



# Technical Notes

10 Cents a Meal for Michigan's Kids and Farms, administered by the Michigan Department of Education, matches what participating schools and other non-school sponsors spend on Michigan-grown fruits, vegetables, and dry beans with grants of up to 10 cents per meal. This brief is part of the *10 Cents a Meal 2021-2022 evaluation results: Amplifying Impact with More Michigan Farms and Foods*.

**These technical notes provide additional background and information on the analyses of program data for this evaluation report of 10 Cents a Meal for Michigan's Kids and Farms (10 Cents) for the 2021-2022 year. The information below is organized in order of reference to the individual summaries within the full report, and some information may be relevant to multiple summaries.**

## Evaluation Surveys and Response Rates

Each of the electronic survey links were emailed to grantees by program administrators from the Michigan Department of Education (MDE), and response collection lasted on average for 6 weeks. Reminder emails to nonrespondents from staff at MDE helped to reach relatively high response rates, particularly in August when many food program managers are on summer break.

Response rates varied for the evaluation surveys administered throughout the year. The first round of 10 Cents grantees, those that participated since the start of the program year, completed surveys in October, January, and August. In the spring, a second round of grantees were awarded funds, and they completed surveys in April and August. For the purposes of evaluation, as well as for easier comprehension of results, responses from the April survey were aggregated and analyzed with the previous surveys (October and January) because the survey questions were the same. The April survey had all the same questions from the October survey so the total number of responses for the October survey also includes responses from April. Additionally, there was one question from the January survey about food preparation methods that was also in the April survey, so the total responses for this question include both January and April responses. It should be noted that although second round grantees responded to the same questions as the first round grantees, they completed survey questions at different times of the year, and this timing could have influenced their responses. The last survey in August was the only survey that all grantees took in the same time period.

For the full list of response rates to each survey question, please refer to the summary, [2021-2022 10 Cents Evaluation Survey Questions and Response Rates](#).

**Table 14: Evaluation Survey Response Rates for 2021-2022**

	Survey month		
	October	January	August
Total grantees who received the survey	257	228	257
Number of responses	224	178	217
Number of questions	18	11	18
Response rate	87%	78%	85%

*Note.* Second round grantees completed a survey in April and their responses were aggregated into the October survey because they were the same questions. There was one additional question in the April survey that was also in the January survey. The last survey in August was the only survey that all grantees took in the same time period. See Technical Notes for more information.

## Open-Text Response Analysis

Similar to surveys in previous years, there were several evaluation questions that were open-ended to allow for written responses from grantees. Within the report, we referred to the process of coding of qualitative responses as categorizing. A single grantee's response could have multiple themes mentioned within it, so the number of themes is often higher than the actual number of responses. Because the same theme could not be duplicated within a grantee's response, the number of mentions per theme is also indicative of the number of different grantees who stated the theme. Any feedback from participating food program managers (FPMs) that included identifying information was removed to maintain anonymity. The evaluation questions that had open-text responses can be found in the summary, [10 Cents Evaluation Survey Questions and Response Rates in 2021-2022](#).

## Product Naming Guide

A product naming guide used for 10 Cents evaluation in previous years was used again to streamline the categorization of products reported by FPMs into product types (e.g., zucchini as summer squash, Concord grapes as grapes). If a grantee reported the same product more than once during the year, the duplicated response was removed from analysis of products FPMs purchased and tried for the first time. If a grantee reported a new product that had not been reported in previous years, it was added to the guide. For this year, both okra and mulberries were added.

If a grantee reported a product that could not be categorized because it was unspecified (ex. berries, squash, roots), it was labeled accordingly. This included "Fruit/Berries/Root vegetable/Vegetable, other or unidentifiable." If a product blend or melody of vegetables was reported, it was labeled as a "Vegetable blend, Identifiable."

These product types were then assigned to a product type category: fruits, vegetables, or dry beans. For dry beans, varieties are distinguished (e.g., pinto or black beans). See Table 15 for the full breakdown of fruit and vegetable product types.

**Table 15: Fruit and Vegetable Types for the Evaluation of 10 Cents**

Product Types by Category		
FRUITS		
<ul style="list-style-type: none"> <li>— Apples</li> <li>— Apricots</li> <li>— Berries, other or unidentifiable</li> <li>— Blackberries</li> <li>— Blueberries</li> <li>— Cherries</li> </ul>	<ul style="list-style-type: none"> <li>— Cranberries</li> <li>— Grapes</li> <li>— Melons</li> <li>— Mulberries</li> <li>— Nectarines</li> <li>— Peaches</li> <li>— Pears</li> </ul>	<ul style="list-style-type: none"> <li>— Plums</li> <li>— Raspberries</li> <li>— Saskatoons</li> <li>— Strawberries</li> <li>— Watermelon</li> <li>— Fruit, other or unidentifiable</li> </ul>
VEGETABLES		
<ul style="list-style-type: none"> <li>— Asparagus</li> <li>— Beets</li> <li>— Brussels sprouts</li> <li>— Broccoli</li> <li>— Cabbage</li> <li>— Carrots</li> <li>— Cauliflower</li> <li>— Celery</li> <li>— Celery root</li> <li>— Corn</li> <li>— Cucumbers</li> <li>— Eggplant</li> <li>— Fennel</li> <li>— Garlic</li> <li>— Green beans (yellow, wax, Italian)</li> <li>— Greens, cooking</li> <li>— Herbs</li> </ul>	<ul style="list-style-type: none"> <li>— Jerusalem artichokes</li> <li>— Kale</li> <li>— Kohlrabi</li> <li>— Leeks</li> <li>— Lettuce</li> <li>— Mushrooms</li> <li>— Okra</li> <li>— Onions (mature and green)</li> <li>— Parsley root</li> <li>— Parsnips</li> <li>— Peas</li> <li>— Peas (sugar snap and snow)</li> <li>— Peppers (sweet and hot)</li> <li>— Potatoes</li> <li>— Radishes</li> <li>— Rhubarb</li> </ul>	<ul style="list-style-type: none"> <li>— Romanesco</li> <li>— Root vegetable, other or unidentifiable</li> <li>— Rutabaga</li> <li>— Salad Greens/Mix</li> <li>— Shoots, sprouts, microgreens</li> <li>— Spinach</li> <li>— Summer squash</li> <li>— Sweet potatoes</li> <li>— Tomatoes (cherry, grape, and slicing)</li> <li>— Tomatillos</li> <li>— Turnips</li> <li>— Winter squash</li> <li>— Vegetable blend, Identifiable</li> <li>— Vegetable, other or unidentifiable</li> </ul>

## Analysis of Purchasing Data

Legislation for 10 Cents requires grantees to report their purchases of eligible Michigan-grown products for reimbursement. For the 2021–2022 program year, MDE created their own online system to collect purchasing information. (In previous years, an external consulting company built and housed this reporting system.) Grantees were required to report details of purchases including the product type, unit, quantity, total cost, farm of origin (name and county), distributor (if applicable), and invoicing date. Data reported by FPMs were reviewed by MDE and monitored for ineligible purchases and errors (e.g., duplicated entries). Ineligible products include highly processed or canned items (e.g., applesauce, juice, chili); items that were not fruits,

vegetables, or dry beans (e.g., bread, maple syrup, honey, eggs); or items not originating from Michigan (e.g., bananas, papayas, pineapples). A food vendor was deemed ineligible if they did not source their products from Michigan farms even if their business is located within the state. If a purchase was deemed ineligible, it was removed from the purchasing dataset and flagged for follow-up by program administrators in case a grantee needed to be assisted with questions about eligibility.

MDE categorized the purchasing data according to a product naming guide used by Michigan State University Center for Regional Food Systems (see Table 15) and helped clean data by ordering the vendor columns to farm of origin, intermediary(s) and final vendor. Evaluators aggregated and cleaned the purchasing data further to correct any errors before analysis. Similar to previous evaluation reports, a vendor guide was used to verify and assign suppliers into supplier types (see [Key Definitions](#)) using information from online sources, direct communications, and data collected in previous years. In some instances, evaluators manually corrected the final vendor if a grantee mistakenly wrote the name of an intermediary instead. This occurred for certain vendors who only sold through a broadline distributor and it could be corrected by determining the contracted broadline distributor that a grantee used (there are four main broadline distributors in Michigan).

## Additional Information for Individual Sections

### Who is Engaged in 10 Cents Grants?

#### ● 10 Cents Grantees: A Summary of Geographic Distribution and Student/Children Demographics

The ECE license capacity listed is the maximum number of children who may be cared for by a center, as determined by the state or local licensing agency, and it includes all possible sites under each grantee. Student population and licensing data for all the following tables were provided by MDE for the 2021-2022 year after the school year ended. The race and ethnicity categories for K-12 students provided below were sourced from the [MI School Data's website](#), the State of Michigan's official education data source. Enrollment and demographic information for participating ECEs, RCCIs, and non-public schools could not be included in our reporting as these data were not publicly available. Lastly, MASA Regions 9 and 10 were combined for this evaluation to simplify reporting (Region 10 is the City of Detroit).

#### ● Promotional and Educational Activities Supporting 10 Cents

In each of the surveys, FPMs were asked, "Since the start of the school year/last survey, which activities to support local foods have been implemented in your school/district/center?" Grantees were asked to select all activities that applied from a list that included both promotional and educational activities along with the options to choose "none," "other" classroom activities, and "other, please describe." If tasting activities were selected, grantees were asked to list the Michigan-grown food product types that were used. If at least one activity was selected, grantees were asked which type of activity they considered most successful. It should be noted that survey respondents did not provide the number of times each type of activity was conducted, nor specify the intentions of the activities being delivered (promotion or education) - unless the activity was already labeled as such (ex. nutritional education in the classroom). This was the first program year that 10 Cents allowed grant funding to be used towards the purchase of Michigan-grown foods for any supportive activities.

**Meal Preparation Methods Used in Participating Food Service Programs**

FPMs were asked to enter the percentage of three food preparation methods (heat and serve, semi-prepared, and scratch cooking) that were used in their food programs, with the total adding up to 100 percent.<sup>36</sup> There was also an option to select “other” if a grantee used a method that was not listed. For the first round of grantees, 176 of 226 FPMs responded to the question in January (78% response rate) and for the second round of grantees, 28 of 29 responded in April (97% response rate). Fifteen grantees selected an “other” option. The most common of these were a salad/vegetable bar (5 grantees) and fresh, cold, or uncooked methods (5 grantees).

**Response of Food Service Staff to Purchasing and Serving Michigan-Grown Foods Through 10 Cents**

In the August evaluation survey, 167 FPMs out of 217 responded to the question, “How has your staff responded to the purchase and service of local foods purchased through the 10 Cents program?” (65% response rate). The open-text responses from FPMs were labeled as positive, negative or neutral feedback and then categorized for themes. A single grantee’s response could have multiple themes.

**Table 16: Feedback about Staff Response to the Purchase and Service of Local Foods in 10 Cents 2021-2022**

Theme	Categories	Number (percent) of grantees (n = 165)
Positive	General positive response	100 (61)
	Excited to serve local foods to children	13 (8%)
	Increased knowledge about preparing local foods	6 (4%)
	Enjoyed trying new varieties of local foods	18 (11%)
	Proud to serve local foods	10 (6%)
	Satisfied with the better taste or quality of local foods	10 (6%)
Negative	More labor to prepare local foods	6 (4%)
	Inconsistent product quality of local foods	1 (1%)
Neutral	Indifferent	11 (7%)

**Motivations, Barriers, and Challenges for Purchasing and Serving Local Foods**

The survey questions for grantees about motivations, barriers, and logistical challenges each had open-ended responses that allowed participants to describe their feedback in their own words. For the purposes of this evaluation and categorizing responses, barriers were considered general and bigger picture obstacles that prevent or block a grantee’s ability to purchase and serve local foods while logistical challenges were intended to be more specific to the operations of food service program

<sup>36</sup> Refer to the [Key Definitions](#) section for definitions of these three meal preparation methods.

operations, including how they work with food vendors. Many grantees reported similar responses to both challenges and barriers, such as supply chain issues, so improvements to this question design (potentially including descriptions of each) and/or the categorization of responses should be considered in future years. Evaluators categorized the text entries based on common themes, and some themes are duplicated among the different questions. For example, limited availability of local foods was a top response in both the barriers and logistical challenge questions. Grantees could mention multiple themes within their response so the total frequency of themes is higher than the number of responding grantees.

**Table 17: Motivators, Barriers, and Logistical Challenges Reported by 10 Cents Grantees in 2021–2022**

Themes	Categories	Number (percent) of mentions	Number (percent) of grantees
<b>Motivators</b> — 451 total statements n = 216	Benefits to children	124 (27%)	124 (57%)
	Product attributes	109 (24%)	109 (50%)
	Support community	101 (22%)	101 (47%)
	Help Michigan farms and food business	92 (20%)	92 (43%)
	Good public relations	11 (2%)	11 (5%)
	Grant awards	5 (1%)	5 (2%)
	Price	5 (1%)	5 (2%)
	Sustainability	4 (1%)	4 (2%)
<b>Barriers</b> — 196 total statements n = 213	Lack of product availability	74 (38%)	74 (35%)
	Food service operation limitations	46 (23%)	46 (22%)
	Supply chain issues	35 (18%)	35 (16%)
	Access to farmers and food suppliers	27 (14%)	27 (13%)
	Other	7 (4%)	7 (3%)
	Food product quality	4 (2%)	4 (2%)
	Children preferences	3 (2%)	3 (1%)
<b>Logistical Challenges</b> — 189 total statements n = 200	Food service operation limitations	61 (32%)	61 (31%)
	Supply chain issues	61 (32%)	61 (31%)
	Product availability	47 (25%)	47 (24%)
	Finding farms or food suppliers	12 (6%)	12 (6%)
	Student likeability	5 (3%)	5 (3%)
	Product quality	3 (2%)	3 (2%)

## What Foods Are Served Through 10 Cents?

### ● Michigan-Grown Fruits, Vegetables, and Dry Beans Purchased and Served for the First Time

In each of the surveys, FPMs were asked “Did you serve any new Michigan-grown fruits, vegetables, or legumes for the first time in your program since the beginning of the year/last survey?” If they indicated yes, FPMs were then asked to list up to 12 Michigan-grown fruits, vegetables, and/or legumes they tried for the first time in their food program. These are referred to as “new foods” throughout this report. Regardless of product variety, if a grantee duplicated their response of a specific food product across different surveys, those responses were removed before analysis; 98 duplicates total by 44 different grantees were removed. Responses were also removed if the grantee indicated an ineligible item; 23 of these items were removed from responses, such as meat, applesauce, pickles, etc.

Throughout the year, 139 FPMs made 559 total reports of serving a Michigan-grown fruit, vegetable, or legume for the first time. On average, FPMs reported serving 2.5 or when rounded, three new Michigan-grown foods during the year.

### ● Michigan-Grown Vegetables, Fruits, and Dry Beans of Interest but Unable to Find or Buy

If FPMs responded yes to, “Are there any Michigan-grown fruits, vegetables, or legumes that you would like to use that you have been unable to find or buy for your food service program?”, they were asked to list up to 12 Michigan-grown fruits, vegetables, and/or legumes they wanted to use in their food program that they have been unable to find or buy. Grantees were also asked to include the form in which they would like to purchase the product. Eligible forms for 10 Cents include fresh, frozen, dried, or minimally processed (including chopped, sliced, etc.). If a grantee duplicated their response across surveys, those responses were removed before analysis (44 duplicates total by 20 different grantees). Responses were also removed if the grantee indicated an item ineligible for 10 Cents, such as syrup or bread (25 items were removed by 15 different grantees).

## The Big Picture: Does 10 Cents Work?

### ● Outcomes of Participating in 10 Cents

In the final August evaluation survey, FPMs were asked, “Related to your food service operation, which of the following outcomes has the 10 Cents program helped you to achieve?” FPMs were asked to select all that applied from a list of outcome statements. The option “other” was also provided with space for FPMs to describe their response.

### ● Impacts of Participating in 10 Cents

In the final August evaluation survey, FPMs were asked, “To what extent are each of the following impacts true for your food service operation since participating in 10 Cents?” FPMs were provided with a list of statements and asked to choose their level of agreement from a 5-point Likert scale ranging from strongly agree to strongly disagree. A whole number from 5 to 1 was assigned to responses to calculate average responses for each statement, which are presented in Table 10 in descending order of average agreement. A higher average response indicates stronger agreement to the statement by FPMs overall.

In the final survey, FPMs were asked several questions related to their participation in 10 Cents and its impact on farmers or local food vendors/suppliers. For questions with yes/no responses, grantees who responded yes were then asked to provide an open-ended, written description for their responses. For analysis, open-ended responses from FPMs were categorized to different themes.

#### ● **Grantee Needs to Support Purchasing and Serving Michigan Foods**

For questions about needs to support purchasing and serving Michigan foods, open-text responses from FPMs were categorized into themes. A single grantee's response could have multiple themes within it, so the number of references to themes is often higher than the actual number of responses.

#### ● **Feedback About Participating in 10 Cents a Meal**

For questions about program feedback, open-text responses from FPMs were categorized into themes. A single grantee's response could have multiple themes within it, so the number of references to themes is often higher than the actual number of responses.

## A Closer Look at Public School Grantees

#### ● **Does the Number of Years of 10 Cents Participation Influence Public School Districts Grantees' Use of the Program?**

The following information details how statistical analyses were conducted to reveal statistically significant findings. For all tests, a Kruskal-Wallis H test was run to determine if there were differences among the three groups of participants with differing years of experience participating in 10 Cents (n=110): 2 years or less, 3-4 years, and 5 years or more. For all tests, the dependent variable did not have similarly shaped distributions for all groups of the independent variable, so only differences in distributions and/or mean ranks were investigated. Additionally, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Statistical significance was accepted at the  $p < .05$  level.

- The mean ranks of total new products tried by grantees were statistically significantly different between groups,  $\chi^2(2) = 6.872$ ,  $p = .032$ .
  - Post hoc analysis revealed statistically significant differences in the number of new products tried between the 2 years or less (60.94) and 5 years or more (40.21) ( $p = .039$ ) groups, but not between any other group combination.
- The mean ranks of different products purchased by grantees were statistically significantly different between groups,  $\chi^2(2) = 15.180$ ,  $p = <0.001$ .
  - Post hoc analysis revealed statistically significant differences in the number of different products purchased between the grantees with 1 year of experience (48.37) and 5 years of experience (81.09) ( $p = <0.001$ ), but not between any other group combination.
- The mean ranks of total farms of origin reported by grantees were statistically significantly different between groups,  $\chi^2(2) = 7.926$ ,  $p = <.019$ .
  - Post hoc analysis revealed statistically significant differences in the number of farms of origin reported between the 2 years or less of experience (50.37) and 5 years or more of experience (72.68) ( $p = 0.028$ ), but not between any other group combination.



- The mean ranks of total market channels used were statistically significantly different between groups,  $\chi^2(2) = 14.977$ ,  $p < .001$ .
  - Post hoc analysis revealed statistically significant differences in the number of market channels used between the 2 years or less (50.71) and 5 years or more (82.44) ( $p < 0.001$ ) groups.
  - Post hoc analysis revealed statistically significant differences in the number of market channels used between the 3-4 years (56.15) and 5 years or more (82.44) ( $p < 0.05$ ) groups.

● **Does the Food Service Operation Type Influence Public School Districts Grantees' Use of the Program?**

The following findings from grantee-reported data showed no notable differences among public school district grantees in their use of 10 Cents and their type of food service program with:

- **Average number of different market channels**  
(contracted = 2.0, self-operated = 2.0);
- **Average number of outcomes achieved from participating in 10 Cents**  
(contracted = 2.6, self-operated = 3.5);
- **Average number of different types of new Michigan foods tried for the first time**  
(contracted = 3.3, self-operated = 2.6);
- **Average number of different types of Michigan foods of interest**  
(contracted = 1.6, self-operated = 0.7); and
- **Average number of farms of origin for products purchased**  
(contracted = 6.1, self-operated = 5.9).

There were no statistically significant findings related to differences between public school district grantees in their use of 10 Cents and their type of food service program.

Evaluation of 10 Cents is led by the Michigan State University Center for Regional Food Systems (CRFS). The work presented here is part of the *10 Cents a Meal 2021-2022 evaluation results: Amplifying Impact with More Michigan Farms and Foods* by Megan McManus and Colleen Matts, CRFS, and with support from the W.K. Kellogg Foundation and 10 Cents administrative funds for partner organizations.

To learn more, visit [tencentsmichigan.org](https://tencentsmichigan.org), [foodsystems.msu.edu/10-cents-a-meal](https://foodsystems.msu.edu/10-cents-a-meal), and [mifarmtoschool.msu.edu](https://mifarmtoschool.msu.edu).

