children were getting the correct quantity (1/4 cup or more/serving). Over half of the children (64% of Indians, 53% of Negroes) were consuming CEREX through a bottle and less than 1/3 with a bowl and spoon.

Although a large number of children under two are consuming CEREX from a bottle, cross tabulations (Table 23, p. 46) show that over half of those children are consuming 1/4 cup or more per serving. Two factors make this situation feasible - a number of mothers may be cutting off the end of the nipple and variations in CEREX batches make it possible to mix 1/4 cup of CEREX with the correct amount of water (or a little more) and have a mixture fluid enough to pass through a bottle nipple. Thus, "sufficient" consumption was defined totally on the basis of quantity and frequency, ignoring the method of consumption and includes those still consuming 1/4 cup or more per serving 2-3 times a day. On the basis of this definition 27% of the children under two (17% of the children 2-5) are consuming "sufficient" quantities of CEREX, 30% are consuming insufficient quantities (21% of the children 2-5) and 42% (59% of the children 2-5) are not using CEREX (either never used or stopped using). Insufficient consumption was due mainly to dilution (using less than 1/4 cup per serving) rather than the frequency with which CEREX was consumed.

Couched in terms of the survey objectives: 1) 81.2% of the children under two who have used CEREX use it frequently (2-3 times/day); this represents 64.3% of the total population of children under two and 2) only 21% (Table 26) of those who use it frequently use it correctly (bowl and spoon, 1/4 cup or more/serving, porridge form) - 13% of the total population of children under two. This definition of correct - bowl and spoon, porridge form- is rather narrow and, as was discussed earlier, some children may be getting "sufficient" amounts of CEREX through a bottle with the nipple cut off or through a bottle with a more fluid batch of CEREX.

Although education and income appear to have some influence on CEREX consumption patterns, ethnicity seems to be the most important factor affecting usage. The percentage of children who have used CEREX and who are still using CEREX is greater among the Negro population; likewise the Indian population has a larger percentage of children who either never used CEREX or stopped using CEREX. This pattern was similar for rural and urban areas confirming an ethnic difference in usage. The CEREX campaign does not appear to have been very successful in changing existing weaning habits. Although many Indian households may have tried CEREX, usage in some was not continued since they have no real history of cereal/porridge consumption. A larger percentage of Indian children consume CEREX in a bottle and consume less than 1/4 cup per serving. Consequently, the percentage of Negro children under two receiving "sufficient" quantities of CEREX was about 14% higher than the Indian children. Consumption of CEREX by children under two appears to increase with the level of education and decrease with income.

#### 4.2 Conclusions

The results of the 1981 CEREX Consumer Evaluation Survey indicate that Phase I of the Guyana Weaning Food Project has been reasonably successful in meeting its objectives. CEREX has been widely distributed (and accepted) throughout Guyana (with the exception of a few areas which have been brought to the attention of GPC) among all segments

of the population (different ethnic, education and income backgrounds). The pilot project expected to "reach" 24-30% of the 150,000 pre-school children. The term "reach" is open ended but by any definition the goal has been met: 79.1% of the children under two have used CEREX (61.6% of the children 2-5); 58.2% were still using CEREX 13 months after the product was launched (40.6% of the children 2-5); over 80% consumed CEREX 2-3 times/day (65% of the children 2-5); over half consumed 1/4 cup or more, and 27% consume "sufficient" quantities of CEREX (17% of the children 2-5).

Since "insufficient" consumption appears to be due mainly to dilution, a strong educational effort is needed, perhaps through the clinic system, to encourage the use of increased quantities per serving. A large part of this effort should be directed at the Indian population which has a higher percentage of children who do not consume CEREX, who consume less than 1/4 cup/serving and who use a bottle. If a modification of the "bottle weaning pattern" is not feasible, perhaps an intermediate step of getting mothers to cut the nipple should be encouraged in order to insure that CEREX is being consumed in porridge form.

GUYANA PHARMACEUTICAL CORPORATION LIMITED  
1981 CEREX CONSUMER EVALUATION SURVEY QUESTIONNAIRE

(To be administered only to households with at least one (1) child  
between four months and five years of age)

INTERVIEWER : \_\_\_\_\_ SCHEDULE NO : \_\_\_\_\_  
DATE : \_\_\_\_\_ ADDRESS : \_\_\_\_\_  
TIME : \_\_\_\_\_

For the children under five years of age in the household, who decides what they eat,  
who buys their food, and who prepares/serves their food?

CALL-BACK TIMES: \_\_\_\_\_

1. QUESTION	DECIDER	BUYER	PREPARER
a. Which household member: 1 - Mother 2 - Grandmother 3 - Father Other (specify) _____ (CODE LATER)	<input type="checkbox"/> 1 _____ _____	<input type="checkbox"/> 8 _____ _____	<input type="checkbox"/> 15 _____ _____
b. Age (in years):	<input type="checkbox"/> <input type="checkbox"/> 2 - 3 _____ _____	<input type="checkbox"/> <input type="checkbox"/> 9 - 10 _____ _____	<input type="checkbox"/> <input type="checkbox"/> 16 - 17 _____ _____
c. Ethnic Group: 1 - Indian    4 - Portuguese 2 - Negro    5 - Chinese 3 - Mixed    6 - Amerindian Other (specify) _____ (CODE LATER)	<input type="checkbox"/> 4 _____ _____	<input type="checkbox"/> 11 _____ _____	<input type="checkbox"/> 18 _____ _____
d. What is the name of the last school/institute/university you went to? (CODE LATER) 1 - Don't know/none 2 - Primary 3 - Secondary 4 - Higher than Secondary	<input type="checkbox"/> 5 _____ _____	<input type="checkbox"/> 12 _____ _____	<input type="checkbox"/> 19 _____ _____
e. Occupation (CODE LATER)	<input type="checkbox"/> <input type="checkbox"/> 6 - 7 _____ _____	<input type="checkbox"/> <input type="checkbox"/> 13 - 14 _____ _____	<input type="checkbox"/> <input type="checkbox"/> 20 - 21 _____ _____

PART I - Product Awareness and Knowledge - to be answered by DECIDER  
PART II - Purchasing Pattern and Source - to be answered by PURCHASER  
PART III - Product Use - to be answered by PREPARER  
PART IV - Product Acceptability - to be answered by DECIDER  
PART V - Child Feeding/Weaning Practices - to be answered by DECIDER  
PART VI - Demographic and Socio-Economic Information - to be answered by DECIDER

65

PART I - PRODUCT AWARENESS AND KNOWLEDGE

**(THIS SECTION MUST BE ANSWERED BY THE DECIDER)**

2. Do you recognize any of these names? **(NAME THE FOLLOWING PRODUCTS)**

a. Nestum 1 - Yes 2 - No  22

b. Plantain Flour 1 - Yes 2 - No  23

c. Cerex 1 - Yes 2 - No  24

3. Do you recognize this packet? **(SHOW A PACKET OF CEREX)**

1 - Yes 2 - No  25

**(IF NO TO BOTH QUESTIONS 2.c. AND 3., GO DIRECTLY TO PART V, QUESTION 35)**

4. What is Cerex? \_\_\_\_\_  
 \_\_\_\_\_ (CODE LATER)

1 - Correct Response 2 - Incorrect Response

5. Whom do you think Cerex is for? \_\_\_\_\_  
 \_\_\_\_\_ (CODE LATER)

1 - Correct Response 2 - Incorrect Response

6. What is Cerex made from? \_\_\_\_\_  
 \_\_\_\_\_ (CODE LATER)

1 - Correct Perception 2 - Incorrect Perception

7. How did you first learn about Cerex?  29

1 - Radio 5 - Merchandiser in store/shop

2 - Newspaper 6 - Friends/neighbors/relatives

3 - Poster in store/shop 7 - Clinic

4 - Saw in store/shop Other (specify) \_\_\_\_\_  
 \_\_\_\_\_ (CODE LATER)

8. What is the first thing that comes to your mind when you hear the word "Cerex"?  30

1 - Baby cereal 4 - Cerex and the breast are best

2 - For babies 4 months and over 5 - Packet

3 - To be eaten with bowl and spoon Other (specify) \_\_\_\_\_  
 \_\_\_\_\_ (CODE LATER)

9. How often do you visit the cinema?  31

1 - Never/hardly ever 3 - Once a month

2 - Less than once a month 4 - More than once a month

66

10a. How often do you read a newspaper?

- 1 - Hardly ever/never
- 2 - Sundays only
- 3 - A few times a week
- 4 - Daily

32

b. Which newspaper? (specify) \_\_\_\_\_

11. What time of day do you like to listen to the radio the most?

- 1 - Morning
- 2 - Lunchtime
- 3 - Afternoon
- 4 - Evening
- 5 - Night
- 6 - All day
- 7 - Never/hardly ever

33

12. Has anyone in the household ever used Cerex?

- 1 - Yes
- 2 - No

34

(IF YES TO QUESTION 12., GO DIRECTLY TO PART II, QUESTION 14.)

13a. What is the major reason why you have never used nor bought Cerex?

- 1 - Did not like
- 2 - Locally produced product
- 3 - Poor packaging
- 4 - Not hygienic
- 5 - Could not afford
- 6 - Too cheap
- 7 - Preferred other products
- 8 - Poor appearance
- 9 - Not available
- 10 - Made of waste products

35

Other (specify) \_\_\_\_\_  
(CODE LATER)

13b. IF FREE RESPONSE GIVEN IN QUESTION 13.a. IS "1 - Did not like", THEN READ LIST OF ALTERNATIVES ABOVE (CHOICES 2 THROUGH 9) TO THE RESPONDENT AND CODE THE ONE WHICH HE/SHE CHOOSES AS THE MAJOR REASON.

36

(GO DIRECTLY TO PART V, QUESTION 35.)

PART II - PURCHASING PATTERN AND SOURCE

(THIS SECTION MUST BE ANSWERED BY THE PURCHASER)

14. Where do you usually get Cerex?

- 1 - Supermarket
- 2 - Neighborhood shop
- 3 - Market stall
- 4 - Clinic
- Other (specify) \_\_\_\_\_

37

(CODE LATER)

15. Have you tried to buy/get Cerex more than one time?

- 1 - Yes
- 2 - No

38

(IF NO TO QUESTION 15., GO DIRECTLY TO QUESTION 19.)

67

16. Was Cerex always available when you went back to get it?

- 1 - Yes
- 2 - No

 39

(IF YES TO QUESTION 16., GO DIRECTLY TO QUESTION 18.)

17. If Cerex was not always available, did you ask the seller/clinic to get it for you?

- 1 - Yes
- 2 - No

 40

18. Are you still buying/using Cerex?

- 1 - Yes
- 2 - No

 41

(IF YES TO QUESTION 18., GO DIRECTLY TO QUESTION 20.)

19. What is the major reason why you are no longer using Cerex?

- 1 - Not available
  - 2 - Bad taste
  - 3 - Bad smell
  - 4 - Worm infested
  - 5 - Baby disliked
  - 6 - Caused diarrhea
  - 7 - Didn't mix well
  - Other (specify) \_\_\_\_\_
- (CODE LATER)

 42

(FOR THOSE NO LONGER USING CEREX, GO DIRECTLY TO PART III, QUESTION 24.)

20. How many packets of Cerex do you use in your household per fortnight, i.e. every two weeks? (INDICATE NUMBER OF PACKETS)

  43-44

21. Did you have any trouble getting Cerex within the last month?

- 1 - Yes
- 2 - No

 45

22. Are you now buying/using less Cerex than you did when you first started to buy/use Cerex?

- 1 - Yes
- 2 - No

 46

(IF NO TO QUESTION 22., GO DIRECTLY TO PART III, QUESTION 24.)

23. Why are you buying/using less Cerex now than you were when you first started to buy/use Cerex?

- 1 - Unavailable
  - 2 - Child has grown and is using other food
  - 3 - Do not like the product anymore
  - Other (specify) \_\_\_\_\_
- (CODE LATER)

 47

PART III - PRODUCT USE

(THIS SECTION MUST BE ANSWERED BY THE PREPAREP)

(To be administered to all respondents who have used or are using Cerex. Questions, however, should be phrased accordingly, i.e. in past or present tense.)

24. FILL IN TABLE ON NEXT PAGE.

68

1 year = 12 months    4 yrs. = 48 months  
 2 yrs. = 24 months    5 yrs. = 60 months  
 3 yrs. = 36 months

**QUESTION 24: CEREX CONSUMPTION - CONSUMERS AND THE FREQUENCY AND FORM IN WHICH THEY CONSUME CEREX**

QUESTIONS	CHILDREN UNDER 5 YEARS OLD (NOT YET 60 MONTHS)					CHILDREN OVER 5 YEARS OLD (60 MONTHS AND OVER)					ADULTS				ANIMA.
	48-49	54-55	60-61	66-67	72-73	78	81	84	87	90	Mother 93	Father 96	Grand-P 99	Other 102	
a. <u>Who in this household eats or has eaten Cerex? For children under five years of age, indicate age in months; for all others who eat Cerex, place the number 1 in the appropriate column.</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. <u>How often does each person eat Cerex?</u> 1 - Three or more times a day 2 - Twice a day 3 - Once a day 4 - More than once a week 5 - Once a week or less	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. <u>In what form is Cerex eaten?</u> 1 - Porridge 2 - Tea/drink Other (specify) _____ ** (CODE LATER)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. <u>For children under two years of age, how is Cerex fed to the child?</u> 1 - Bowl and spoon 2 - Feeding cup 3 - Bottle with nipple Other (specify) _____ ** (CODE LATER)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
e. <u>How much Cerex do you use at each feeding for the child?</u> 1 - Less than 1/4 cup 2 - 1/4 cup 3 - More than 1/4 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										

69

25. Please briefly describe the steps you use to make Cerex for the CHILDREN

FREE RESPONSE: \_\_\_\_\_

(CODE LATER)

PROMPTED RESPONSE: \_\_\_\_\_

(CODE LATER)

a. FREE RESPONSE: (CODE LATER)

i. Uses boiled water

1 - Yes    2 - Did not mention

106

ii. Uses correct amount of Cerex for amount of water used

1 - Yes    2 - Did not mention

107

iii. Adds other ingredients

1 - Yes    2 - Did not mention

108

b. PROMPTED RESPONSE: (CODE LATER)

i. Uses boiled water

1 - Yes    2 - No

109

ii. Uses correct amount of Cerex for amount of water used

1 - Yes    2 - No

110

iii. Adds other ingredients

1 - Yes    2 - No

111

26. Where do you usually store open packets of Cerex between use?

1 - Safe/cupboard

3 - Tin

2 - Refrigerator

Other (specify) \_\_\_\_\_

(CODE LATER)

112

27. Have you found the instructions on the packet easy to follow?

1 - Yes

2 - No

3 - Don't read them

113

PART IV - PRODUCT ACCEPTABILITY

**(THIS SECTION MUST BE ANSWERED BY THE DECIDER)**

28. Are you satisfied with Cerex as a food for your child?

1 - Yes

2 - No

114

29. Do you think Cerex is:

1 - Better than

2 - As good as

3 - Poorer than

115

other baby cereals/porridges you have previously used?

(IF RESPONDENT NEVER USED ANY BABY CEREAL/PORRIDGE OTHER THAN CEREX, PUT 4 IN THE BOX.)

30. What, if anything, did you dislike the most about Cerex?

- 1 - Taste/Flavor
- 2 - Odor/smell
- 3 - Texture
- 4 - Color
- 5 - Packaging
- 6 - Price
- 7 - Nothing
- Other (specify) \_\_\_\_\_

116

(CODE LATER)

31. How much do you usually pay for one packet of Cerex?

117 - 119

32. Do you think the price of Cerex is:

- 1 - Too low
- 2 - Too high
- 3 - Just right

120

33. If you had a choice, what type of packaging would you prefer, bearing in mind that any other packaging will cost more?

- 1 - Plastic bag (same as)
- 2 - Tin
- 3 - Box
- 4 - Foil
- 5 - Glass Jar
- Other (specify) \_\_\_\_\_

-121

(CODE LATER)

34. If you had a choice, what size packet would you prefer, bearing in mind that the price will go up in relation to the size of the packet?

- 1 - One-half-pound (same as)
- 2 - One pound
- 3 - Two pounds
- 4 - Three pounds
- 5 - Four pounds
- 6 - Five pounds

122

PART V - CHILD FEEDING/WEANING PRACTICES

(IF HOUSEHOLD HAS NO CHILD TWO YEARS OLD OR YOUNGER, GO DIRECTLY TO PART VI, QUESTION 37.)

(THIS SECTION MUST BE ANSWERED BY THE DECIDER)

35a. What baby foods not now available on the market would you like to see sold in Guyana?

1

(CODE LATER)

Why these foods in particular? \_\_\_\_\_

2

(CODE LATER)

36. FILL IN TABLE ON NEXT PAGE

71

**QUESTION 36. FOR ALL CHILDREN UNDER TWO (2) YEARS OF AGE**

QUESTIONS	CHILDREN			
a. Age of child (months)	<input type="text"/> <input type="text"/> 3 - 1	<input type="text"/> <input type="text"/> 18 - 19	<input type="text"/> <input type="text"/> 33 - 34	<input type="text"/> <input type="text"/> 48 - 49
b. Is child being breastfed now? 1 - Yes 2 - No (IF YES, GO DIRECTLY TO e.)	<input type="checkbox"/> 5	<input type="checkbox"/> 20	<input type="checkbox"/> 35	<input type="checkbox"/> 50
c. Was child ever breastfed? 1 - Yes 2 - No (IF NO, GO DIRECTLY TO e.)	<input type="checkbox"/> 6	<input type="checkbox"/> 21	<input type="checkbox"/> 36	<input type="checkbox"/> 51
d. At what age was the child taken off the breast? (Indicate age in months)	<input type="text"/> <input type="text"/> 7 - 8	<input type="text"/> <input type="text"/> 22 - 23	<input type="text"/> <input type="text"/> 37 - 38	<input type="text"/> <input type="text"/> 52 - 53
e. At what age was the child given semi-solid/solid foods? (Indicate age in months)	<input type="text"/> <input type="text"/> 9 - 10	<input type="text"/> <input type="text"/> 24 - 25	<input type="text"/> <input type="text"/> 39 - 40	<input type="text"/> <input type="text"/> 54 - 55
f. What was the first semi-solid/solid given to the child? 1 - Plantain flour 2 - Nestum 3 - Cornmeal 4 - Cerex Other (specify) (CODE LATER)	<input type="checkbox"/> 11	<input type="checkbox"/> 26	<input type="checkbox"/> 41	<input type="checkbox"/> 56
g. How often does the child attend Clinic? 1 - Never 2 - More than once a month 3 - Once a month 4 - Less than once a month	<input type="checkbox"/> 12	<input type="checkbox"/> 27	<input type="checkbox"/> 42	<input type="checkbox"/> 57

**FOR THOSE RESPONDENTS WHO NEVER USED CEREX, GO DIRECTLY TO k.**

h. At what age was the child first given Cerex? (Indicate age in months)	<input type="text"/> <input type="text"/> 13 - 14	<input type="text"/> <input type="text"/> 23 - 24	<input type="text"/> <input type="text"/> 43 - 44	<input type="text"/> <input type="text"/> 58 - 59
i. Before Cerex, what cereals/porridges was the child given? (specify) (CODE LATER)	<input type="checkbox"/> 15	<input type="checkbox"/> 30	<input type="checkbox"/> 45	<input type="checkbox"/> 60

12



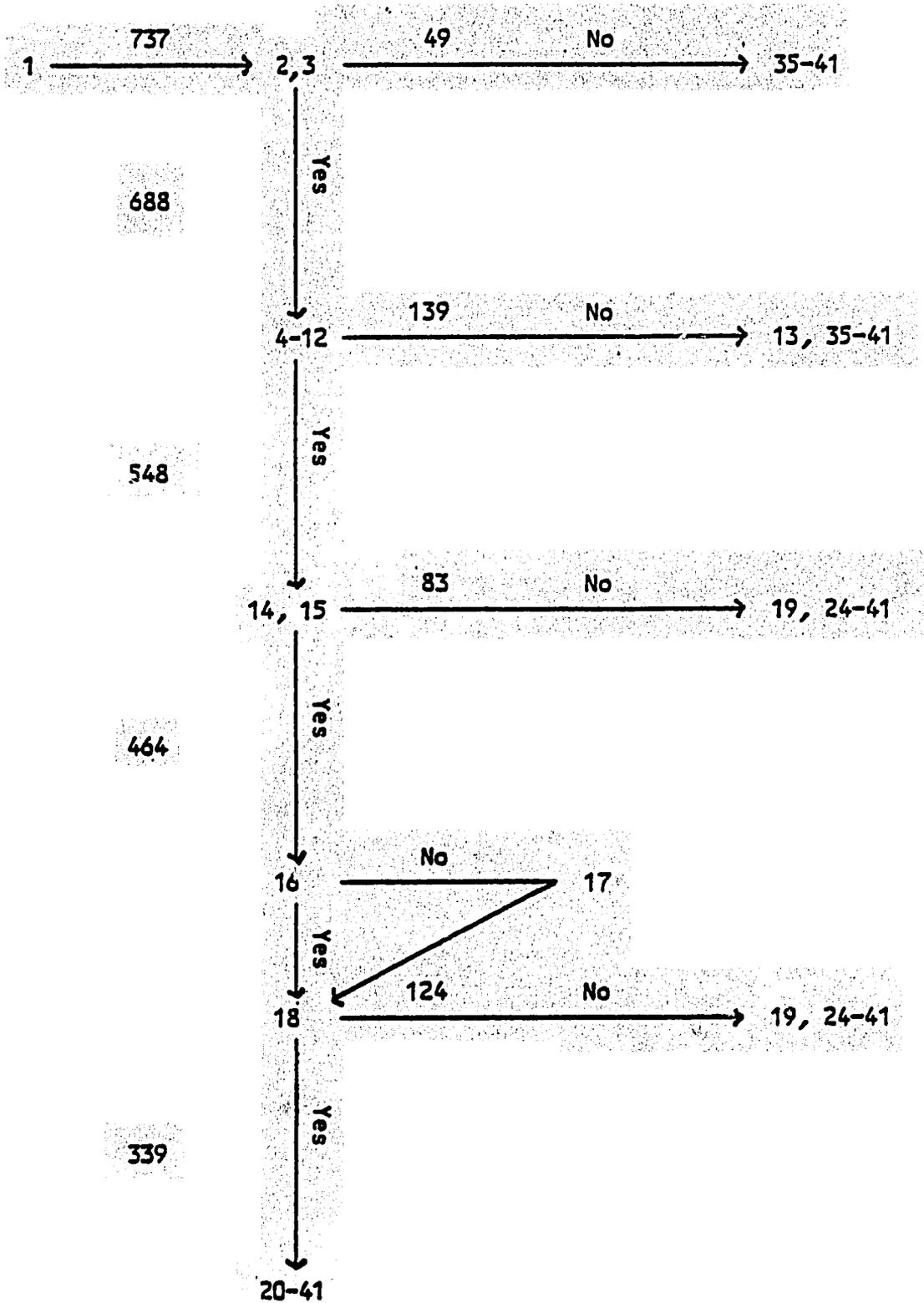


Figure A-1. Flow Diagram of the CEREX Consumer Acceptance Survey Questionnaire Indicating the Number of Expected Responses to Each Question.

24

CEREX SURVEY  
STATISTICAL REPORT

SAMPLING

1.0 Planning

The sample was designed to cover two (2) sub-groups of the civilian population:

- (i) Children five (5) years old and under.
- (ii) Children over five (5) years old and adults.

However within the first group the questionnaire was designed to obtain additional information from children two years and under.

The sample covered the whole country except for the more remote interior areas and settlements which could only be reached by air or water. Fortunately these areas account for only a small percentage of the total population and comprise a distinct sub-group which can be studied separately and apart from the rest of the country.

2.0 Sample Design

A multi-stage stratified random sample was drawn, the major distinction being between urban and rural strata. Within each major stratum, sub-strata were formed based on location.

2.1 The Urban Strata consisted of:

- (i) Georgetown
- (ii) Suburbs of Georgetown
- (iii) New Amsterdam
- (iv) Upper Demerara

75

## 2.2 The Rural Strata consisted of:

- (i) West Berbice
- (ii) East Bank Demerara
- (iii) Essequibo Coast and Islands
- (iv) West Demerara
- (v) East Coast Demerara
- (vi) East Berbice

## 3.0 Sample Selection

### 3.1 Frame

A list of enumeration districts within each strata and a list of households within each enumeration district was obtained from the Statistical Bureau of the Ministry of Economic Development and Planning. The number of persons within each household together with their sex was also obtained. Unfortunately the age distribution of household members could not be obtained. In order to maximize the probability of selecting households with children under 5 years old those households which had only one occupant were deleted from the frame.

### 3.2 Sampling Stages

- (i) Selection of Enumeration Districts (EDs) within each sub-strata.
- (ii) Selection of Households within each enumeration district (ED).

### 3.3 Sample Size

The total estimated sample size required was 388 households. Estimated (expected) non-response was taken to be 10 percent. This resulted in an overall sample size of approximately 1000 households. However since only one in every two household was expected to have a child under 5 years old the

effective sample size would be 444 households. This sample size was determined for a significance level of five (5) percent and a power of test of 90% both stated for the comparison of any difference as great as 15%.

The sample size within each strata was proportionate to the number of households within each strata (see Table 1).

The sample size was calculated by first computing the equivalent size of a simple random sample and then adjusting this size by using a design effect of 1x2. This was the size of the design effect for a similar design in a national survey which involved roughly the same population and which involved the study of factors which were fairly similar to the ones under study in the CEREX Survey (the 1975 Guyana National Fertility Survey).



R

CEREX SURVEY

Table 1. Selection of Enumeration Districts and Households.

STRATUM	No. of Households in 1970	Proportion of Households in 1970	No. of ED's in 1980	No. of selected ED's	Expected sample size (No. of Households)	Responses	
						Actual	%
<u>Urban</u>							
Georgetown	14,048	0.1164	180	30	169	124	.73
Suburbs of G/Town	18,944	0.1569	301	50	160	118	.74
New Amsterdam	3,701	0.0307	51	8	31	25	.81
Upper Demerara (Linden)	6,365	0.0528	157	26	47	34	.72
SUBTOTAL	43,108	0.3568	689	114	407	301	.74
<u>Rural</u>							
West Berbice	5,637	0.0466	106	18	48	44	.92
East Bank Demerara	6,604	0.0547	95	16	50	36	.72
Essequibo	9,941	0.0823	273	45	75	54	.72
West Demerara	13,843	0.1146	285	47	100	49	.49
East Coast Demerara	19,025	0.1574	387	64	146	113	.77
East Berbice	22,669	0.1876	497	83	179	140	.78
SUBTOTAL	77,719	0.6432	1643	273	598	436	.73
GRAND TOTAL	120,827	1.0000	2332	387	986	737	.73

GUYANA PHARMACEUTICAL CORPORATION LIMITED  
MARKETING DIVISION  
BABY WEANING FOOD EVALUATION SURVEY

INTERVIEWER INSTRUCTION SHEET FOR SAMPLING

1. Obtaining your quota of Interviews

11. Ensure that you are in the correct Enumeration District
12. Ensure that you are in the correct street.
13. Locate the address specified.
14. Ask for the name indicated next to the (A) household.
15. Several possibilities exist after this.

POSSIBILITY 1

You locate the correct household. There is a child under five (5) years old in the household and you are granted the interview.

POSSIBILITY 2

You locate the correct household, but there is no child under five (5) years in the household i.e. the (A) household.

In this case you should locate the address of the first (B) household listed and try to obtain an interview. If this household has a child under five (5) and you are granted the interview, you would have accomplished the task of conducting one (1) interview.

If the first (B) household located does not contain a child under five (5) years old, you must then locate the second (B) household listed and go in that order.

19

POSSIBILITY 3

The (A) Household cannot be located. In such a case you should make a note of this and go to the next (A) household indicated. Your Supervisor will then instruct you concerning the procedures to be adopted if one or more (A) household cannot be located.

POSSIBILITY 4

You locate the correct household (A) or (B), there is a child under five (5), but an interview is not granted.

This is what is termed a non-response. You cannot replace this household with any other household. You must go to the next (A) household, make a note of the non-response and notify your Supervisor of the non-response.

POSSIBILITY 5

After all the households listed, (A) and (B) are contacted, you still have not obtained the required amount of interviews.

In such a case you should follow the instructions of your Supervisor.

16. (B) households can only be used to replace (A) households which do not have children under five (5) years old.
17. (B) households cannot be used to replace (A) households which cannot be located or households which do not grant you an interview for one reason or another. (ask Supervisor)
18. You must select (B) households in the order in which they are listed. This means that you cannot select a (B) household simply because of convenience. For example if you select households simply because they are near to where you are, the sample will be biased. The reason for this is that the selected households will tend to be distributed near to each other.
19. The other reason why you should select (B) households in the

- order listed, is that they were selected in that order.
20. The ideal situation is one in which all and only the (A) households on the streets are interviewed.
  21. The second best situation is one in which all except one (1) of the (A) households on the sheets are interviewed and the first (B) household is interviewed.
  22. The third best situation is one in which all except two (2) of the (A) households on the sheets are interviewed and the first two (2) (B) households are interviewed and so on.
  23. It is obvious by now that the maximum number of interviews which should be completed from any one (1) sheet is the number of (A) households listed on the sheet.
  24. However if for example the number of (A) households on the sheet is seven (7), the maximum number of interviews which should be completed is seven (7).
  25. However, if one (1) household refused an interview, that is, there was one (1) non-response, the maximum number of interviews which should be completed is six (6). If there are two (2) non-responses, the maximum number of interviews which should be completed is five (5), and so on.
  26. If in one particular case, three (3) interviews were completed, this may be comprised of 3 "A's" or 2 "A's" and 1 "B" or 1 "A" and 2 "B's" or 3 "B's".
  27. Every effort must be made to locate the correct household and to obtain an interview.
  28. On your questionnaire you must indicate next to the name and address of the household, whether it is a "A" or "B" household.
  29. When the required number of interviews in any one Enumeration District is completed you should check to ensure that the total number of completed questionnaires are not more than the total number of (A) households or the maximum number of interviews possible.
  30. After the completion of each Enumeration District you should return the completed Enumeration Districts to your Supervisor.

28

Table B-1. Rural and Urban Substrata Summary.

Rural Regions	Essequibo Region 2.1	West Demerara Region 2.2	East Bank Demerara Region 2.3	East Bank Demerara Region 2.4	West Berbice Region 2.5	East Berbice Region 2.6
No. of Questionnaires to Complete	75	100	50	146	48	179
Questionnaires Completed	55	49	36	113	44	140
Number of No Children	65	73	17	56	10	204
Number of No Responses	3	3	1	2	0	0
Not Available/No House	37	15	8	27	3	67
Total Households Visited	160	140	62	198	57	411

Urban Regions	Georgetown Region 1.1	Suburbs Region 1.2	Linden Region 1.3	New Amsterdam Region 1.4
No. of Questionnaires to Complete	169	151	47	31
Questionnaires Completed	124	118	36	25
Number of No Children	171	122	51	30
Number of No Response	8	2	1	0
Not Available/No House	35	27	13	12
Total Households Visited	341	269	101	67

GUYANA PHARMACEUTICAL CORPORATION LIMITEDMARKETING DIVISIONINTERVIEW INSTRUCTIONS SHEETPRE INTERVIEW

Always fill in the initial information before commencing the interview.

Interviewer	- Your name
Date	- The day's date
Time	- The time you enter house
Schedule No.	- The number given to you by supervisor
Address	- The correct address of the respondent

Always ensure that the household has at least one (1) child between the age of four (4) months and five (5) years. If not, thank the person and go to the next specified household.

If either the decider, purchaser or preparer are not at home, interview the one who is and arrange a call back time to interview the other(s) and fill in the appropriate person, time and date at the top of the sheet.

Always introduce yourself to the respondent, in the following manner:

"Hello (Good Morning, Afternoon), My name is ....., and I represent the Consumer Relations Department of Quality Foods. We are doing a Survey to assist in the development of better food products for the people of Guyana."

Always display your interviewer Identification Card. If the respondent proves difficult - you could suggest that he or she might like to ring the Head Office number 58633 or 72629, to confirm the validity of the interviewer. Or arrange a more suitable and convenient time to call back.

No answer, or a non response is to be coded as - 0.

QUESTION 1

(a) The decider - is the person who makes the decision of what the child eats and how much.

The purchaser - is the person who buys the food for the child.

The preparer - is the person who mixes, prepares and serves the food to the child.

Please ensure that the respondent understands what you mean by these three (3) persons.

Any other person than those suggested must be written down on the appropriate line. This will be coded later. The interviewer must not fill in the box if he/she has written down an "other" response.

(b) Age - Fill in the boxes, one (1) number per box i.e. the respondent is 35 years.

3	5
---	---

If the respondent is less than 10 years i.e. 9 years fill in

0	9
---	---

(c) Ensure that you put down the last educational establishment that the respondent attended, i.e. University of Guyana, Critchlow Technical College, St. Mary's R.C. School.

PART I

To be answered by THE DECIDER ONLY

Q-2 Rotate the products when calling out the names.

Q-4,5,6 These questions will be coded later by the editors. The Interviewer must only fill in the answer in the space

84

available. DO NOT mark the box.

- Q-7
- Q-8
- Q-11
- Q-13

The emphasis is on FIRST.

The emphasis is on MOST.

The emphasis is on the MOST.

We are trying to evaluate the main reason why respondents do not use/like Cerex.

If no free answer is given, probe gently for an answer. I do not like, I don't know, are not a reason.

PART II

To be answered by THE PURCHASER

- Q-20

If more than one (1) number, it should be coded in separate boxes, i.e. 12 packets 

1	2
---	---

 - if less

than ten (10) packets it should be coded hence, 6 packets

0	6
---	---

- Q-21

Difficulty, should be interpreted as if the source that the respondent normally buys/gets their Cerex from, did not have any available.

- Q-22

If respondent answers "the same amount" this should be interpreted as NO.

PART III

To be answered by THE PREPARER.

- Q-24

TABLE.

Fill in Row (a) (across) first completely so that it is ensured you have put down all the members of the household who use Cerex. Then take each person in turn and fill in the columns (down).

Q-24c If there is an "Other" specify in the box. Although there is very little space try to write small and as neatly as

If the respondent says that the person eats Cerex in porridge form - cross check with next question, 24d, if the respondent answers Bottle - the Cerex cannot be in porridge form. In this case the interviewer must ask the respondent if she has answered 24c correctly.

Q-24e Use the cup provided for, and show the respondent so that she can visually indicate how much Cerex is used.

Q-25 Please fill in the steps in the lines allotted - this question will be coded later.

Use the following phrases to prompt.

"Did you do anything to the water?"

"How much Cerex to how much water?"

"Did you add anything to the Cerex apart from water?"

#### PART IV

To be answered by THE DECIDER.

Q-31 Fill in the numeral per box, i.e. 50 cents.

5	0
---	---

\$1.00 = 

1	0	0
---	---	---

Q-33,34 If the respondent says the same, fill in plastic bag and one-half pound respectively.

PART V

To be answered by THE DECIDER.

Q-35 Try to get the respondent to be specific in his/her answers. "Why these foods in particular" - not just because they are better, but the reasons why they are better.

Q-36 TABLE - To be filled in by all respondents who have a child under two (2) years of age - whether they use Cerex or not. One (1) column for each child under two (2) years of age.

At the end of (g) all those respondents who have never used Cerex will now go to Part VI, Q-37. Those children who used to use/or are still using Cerex will answer (h) and (i).

If the respondent answered 4 to Q-(f). Check that Q-(h) and Q-(e) are the same. These answers are supposed to be identical if Cerex was the answer to Q-(f). If they are not, repeat the questions to the respondent.

Should only be answered by those respondents still using Cerex.

PART VI

To be answered by THE DECIDER.

Q-37 The interviewer can fill this in automatically. The supervisor will tell you if you are in an urban or rural area.

87

Q-38

The numbers should be placed in separate boxes, i.e. 12

1	2
---	---

- if less than 10 place an 0 in front of

figure, i.e.

0	9
---	---

The total of children and adults (b,c,d) should add up to the same as total number of persons (a), if this does tally, repeat the question to the respondent.

Emphasize to the respondent that an approximate figure is all that is necessary and that the information is highly confidential and would not be released to any other person or establishment - it is important that we have the total amount of money coming into the house from all sources of income. If the respondent only knows weekly amount, put the amount in place provided and this will be coded later. This is a difficult question so be as polite and tactful as possible.

Q-40

If this amount exceeds the total monthly income please ask the respondent to check that they have added all the income. Be as polite as possible.

When you have completed the questionnaire, check and see if you have not missed any question that relates to the respondent(s) and then thank the respondent(s) politely for their co-operation and leave. Lengthy chats afterwards mean that less work will be accomplished.

88

INSTRUCTION SHEET

Question 1:

Introduction

Recommended list of Quality Foods products - and associated products from the same group:

Q-F Products

Cornmeal

Cerex

Table Sauce

Carambola

Associated Products

Limacol

Whizz

Buckleys

Try not to antagonize respondent - if they really want to know who is carrying out the survey and the explanation of Quality Foods does not satisfy them you will have to mention the Guyana Pharmaceutical Corporation but in conjunction with USAID. (United States Agency for International Development).

Write call back times on the top of the questionnaire at the beginning of the interview.

If more than one decider, buyer or preparer, try to interview both, if not possible interview one and put in notes that there is another person deciding/buying/preparing and say who (what relationship).

If respondent does not want to give exact age - ask for an approximate age - if he/she still does not want to give an age - guess.

If the respondent says that they do nothing - check to see if she is a housewife (sometimes people do not appreciate that housewife is an occupation).

Write down the name of school then ask respondent if the school is secondary/primary. Do not forget to ask if they have attended University or any institution for a higher level of education.

PART I, Q2: Rotate the product names.

If the Decider is not at home, ask the Buyer/Preparer the following question:

Does anyone in this household use Cerex?

If YES, then ask the questions pertaining to the Buyer/Preparer.

If NO, then arrange a call-back time to see the Decider.

PART II Q24 (Table):

Do not forget that you are asking who eats or has eaten Cerex in this household FIRST before you fill in the table. This table does not apply to those households who have never used Cerex.

Write the names of the child at the top of the table, to help you with filling in the columns.

Question 24-e

Please show the measuring cup given to you.

Question 25

Do not forget the prompted responses.

Question 36

Do not forget that Q36 (table) is only for households with children under 2 regardless of whether they eat Cerex or not.

#### IMPORTANT POINTS TO REMEMBER AT ALL TIMES

ONLY PROMPT ON Q 2, 25, 29, 39

Only prompt with Q 13 and 19 if the respondent says she does not like or she does not know.

Try not to show your personal reactions to any answers given to you by respondents.

90

REMEMBER TO MAKE NOTES OF ANY ADDITIONAL INFORMATION GIVEN BY RESPONDENTS.

Remember to give correct amounts for specified time periods e.g. \$70 per week is \$280 per month.

Try not to anticipate peoples' responses. Instead ask questions as they are written. Any variations should be noted to be checked by supervisor for accuracy. Try to learn the questionnaire so as to avoid flicking back. Remember to ask if there is a child under 2 before beginning PART V. If difficulties are experienced on income questions, give ranges. Check on figures - make sure they are neat and legible. It is very important to recheck the questionnaire after you have completed the interview to make sure all relevant sections have been filled.

Identification badges should always be worn in visible sight.

INTERVIEWING CAUTIONS

Always do each of the following: THE DO'S

1. Always follow instructions carefully.
2. Always study the questionnaire until you are familiar with all the questions.
3. Always use the brief introductory approach written into the questionnaire.
4. Always be completely neutral, informal and conscientious.
5. Always read questions just as they are written.
6. Always ask all of the questions.
7. Always ask questions in the order they appear.
8. Always record comments accurately.
9. Always interview only the correct person.
10. Always check each questionnaire to make sure you have completed every item.
11. Always inform the Director of any problems in the field as soon as possible.

THE DON'TS

1. Never interview more than one (1) person per house.
2. Never interview friends.
3. Never interview by telephone.
4. Never take a friend or anyone else along whilst interviewing.
5. Never allow any other member of family or friend of respondent, to answer any questions - Seek privacy to interview respondent on their own.
6. Never let anyone else do the interviewing for you.
7. Never reveal details of your job or of interview to others.
8. Never correct errors on someone else's advice.
9. Never falsify interviews.

92

Table D-1. Distribution of All Sample Households and Households Who Have Tried CEREX by Ethnicity, Education, Income and Location.

Classification	Sample Households					
	Total Number <sup>1</sup>			Number Who Tried CEREX <sup>2</sup>		
	Location			Location		
	Urban	Rural	Overall Sample	Urban	Rural	Overall Sample
All Households	301	436	737	251	297	548
Ethnicity						
Indian	84	302	386	63	189	252
Negro	176	114	290	157	94	251
Education						
Primary	109	298	407	97	199	296
Secondary	126	97	223	103	71	174
Higher	63	32	95	49	22	71
Income						
< 500	147	309	456	129	211	340
500-1000	94	96	190	76	70	146
> 1000	40	13	53	30	6	36

1/ Numbers used to calculate percentages in Table 16.

2/ Numbers used to calculate percentages in Table 18.

AB

Table D-2. Distribution of All Sample Individuals by Age, Ethnicity, Education, Income and Location<sup>1/</sup>.

	Location											
	Urban				Rural				Overall Sample			
	Under 2	2-5	5-16	Over 16	Under 2	2-5	5-16	Over 16	Under 2	2-5	5-16	Over 16
All Individuals	153	301	524	916	225	480	724	1320	378	781	1248	2236
Ethnicity												
Indian	44	75	108	255	152	316	446	897	196	391	554	1152
Negro	89	189	367	548	63	145	256	372	152	334	623	920
Education												
Primary	45	128	224	351	145	345	541	884	190	473	765	1235
Secondary	74	117	194	379	60	97	138	299	134	214	332	678
Higher	34	54	99	179	16	30	32	106	50	84	131	285
Income												
< 500	79	152	241	381	165	345	507	836	244	497	748	1217
500-1000	42	93	181	325	46	98	157	349	88	191	338	674
> 1000	20	36	67	143	10	17	26	68	30	53	93	211

1/ Numbers used to calculate the percentages in Tables 22, 24, 27, and 33.

Table D-3. Distribution of Sample Individuals Who Have Used CEREX by Age, Ethnicity, Education, Income and Location.

	Location				Overall Sample			
	Urban		Rural		Under 2 <sup>1</sup>	2-5 <sup>1</sup>	5-16 <sup>2</sup>	Over 16 <sup>2</sup>
	Under 2 <sup>1</sup>	2-5 <sup>1</sup>	Under 2 <sup>1</sup>	2-5 <sup>1</sup>				
All Individuals	127	209	172	258	299	467	465	329
Ethnicity								
Indian	33	50	108	148	141	198	132	121
Negro	79	132	56	97	135	229	296	218
Education								
Primary	43	97	103	174	146	271	277	216
Secondary	57	83	51	65	108	148	142	118
Higher	26	27	15	19	41	46	39	40
Income								
< 500	70	107	124	176	194	283	289	104
500-1000	30	71	37	66	67	137	120	229
> 1000	16	19	6	7	22	26	24	15

1/ Numbers used to calculate percentages in Tables 23, 28, 29, 30, and 33.

2/ Numbers used to calculate percentages in Tables 31, 32, and 33.

List of all frequency tables and cross tabulations on file at GPC from the July 1981 CEREX Consumer Evaluation Survey.

<u>Computer File Number</u>	<u>Question Number</u>	<u>Computer File Number</u>	<u>Question Number</u>
CX51AD	1A	CX535A	35A
CRX51B	1B	CX36TB	36A-G
CRX51C	1C	CRX536D	36D
CRX51D	1D	CRX536E	36E
CRX51E	1E	CRX28A	36F
CRX54	4	CX536G	36G
CRX55	5	CRX28B	36H
CRX56	6	CRX28C	36I
CRX58	8	CRX28D	36J
CX510A	10A	CRX28E	36K
CRX511	11	CRX37	37
CRX21A	12	CRX13A	38A-B
CRX24A	13	CRX11A	38B
CRX22A	15	CRX13C	38C
CRX62	16	CRX13D	38D
CRX23A	18	CRX39	39
CRX25A	19	CERX40	40
CRX26A	23	CRX41	41
CREX12	24B	CRX12Y	20/24B
CRX27A	25	CRX12B	20/24B
CRX526	26	CX702U	20/24B
CRX527	27	CX701U	20/24B
CRX528	28	CX698U	20/24B
CRX529	29	CRX68	20/24B
CRX530	30	CRX697U	20/24B
CRX53	31	CX705U	24B/C/D/E
CRX532	32	CX703U	24B/C/D/E
CRX533	33	CX714U	24B,C/1C, * 1D, 39
CX534	34		

9/10

<u>Computer File Number</u>	<u>Question Number</u>	<u>Computer File Number</u>	<u>Question Number</u>
CX712U	24B,C/1C, * 1D, 39	CRX34B	1B/18
CX711U	24B,C,D,E/ * 1C, 1D, 39	CRX34C	1C/18
CX710U	24B,C,D,E/ * 1C, 1D, 39	CRX34D	1D/18
CX707U	24B,C,D,E/ * 1C, 1D, 39	CRX34E	39/18
CX706U	24B/C/D/E * A6364	CRX34F	41/18
A6364	24B,C/1C, 1D, 39	CRX35A	36B/24B
A6364U	24B,C/1C, 1D, 39 *	CRX35C	36D/24B
CX696U	24B/C/D/E	CRX35D	36E/24B
CX694A	24B/C/D/E	CRX36A	39/41
CX694U	24B/C/D/E *	CRX36B	39/40
CX692A	24B/C/D/E	CRX36C	41/40
CX692U	24B/C/D/E *	CRX41A	7/8
CX692A	24B,C,D,E	CRX41B	7/9
CX692U	24B,C,D,E *	CRX41C	7/10A
C6364	24B,C,D,E/ 1C, 1D, 39	CRX41D	7/11
C6364U	24B,C,D,E/ * 1C, 1D, 39	CRX42A	7/4, 5, 6
CRX12X	24B/D/E	CRX43A	9/4, 5, 6
CRX11B	24A/B	CRX44A	10A/4, 5, 6
CRX12A	24B/D/E	CRX44B	10B/4, 5, 6
CX11BA	24A/B/18	CRX45A	4/11
CX11BB	24A/B/18 *	CRX45B	5/11
CRX33A	12/1A	CRX45C	6/11
CRX33B	12/1B	C6567U	4, 5, 6, 7, 8, 9, * 10A, 11/1C, 1D, 39
CRX33C	12/1C	CX6567	4, 5, 6, 7, 8, 9, 10A, 11/1C, 1D, 39
CRX33D	12/1D	CX708U	12, 15, 18/1C, * 1D, 39
CRX33E	12/39	CX691A	36A/1C, 1D, 39
CRX33F	12/41	CRX61	19/15, 18
CRX34A	1A/18	CX695U	35A/35B
		CRX46A	35B/7

97

<u>Computer File Number</u>	<u>Question Number</u>
CRX46B	35B/9
CRX46C	35B/10A
CRX47A	19/27
CRX47B	30/27
CRX48A	19/25
CRX48B	30/25
CRX5C3	36A/36B
CRX66	39/40
CRX5C2	31/37
CRX5C1	14/37
CRX610	38/18
CRX69	38/12
CX693A	38B/1C, 1D, 39
CX693B	38C, D/1C, 1D, 39
CX709U	38D/1C, 1D, 39

\* Urban/Rural Summary Sheets