# Children Rate the Summer Food Service Program 

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Food waste has been identified as an issue in the Summer Food Service Program. National studies conducted to identify the cause have typically questioned only program administrators and parents, not the children. We sought to determine reasons for plate waste from the children's perspective. Plate waste was assessed by direct observation, nutrient content was evaluated, and children were asked what a typical lunch at home might be. Children graded the menus and participated in either focus groups or individual interviews. A total of 203 individual interviews and two focus groups were completed. Results showed that more traditional menu items such as peanut butter and jelly sandwiches received higher marks than did trendy items such as wraps, tacos, and pita sandwiches. Taste appeared to be the predominant factor influencing how children rated a meal. Using the National School Lunch Program as a basis of comparison, we found that the meals as served met most Federal nutrition guidelines, but meals as consumed fell short in calcium, iron, and vitamin C for selected age groups. Based on what children reported they might eat at home if not participating in the Summer Food Service Program, we found that 18 percent of the children reported lunch meals that could be evaluated as inadequate. Food waste was estimated to be 38 percent of calories overall or 32 percent excluding condiments. This study provides a unique perspective on strategies to reduce plate waste, increase meal consumption, and improve nutrient intake of the participants in the Summer Food Service Program.

The U.S. Department of Agriculture (USDA) administers a Summer Food Service Program that provides low-income children up to age 18 with nutritious meals and snacks when school is not in session (USDA, 2003). Meals are either prepared onsite or delivered by vendors to summer campsites, nonprofit organizations, and other agencies that offer summer programs for children. On an average weekday in the summer of 2002, over 3 million children were served (Food and Research Action Center, 2003). However, food waste and underutilization have been identified as issues in this program (Gordon et al., 2003). Although national studies have been conducted to identify the root causes, the researchers typically have questioned program administrators and parents. Based on a literature review, we found that no one has discussed with the children
what could be done to improve their consumption of these meals and why they might not be participating.

## Background

While most of the American population is food secure, hunger and food insecurity continue to be a problem for nearly 13 million U.S. children (Center on Hunger and Poverty, 2002). The latest Status Report on Hunger and Homelessness by the U.S. Conference of Mayors found a 17-percent increase in requests for emergency food assistance among families with children in 2002 (U.S. Conference of Mayors, 2002). A recent survey by America’s Second Harvest indicated that of the 23.3 million people they served in 2001, 9 million were children (Kim, Ohls, \& Cohen, 2001). In Delaware,

49 percent of the members of households served by the Food Bank of Delaware are children. Of those, 80 percent were food insecure and 32 percent had experienced hunger (Food Bank of Delaware, 2003). Six percent of the clients of the Food Bank of Delaware said their children have had to skip meals because there was no money to buy food.

One of the objectives of Healthy People 2010 is to increase food security among U.S. households and in doing so, reduce hunger (U.S. Department of Health and Human Services, 2000). The Summer Food Service Program helps to address the issue of child hunger. However, underutilization is an ongoing problem. During the 2002 school year, 15 million children received free and reduced-price lunches on an average school day, yet only 3 million of these children were reached by the Summer Food Service Program (Food Research and Action Center, 2003). Although Delaware ranks sixth nationwide in program use, only 29 percent of 40,000 eligible children participate.

A 2002 report to Congress by the USDA’s Economic Research Service (ERS) summarized a review of literature on plate waste in school nutrition programs and reported that almost 12 percent of calories from food served in the National School Lunch Program were uneaten (Buzby \& Guthrie, 2002). This plate waste represents a direct economic loss of over $\$ 600$ million and does not include the value of lost nutrition and health benefits. Plate waste figures for the ERS report were derived primarily from a large, national representative study conducted in 1991-92. A more recent national study of the Summer Food Service Program specifically indicated that children wasted about one-third of the calories and nutrients served, with only 11 percent of meals
being consumed completely (Gordon et al., 2003). Thus, it is not surprising that program sponsors and administrators in Delaware have voiced concerns about plate waste and have endorsed further study to address the problem.

Student input has been suggested as a strategy to improve the quality, appearance, and acceptability of school meals (Buzby \& Guthrie, 2002). While many schools have advisory committees that involve students, the effect of their efforts to reduce plate waste is unreported: No studies were found that reported children's input regarding the Summer Food Service Program. However, in the national Summer Food Service Program survey, site supervisors were asked to indicate their perceptions of children's food likes and dislikes (Gordon et al., 2003). They reported that pizza and ham sandwiches were the most liked meat/ meat alternatives. Other favorites were chicken nuggets or chicken strips, hamburgers, and cheeseburgers. Chocolate milk was preferred 14 to 1 by children, according to site supervisors. The most disliked items were bologna sandwiches, followed by tacos and other Mexican-style entrees, roast beef, and fish.

One of the goals of the Summer Food Service Program is to provide nutritious meals and snacks. To ensure this, the regulations specify a meal pattern but not specific nutrient requirements. To evaluate the nutritional composition of the meals for this study, we adapted the standards of the National School Lunch Program as a basis of comparison. Over a week, the lunch meal had to provide, on average, one-third of the Recommended Dietary Allowance (RDA) for key nutrients including protein, calcium, iron, vitamin A, and vitamin C. Although nutrient standards are based on the 1989 RDA, our adaptation was modeled after a 2003 ERS evaluation of the Summer Food

Service Program in which the updated RDA and Adequate Intake (AI) values were used as bases for comparison (USDA, 2003). According to recommendations of the School Meals Initiative (USDA, 2001), the meals must meet the caloric needs of growing children, limit calories from fat to 30 percent or less, and limit calories from saturated fat to less than 10 percent (averaged over a week and not on a per-meal basis).

If meals are not consumed, no matter how well planned the menu, nutritional benefits are not obtained. However, even a partially consumed meal may increase a child's nutrient profile when compared with a potentially skipped or non-nutritious meal at home. The Summer Food Service Program meal pattern requirements are federally mandated, and a lunch meal must contain the following to be reimbursable: one serving of fluid milk ( 8 oz ), two or more servings of vegetables and/or fruits ( $3 / 4$ cup total), one serving of grains or bread ( $1 / 2$ cup or 1 slice), and one serving of meat/ meat alternative (2 oz) (USDA, 2002).

Federal reauthorization of the child nutrition programs is an ongoing process. To provide a rationale to maintain current funding levels, or advocate for increased funding, outcome evaluation is crucial. In today's economic climate, policymakers are looking more critically than ever at outcomes before authorizing Federal dollars for any programs. The purpose of our evaluative study was to examine underutilization, nutrient outcomes, and plate waste in the Summer Food Service Program from the children's viewpoint. We also obtained some input from site supervisors. By collecting data on what a typical at-home lunch meal might be when children did not participate in the Summer Food Service Program, we
were able to make qualitative comparisons with the Summer Food Service Program meals. Information about at-home lunch meals was also intended to serve as a potential indicator of hunger.

## Methods

## Site Selection and Sample

The Food Bank of Delaware serves as one of the State sponsors of the Summer Food Service Program. A nutrient analysis was conducted on each day of its 2 -week cycle menu ${ }^{1}$ (10 days) and repeated to account for variations resulting from menu substitutions ( $\mathrm{N}=20$ days).

Site selection was based on the participation of 50 children (a minimum) to ensure adequate sample size for interviews. All six urban feeding sites that met this criterion were used for the evaluation: four sites for individual interviews and two sites for focus group interviews. Each of the individual sites was visited for 5 consecutive days. The focus group interview sites were visited once. Site supervisors were contacted and invited to participate in the project. A $\$ 50$ gift certificate was offered, as an incentive to supervisors, for use in onsite activities. The project was conducted in only one of the three Delaware counties, because a second county had a sponsor other than the Food Bank of Delaware and the third county did not have sites large enough to meet the criterion for inclusion.

## Data Collection

One interviewer collected all the data.
The Summer Food Service Program site supervisor at each study site introduced the interviewer to the

[^0]children and explained the purpose of the visit. The interviewer was positioned near the waste cans so that as a child approached the can to discard the lunch bag, the interviewer could examine the bag for any remaining food items. Standardized portion sizes, defined by quartile ( $0,1 / 4,1 / 2$, $3 / 4,1$ ), were used in recording estimated food intake and plate waste on a form developed specifically for the project. The children were then invited to participate in an interview about their lunch. Children of both genders (ages 6 to 15 years) participated.

One-on-one interviews, with the aid of a seven-item questionnaire developed for this project, were conducted to collect data on acceptability of foods served, alternative menu ideas, reasons for leftover foods, and types of foods that might be eaten for lunch at home. The children were told of the confidential nature of the interviews and of their right to decline to answer a question and to terminate the interview. Children were also told that declining to participate would not result in negative consequences for them. Interviews lasted for about 3 to 5 minutes each. Participant responses were recorded and analyzed by topic for common themes or patterns.

Focus groups, addressing similar questions to those in the one-on-one interviews, were conducted by a trained leader who used standardized procedures for conducting focus groups with children (Nabors, Ramos, \& Weist, 2001; Heary \& Hennessy, 2002). The focus group leader introduced herself and allowed the children to introduce themselves. The leader explained the purpose and procedures for discussing items, reminded the children that there were no right or wrong answers, and used a script/ discussion guide to direct the sequence of the questioning. This technique was used to promote flexibility, because the

> As with the rest of the population, taste appears to be the predominant factor for children in rating a meal highly and eating it. . . . Food quality . . . was also important.
group discussion was likely to flow naturally while the guide ensured that all important topics were covered and allowed unanticipated information to be obtained.

Audiotaping was the primary means of capturing focus group conversation. Content was analyzed by topic to extract meaning from the frequency and the manner in which topics were discussed. Common themes or patterns of commentary were identified independently by two investigators and coded as recommended by Morgan (1997).

Supervisors at each site were asked verbally whether they would like to comment on the food service and lunch items. The interviewer recorded supervisors' comments, as well as her general observations related to the lunch meal or service.

## Data Analysis

The Statistical Package for Social Sciences (Version 6.14) was used to analyze the data. While frequency distributions and measures of central tendency were used to analyze demographic and organizational data, the Food Processor ${ }^{2}$ (Version 7.8) was used to estimate nutrients in the menus and nutrients consumed, based on plate waste. Chi-square tests were used to test for association between mean ratings (by gender and age groups). The assigned significance level for all of these tests was 0.05 . Qualitative information from interviews was used to present a different "face of reality." Transcribed tapes from focus group interviews and information recorded from scripted one-on-one interviews were used to interpret data, look for patterns, and make comparisons and contrasts with the quantitative data.

[^1]Table 1. Mean nutrient content of 20 days' menus served by the 2002 Summer Food Service Program of the Food Bank of Delaware, as a percentage of RDA/AI ${ }^{1}$

| Age/gender group | Carbohydrate RDA | Protein RDA | Vitamin A RDA | Vitamin C RDA | Calcium AI | $\begin{aligned} & \text { Iron } \\ & \text { RDA } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | --- Mea | cent ---- |  |  |
| Children |  |  |  |  |  |  |
| 4-8 years | 65.1 | 144.8 | 161.8 | 131.4 | 54.1 | 33.8 |
| Males |  |  |  |  |  |  |
| 9-13 years | 65.1 | 80.9 | 107.9 | 73.0 | 33.3 | 42.3 |
| 14-18 years | 65.1 | 52.9 | 71.9 | 43.8 | 33.3 | $30.7^{2}$ |
| Females |  |  |  |  |  |  |
| 9-13 years | 65.1 | 80.9 | 107.9 | 73.0 | 33.3 | 42.3 |
| 14-18 years | 65.1 | 59.8 | 92.4 | 50.6 | 33.3 | $22.5{ }^{2}$ |

${ }^{1}$ While standards for school meals are based on the 1989 RDA, the evaluation in this study was based on the updated Dietary Reference Intakes. The AI was used as the nutrient standards for calcium because an RDA is not available.
${ }^{2}$ Did not meet one-third of the RDA.

## Results and Discussion

## Nutritional Analysis of Menus

Although a 2-week menu cycle was utilized, implementation exactly as planned did not occur. Substitutions were made almost daily because of production issues such as the availability of menu items or technical problems such as equipment breakdown. (For example, a malfunctioning refrigerator on one day led to spoilage of the entrée; thus, a substitution was made.) Therefore, the menus that were actually served $(\mathrm{N}=20)$ were used for nutritional analysis.

Analysis of 20 days of menus revealed that, on average, the lunch meals-as served-met one-third of the RDA or Adequate Intake (AI) for all the required nutrients across all age and gender groups, with the exception of iron for the 14 - to 18 -year-old males and females (table 1). Whereas the mean percentage RDA/AI for all age and gender groups was 65 for carbohydrate, the mean percentages for protein ranged from 52.9 to 144.8; for vitamin A, 71.9 to 161.8 ; for
vitamin C, 43.8 to 131.4; for calcium, 33.3 to 54.1; and for iron, 22.5 to 42.3.

Actual mean nutrient consumption, based on 203 plate-waste observations of the 20 menus as served was below the recommended levels for both calcium and iron in both genders across each age group (table 2). In addition, vitamin C intakes were below the recommended levels for 14- to 18-year-old males and females, and protein intake was below recommendations for the males in this age group. While the quartile system of estimating intake may be thought to affect the nutrient composition data, the use of a single trained observer to collect the data should have limited the potential for this error.

Percentage of calories from fat in the menus-as served-(33 percent) exceeded the Dietary Guidelines recommendation of 30 percent maximum (table 3). Percentage of calories from saturated fat (11 percent) also exceeded the guideline: less than 10 percent. These recommendations are meant to be based on an entire day's calorie intake and not a single meal.

However, the School Meals Initiative requires that the weekly mean for the lunch meal meet this guideline. Actual consumption of calories ranged from 440 to 587 across the age groups (table 4). The wide discrepancy observed between the percentage of kcal consumed from fat by older males (18 percent) and females (41 percent) can be attributed to differences in food items that were wasted (e.g., boys tended to use less mayonnaise as a condiment).

## Grading of the Menu

Children were asked to rate each different lunch menu based on a grading scale of "A" to " F ": excellent to failing. "Grades" were coded on a 4-point scale: $\mathrm{A}=4$ points to $\mathrm{F}=0$ points. The menus, overall, were given a grade of B-. The lowest rating, a $\mathrm{D}+$, was given to the meal consisting of a bologna and cheese sandwich; the highest rating, a $\mathrm{B}+$, was given to the meal consisting of a peanut butter and jelly sandwich. Although the girls, compared with the boys, gave the meals a higher mean rating ( 2.79 vs. 2.74), the difference was not significant. Similarly, younger children (less than age 10) gave the menus a higher mean rating (5.76) than did older children (2.67), but the difference was not statistically significant (data not shown).

## Personal Interviews

During the one-on-one interviews, children were asked how they liked the day's lunch meal, which food they liked best and least on that menu, why they did not finish the lunch if they had not, and what would they have had for lunch that day if they had eaten at home. Other comments were also solicited. The three top-rated menu items were apple juice, chocolate milk, and chicken nuggets. The three lowest rated menu items were carrots, wraps,

Table 2. Mean nutrient content of 203 meals consumed in the 2002 Summer Food Service Program of the Food Bank of Delaware, as a percentage of RDAIAI

| Age/gender group | N | Carbohydrate RDA | Protein RDA | Vitamin A RDA | Vitamin C RDA | Calcium AI | $\begin{aligned} & \text { Iron } \\ & \text { RDA } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Mean per | ent --- |  |  |
| Children |  |  |  |  |  |  |  |
| 4-8 years | 82 | 44.0 | 100.6 | 64.8 | 66.6 | $31.7^{1}$ | $23.8{ }^{1}$ |
| Males |  |  |  |  |  |  |  |
| 9-13 years | 73 | 40.7 | 53.8 | 40.8 | 40.9 | $20.2{ }^{1}$ | $27.3{ }^{1}$ |
| 14-18 years | 7 | 41.1 | $29.7{ }^{1}$ | 56.1 | $24.0{ }^{1}$ | $20.7{ }^{1}$ | $16.9{ }^{1}$ |
| Females |  |  |  |  |  |  |  |
| 9-13 years | 38 | 41.4 | 50.0 | 53.5 | 46.6 | $16.4{ }^{1}$ | $27.5{ }^{1}$ |
| 14-18 years | 3 | 52.6 | 41.3 | 49.1 | $4.1{ }^{1}$ | $12.6{ }^{1}$ | $17.8{ }^{1}$ |

${ }^{1}$ Did not meet one-third of the RDA/AI.
and apples. Pitas were also disliked. The children said that the major reason for not finishing lunch (and hence contributing to plate waste) was their dislike of the foods served. Other reasons, though not cited as often, were feelings of fullness, lack of hunger because of medications, hot weather decreasing their appetite, and wanting to save foods to eat later. The children were asked, "What might you have had for lunch today if you didn't come here?" About 18 percent mentioned bread and mayonnaise, noodles, cereal with or without milk, a piece of fruit, or nothing.

## Focus Group Interviews

The first focus group, consisting of four males and two females who were 8 to 14 years old, was conducted at a YMCA. After introductions and an ice-breaker activity, the children were asked to respond to a series of seven questions and were also allowed free-flow comments. The questions addressed the entire menu cycle, rather than any specific day. The children's favorite foods-from all the summer lunches-were chicken nuggets, tuna fish sandwiches, and fruit (specifically apples and bananas).

Table 3. Mean calorie, macronutrient content, and fat composition of 20 lunch menus served by the 2002 Summer Food Service Program of the Food Bank of Delaware

| Characteristic | Amount |
| :--- | :---: |
| Kilocalories | 668 |
| Carbohydrate (g) | 85 |
| Protein (g) | 28 |
| Fat (g) | 24 |
| $\quad$ Saturated fat (g) | 8.42 |
| Monounsaturated fat (g) | 7.49 |
| Polyunsaturated fat (g) | 3.1 |
| Kcal from carbohydrate (\%) | 51 |
| Kcal from protein (\%) | 16 |
| Kcal from fat (\%) | 33 |
| Kcal from saturated fat (\%) | 11 |

Table 4. Mean calorie and macronutrient content of 203 lunches consumed in the 2002 Summer Food Service Program of the Food Bank of Delaware

| Age/gender <br> group | N | Kilocalories | Cholesterol <br> $(\mathrm{g})$ | Protein <br> $(\mathrm{g})$ | Fat <br> $(\mathrm{g})$ | Cholesterol <br> $(\%)$ | Kilocalories from <br> Protein <br> $(\%)$ | Fat <br> $(\%)$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Children <br> 4-8 years | 82 | 440 | 57 | 19 | 15 | 54 | 17 | 29 |
| Males |  |  |  |  |  |  |  |  |
| 9-13 years | 73 | 398 | 53 | 17 | 13 | 57 | 17 | 26 |
| 14-18 years | 7 | 375 | 53 | 15 | 12 | 69 | 13 | 18 |
| Females |  |  |  |  |  |  |  |  |
| 9-13 years | 38 | 411 | 54 | 17 | 15 | 52 | 16 | 32 |
| $14-18$ years | 3 | 587 | 68 | 19 | 28 | 46 | 13 | 41 |

The food most disliked by the children was sliced beef because it seemed "raw." Cheese on the sandwiches was viewed as being hard to remove if disliked, because it "stuck" to the bread. Bread was reported as being soggy at times; milk was reported as being "outdated" at times.

When the children were asked what they would like to see added to the menu, they mentioned the following items: cherries, chips, grapes, melon, fruit "leathers," pizza, subs, granola bars, peanut butter and jelly with graham crackers, and hot meals. The children also suggested ways to improve the current menu items: pack sandwiches so they are not always squashed; be sure the milk is cold; include less cheese on everything, especially pitas; and always have dressing for vegetables.

Asked for their perspective on why some children did not come to the lunch program, the children said it was too hot to walk to the site, some parents did not have the money for camps, and some children did not like the food. When asked what could be done to attract more children to the program, the children said offer better menus and have the children who come (and like it) tell their friends about it.

A recent study of the National School Lunch Program concluded that children from two-parent households are more likely to participate than those from single-parent households (Dunifon \& Kowaleski-Jones, 2003). This may also be a factor for States to explore. It has been suggested that single parents have less time and energy to learn about feeding programs. They may also have less information; thus, their children may not participate as much.

The second focus group was conducted at a summer performing arts program. Five females and two males who were 6 to 10 years old participated. The same protocol as described for the first focus group was used in conducting the second focus group. The children's favorite foods among all of the summer lunches were peanut butter and jelly sandwiches, chicken nuggets, tuna fish sandwiches, and apples. Although apples were a low-rated item in the one-on-one interviews, small numbers in the focus groups might have accounted for this inconsistency.

The foods most disliked by the children were "anything that was soggy" (like the taco), squashed, or frozen (some of the sandwiches and the nuggets). Even tuna was frozen sometimes. The children stated that
the use of "so much 'meat and cheese' sandwiches" became boring. They also asked that marmalade not be sent for peanut butter and "jelly" sandwiches. Turkey sandwiches and tacos were also rated as disliked choices.

When asked what they would like to see added to the menu, the children mentioned the following items: macaroni and cheese; shrimp and lobster; fried chicken; barbequed chicken; vegetables such as peas, collard greens, celery, salads, broccoli, and tomatoes; and different fruit such as peaches, plums, grapes, cherries, or fruit cups. The children said that finding a way to warm the nuggets, packing sandwiches so they are not always squashed, being sure the milk is cold, and using less cheese on everything, especially pitas, would improve the current menu items.

The children were asked for their perspective on why some children did not come to the lunch program, or what could be done so that more children would come. Their only response was "serve more fried chicken and ribs." No menu items were mentioned as being unfamiliar or never having been eaten before by either the first or second focus group.

## Site Supervisor Comments and Interviewer Observations

The interviewer informally solicited site supervisors' comments about the meals or program in general by asking for any feedback they might like to provide. The main issues for the supervisors related to (1) maintaining appropriate food temperatures during holding periods and (2) other programs such as summer or Bible schools competing with the Summer Food Service Program.

Interviewer observations often paralleled the children's comments and related to food-quality issues such as the condition of the sandwiches or difficulty with service such as having children prepare peanut butter and jelly sandwiches themselves or the children not being able to peel oranges. The interviewer also noted that wraps were not well accepted by the children. Although interview observations are not typically included, we believed they provided an additional perspective to the evaluation for the program sponsor.

## Conclusions and Recommendations

The children's responses regarding the Summer Food Service Program provided insight about their perspective on non-participation and unique insights into plate-waste issues and menu-item generation. As with the rest of the population, taste appears to be the predominant factor for children in rating a meal highly and eating it. This result is similar to Baxter, Thompson, and Davis's study (2000), which found that school lunch meals were likely to be consumed completely when children like the foods "a lot." Food quality (warm milk, soggy bread, squashed sandwiches, etc.) was also important.

The children we interviewed thought that serving foods that were tasty and well liked would be the key to increasing program participation.

The more traditional menu items, such as peanut butter and jelly sandwiches, received higher marks than "trendy" items such as wraps, tacos, and pita sandwiches. Chicken nuggets were popular, while bologna sandwiches were almost unanimously disliked. Chocolate milk was preferred over white milk. Thus, to reduce plate waste, it might be more advantageous to use a shorter menu cycle, such as 5 or 6 days and to rely on menu items that the children prefer. It might also be reasonable to obtain feedback from the site supervisors at the end of a 1-week cycle that could be used to determine which entrée items were the most well received.

Another idea might be to conduct some "taste panels" with the children or take them on field trips to vendor sites where the meals are prepared and solicit their feedback. This may foster a feeling of "ownership" for the lunch program and promote better acceptance of menu items. Menu ideas could also be solicited from local school lunch program supervisors. They may be a useful resource for providing insights into foods that are favored by schoolaged children in their programs. The national study (Gordon et al., 2003) also suggests nutrition education might encourage children to eat more variety and encourage supervisors to improve menus to reduce plate waste. Attention should always be given to qualitycontrol issues as well. Methods of packing sandwiches, thawing items, and temperature control need to be monitored.

The meals offered by the Food Bank of Delaware's Summer Food Service Program complied with the nutritional guidelines of the Federal program.

Nationally, about one-third of calories in the Summer Food Service Program are estimated to go uneaten. In the Delaware Summer Food Service Program, food waste was estimated to be 38 percent overall and 32 percent when condiments are excluded, thus supporting the national finding. However, only about 12 percent of calories in the National School Lunch Program are estimated to go uneaten, and this discrepancy between the two programs warrants further study.

In our sample, 5.4 percent of the children indicated that they would have had nothing to eat for lunch if they were not attending the Summer Food Service Program; another 12.2 percent would have had a nutritionally inadequate lunch if they had eaten it at home. Outreach to parents, particularly targeting single-parent families, with information regarding the program may help improve participation. To assist with Summer Food Service Program outreach efforts, the ERS ${ }^{3}$ has recently developed the Summer Food Service Program Map Machine, a Web-based tool to help States determine whether program sites are located in areas of highest need and to help identify underserved areas.

Considering children's taste preferences when developing menus for the Summer Food Service Program should lead to reduction in plate waste and may favorably influence participation. Other States might build upon our pilot study by adapting the tools ${ }^{4}$ we developed. Ongoing evaluation and monitoring of individual summer food service programs is always warranted in a continual effort to minimize plate waste and maximize program participation.

[^2]
## Acknowledgments

This project was made possible by a grant from the University of Delaware and with the participation of the Food Bank of Delaware.

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[^0]:    ${ }^{1}$ Menu information available upon request from the authors.

[^1]:    ${ }^{2}$ The Food Processor computer software program allows quick and accurate dietary intake analysis and includes a comprehensive food database.

[^2]:    ${ }^{3}$ www.ers.usda.gov/data/sfsp.
    ${ }^{4}$ Available upon request from the authors.

