

# FRESH PRODUCE PURCHASING AND DISTRIBUTION PRACTICES OF SCHOOLS: SURVEY RESULTS OF OKLAHOMA SCHOOLS AND DISTRIBUTORS

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## DATA COLLECTION

To assess participation in FTS and determine the school district characteristics most closely associated with FTS participation, a survey of Oklahoma school districts was conducted by the Robert M. Kerr Food & Agricultural Products Center at Oklahoma State University. Information obtained through the surveys included school district size, current suppliers of fruits and vegetables, the portion of schools' food budgets allocated for fruits and vegetables, distributors utilized by the schools, and produce preferences. The FTS coordinator with the Oklahoma Department of Agriculture, Food and Forestry (ODAFF) and the staff with the Oklahoma Department of Education were instrumental in this effort.

A web-based survey was sent to Oklahoma school districts via e-mail by employing a third party survey company. The survey populations consisted of food service directors, child nutritionists, superintendents and other school personnel from Oklahoma school districts. Contact information was obtained from the Oklahoma State Department of Education (OSDE), complete with names of school personnel, phone numbers, e-mails and addresses. Data on the districts that have participated in FTS also was provided by ODAFF.

The survey was sent out in August of 2008 to more than 800 school personnel in Oklahoma. Although there are only 535 school districts in Oklahoma, the contact list provided by the OSDE had more than one contact name listed for some of the districts. The emails were sent out a total of three times during a period of three months to remind the recipients of the survey. The response rate to the e-mailed survey was 57% overall: 30% from the first email, 17% from the second request and 10% from the third request. Some recipients requested that a hard copy survey be sent via the postal service. Less than one percent of the responses were obtained from mailed surveys.

In an attempt to avoid incomplete responses related to school district characteristics, additional data for incomplete responses were retrieved from the OSDE Web site.

The retrieved data included the number of students enrolled in a district and the percentage of free and reduced meals offered by the district. Since ODAFF is aware of the current and past participants of FTS in Oklahoma, the respondents who did not state whether their district has participated in the program, also was added accordingly.

The distributors listed by the responding schools also were surveyed to identify their operational standards for FTS produce delivery. Responses from this survey have been summarized and are provided after the school survey responses.

## SCHOOL SURVEY RESULTS

Findings from the survey provide a unique insight into the operational parameters and patterns of Oklahoma school nutrition programs. Results are provided in the following tables and in a variety of formats: some providing aggregate responses, some organized to show differences among school district sizes (based on student population) and some to highlight differences in responses between FTS and non-FTS participants.

Consistent with the makeup of school district sizes within the state, Table 1 illustrates the majority of the schools that responded to this question are of smaller size (population of 500 students or less).

Table 2 reflects the information gathered from the question, "On average, how many students does your district serve per day during the school year?" This question is pertinent because not all students participate in school meal programs. Some children have the option of bringing a sack lunch or buying food outside of the school lunch and breakfast program. Although the number of students served is divided into the same size groups as district size, Tables 1 and 2 cannot easily be compared because larger schools may feed less than 500 kids a day.

With the last option ("Other") in Table 3, respondents had the opportunity to state if there were beneficiaries in addition to those listed. A total of six different responses

**Table 1: Response to survey according to district size (n=276)**

	District Size					
	<500	500-1,000	1,000-2,500	2,500-5,000	5,000-10,000	>10,000
Number	153 <sup>a</sup>	54	45	13	3	8
Percent	55.43%*	19.57 %	16.30%	4.71%	1.09%	2.90%

<sup>a</sup> 153 respondents (55.43%) reported that their school district has less than 500 students.

**Table 2: Average number of students served daily (n=276)**

	Number of Meals Served Per Day					
	<500	500-1,000	1,000-2,500	2,500-5,000	5,000-10,000	>10,000
Number	179 <sup>a</sup>	50	27	7	4	6
Percent	65.57% <sup>a</sup>	18.32 %	9.89%	2.56%	1.47%	2.20%

<sup>a</sup> 179 respondents (65.57%) reported serving less than 500 students daily.

**Table 3: Perception of beneficiaries of FTS (n=182)**

	Schools	Students	Farmers	Community	Other
Number	135 <sup>a</sup>	148	152	112	5
Percent	74.18% <sup>b</sup>	81.32%	83.52%	61.54%	2.75%

<sup>a</sup> Respondents were able to choose more than one option when answering the corresponding question.

<sup>b</sup> Of the 182 collected responses, 135 respondents (74.18%) states schools benefit from the FTS program.

were collected for this option. Some respondents said they did not participate in FTS; therefore, they did not state who benefits. Others stated that all of the listed beneficiaries, as well as taxpayers in general benefit from the program.

Surprisingly, the results shown in Table 4 suggest the greatest perceived barrier to FTS is not cost. The ability to provide timely and efficient delivery was perceived as a much greater issue. Of least concern were health issues and barriers not identified in the scope of the possible answers. Many school personnel and department of agriculture officials believe FTS can be affordable. When produce is in season within Oklahoma, many consumers are able to receive locally grown produce at a lower price than produce coming from outside of the state. Some argue the associated transportation and handling costs of non-local produce adds to the market price.

According to the results in Table 4, seasonality and availability of products are perceived as problems but not with the same severity as delivery. The prime season for fruits and vegetables within Oklahoma does not coincide with the traditional academic school year. There are, however, many fruits and vegetables that are in season in Oklahoma during the time children are in school. Some of the more prominent options are watermelon, cantaloupe, honeydew melon, spinach, lettuce, tomatoes, cucumbers, and squash. Because of Oklahoma's growing season, most

of these commodities are still being marketed by farmers in August and September. Some commodities, such as spinach, are available later in the fall and in the spring as well. The expanding use of greenhouses or hoop houses in Oklahoma may make a longer marketing season possible, however adequate supply might still be a problem.

In Table 5, the factors with the highest rating of importance (rating of nine or 10) and greatest influence on their participation in FTS are freshness of product, consistency in product quality and expense. Ease of participating in the program is ranked fourth among the factors of most importance that influence FTS participation. The least important factors affecting FTS participation are delivery frequency, willingness to provide specific products and produce origin.

Overall, Table 5 illustrates what factors are important to potential and current FTS participants. Produce origin had the lowest rating of importance comparatively. This could indicate that locally grown produce isn't necessarily of high demand, or rather that schools participate in the program because the fruits and vegetables are available locally and the program exists. Participation also may be a result of the Oklahoma Farm-To-School Act which encourages school food service personnel to buy local produce when available.

## RESULTS ACCORDING TO DISTRICT SIZE

Table 6 shows the frequency of participation in corresponding programs according to school district size. The column “FTS programs” refers to the question, “Has your school district participated in any of the following Farm-to-School programs?” There are a total of four options to this question: a) The Farm-to-School Pilot Program in 2004-2005 during which seedless watermelons were distributed, b) The Statewide Farm-To-School Program starting in 2006-Present, c) Working with local farmers without Farm-to-School assistance (working with farmers independently) and d) None of these.

The column “Breakfast programs” refers to the survey question, “Do your schools participate in breakfast programs? If so, how many students do you serve per day with the breakfast program?” The next column, summer feeding programs, refers to question five in the survey, “Do any of the schools within your district house a summer feeding program?” Having a summer feeding program was coded as “1,” otherwise the result received the value “0.”

The final column refers to question seven in the survey, “Is your school district a closed campus or an open campus for high-school students during lunch hours?” There are only two options to this question: open and closed. The numbers in Table 6 represent the percent of respondents with an open campus policy.

As shown in Table 7, the number of times produce is delivered within a period varies from district to district. Only districts with a student population size of 1,000 or less receive produce once a month. Because fresh produce has a short shelf life, delivery frequency is important to ensure that produce is fresh and of high quality. Overall, there is no apparent correlation in Table 7 between district size and produce delivery frequency. The majority of the districts (77.61%) have fresh fruits and vegetables delivered once a week. It is likely the reason why the majority of the districts have produce delivered once a week is freshness. In addition, refrigerated and cool storage space is limited in many kitchens which may not allow for many districts to store produce exceeding a week’s worth of consumption.

The information in Table 8 is especially pertinent to FTS because the majority of the FTS products are received whole and unpackaged. According to Oklahoma Department of Health guidelines, cutting or processing produce in any form would be considered a “value-added processing” activity which has to meet the established food processing regulations (Oklahoma State Department of Health, 2009). Meeting the regulations required for a commercial food processor can be costly and time consuming for a producer. Therefore, the majority of farmers that participate in supplying FTS products do not cut or package their produce. The majority of the districts re-

**Table 4: Perception of greatest barrier to a successful FTS program (n=199)**

	Costs	Delivery	Seasonality	Health Concerns	Availability of products	Other
Number	18 <sup>a</sup>	107	24	13	25	12
Percent	9.05% <sup>a</sup>	53.77%	12.06%	6.53%	12.56%	6.03%

<sup>a</sup> 18 respondents (9.05%) stated the greatest barrier to FTS is cost.

**Table 5: Rating (1-10 scale) of factors that influence participating in FTS (n=195)**

	High Importance (rating of 9 or 10)	Percent
Freshness of Products	162 <sup>a</sup>	83.03% <sup>a</sup>
Consistency in product quality	152	77.95%
Expense	140	71.79%
Ease of participating in FTS program	133	68.21%
Ability to produce desired quality	123	63.08%
Convenience	119	61.03%
Ability to adjust timing of deliveries	117	60.00%
Delivery Frequency	117	60.00%
Willingness to provide specific products	104	53.33%
Produce origin	88	45.13%

<sup>a</sup> 162 respondents (83.08%) rate freshness of product of high importance when participating in FTS.

ceive 25% or less of their produce precut and bagged. It is not unusual to see schools receive products ready for use. Labor is a large component of a school's cafeteria budget, which makes ready-to-use products more attractive. However, if the price point for precut produce is considerably higher than uncut produce, and if spoilage occurs faster with pre-cut produce, cafeterias may actually save money by purchasing uncut produce and utilizing their labor for cutting and preparation activities.

The results in Table 9 are gathered from the responses to an open ended question in the survey. The amount of free and reduced lunch reflects the amount of reimbursement the districts receive for the meals served to the students. According to Table 9, only two district sizes (500 to 1,000 and 1,000 to 2,500) receive the majority of free and reduced lunch in the 50 to 70% range. All other district sizes receive varied percentages of free and reduced meal reimbursements. Across all district sizes, approximately 50% of the districts receive reimbursements within the 50 to 75% range.

Table 10 illustrates there is no apparent correlation between school size and the percent of the cafeteria food budget that is allocated to fresh produce. The majority of the schools spend less than 15% of their food budget on fresh produce. Fresh produce is often the "catch all" food cost category in school lunch programs. Primary budget items include entrees, milk and bread products. Fruits and vegetables, whether fresh or somehow preserved, must contend for the remaining available funds.

## USE OF FOOD DISTRIBUTION SERVICE PROVIDERS

Although FTS promotes delivery of locally grown fruits and vegetables to schools, the means of delivery and the definition of "local" vary. In some cases, direct delivery by the producer is the most appropriate and least expensive means of product delivery. However, for larger produce farmers and for opportunities to spread more state-based production to schools, utilizing existing dis-

**Table 6: Program participation according to school district size**

District Size	FTS programs <sup>a</sup>	Breakfast programs <sup>b</sup>	Summer feeding programs <sup>c</sup>	Open campus policy <sup>d</sup>
< 500	3.92% <sup>e</sup>	95.36%	18.95%	23.25%
500 - 1,000	9.26%	90.57%	28.30%	36.54%
1,000-2,500	15.56%	97.78%	36.36%	33.33%
2,500 - 5,000	23.08%	100%	61.54%	53.85%
5,000 - 10,000	66.67%	100%	33.33%	33.33%
> 10,000	75%	100%	75%	42.86%
All Districts	10.51% <sup>f</sup>	95.24%	27.37%	29.70%

<sup>a</sup> n=276.

<sup>b</sup> n=276.

<sup>c</sup> n=274.

<sup>d</sup> n=266.

<sup>e</sup> This is the percentage of respondents that are within the corresponding district size that participate in the program or policy. For example, of the total number of districts with a student population size of 500 or less, 3.92% participate in FTS.

<sup>f</sup> Total percentage of participation in the corresponding program or policy across all school districts. For example, 10.51% of the respondents that answered to the corresponding question participate in FTS.

**Table 7: Delivery frequency of produce according to school district size (n=259)**

District Size	Once a Month	Twice a Month	Once a week	Twice a Week
< 500	4.90% <sup>a</sup>	6.29%	77.62%	11.19%
500 - 1,000	1.92%	3.85%	80.77%	13.46%
1,000-2,500	0%	2.38%	64.26%	33.33%
2,500 - 5,000	0%	0%	91.67%	8.33%
5,000 - 10,000	0%	0%	100%	0%
> 10,000	0%	0%	100%	0%
All Districts	3.09% <sup>b</sup>	4.63%	77.61%	14.67%

<sup>a</sup> Of the respondents with district size of 500 or less students, 4.90% have produce delivered once a month.

<sup>b</sup> Across all district sizes, 3.09% have produce delivered once a month.





**Table 8: Percent of produce precut and bagged when received, by district size (n=251)**

District Size	10%	25%	50%	75%	100%
< 500	39.72% <sup>a</sup>	26.95%	19.15%	12.77%	1.42%
500 - 1,000	32.65%	30.61%	18.37%	14.29%	4.08%
1,000-2,500	40%	32.50%	17.50%	10%	0%
2,500 - 5,000	8.33%	50%	25%	16.67%	0%
5,000 - 10,000	33.33%	33.33%	0%	33.33%	0%
> 10,000	33.33%	0%	100%	50%	0%
All Districts	36.65% <sup>b</sup>	29.48%	18.33%	13.94%	1.59%

<sup>a</sup> Of the districts with 500 or less students, 39.72% report 10% of produce received is precut and bagged.

<sup>b</sup> Across all districts, 36.65% receive 10% of their produce precut and bagged.

**Table 9: Percent of free and reduced meals provided according to district size (n=273)**

District Size	<25%	25% to 50%	50% to 75%	>75%
< 500	1.32% <sup>a</sup>	16.56%	48.34%	33.77%
500 - 1,000	3.70%	22.22%	53.70%	20.37%
1,000-2,500	8.89%	26.67%	46.15%	15.38%
2,500 - 5,000	0%	38.46%	46.15%	15.38%
5,000 - 10,000	66.67%	0%	33.33%	3%
> 10,000	14.29%	14.29%	42.86%	28.57%
All Districts	4.03% <sup>b</sup>	20.15%	50.18%	25.64%

<sup>a</sup> Of the districts with 500 or less students, 1.32% reported 25% or less of the students receive free and reduced meals.

<sup>b</sup> Across all districts, 4.03% districts reported 25% or less of their students receive free and reduced meals.

**Table 10: Percent of food budget allocated to fresh produce (n=265)**

District Size	<5%	5% to 15%	15% to 25%	25% to 50%	>50%
< 500	30.82% <sup>a</sup>	55.48%	3.42%	2.05%	8.22%
500 - 1,000	39.62%	54.72%	0%	1.89%	3.77%
1,000 - 2,500	40%	42.22%	0%	11.11%	6.67%
2,500 - 5,000	45.45%	45.45%	9.09%	0%	0%
5,000 - 10,000	0%	66.67%	0%	0%	33.33%
> 10,000	42.48%	57.14%	0%	0%	0%
All Districts	34.72% <sup>b</sup>	52.83%	2.26%	3.40%	6.79%

<sup>a</sup> Of the districts with 500 or less students, 30.82% reported 5% or less of their food budgets are allocated to fresh produce.

<sup>b</sup> Across all districts, 34.72% districts reported that 5% or less of their food budgets are allocated to fresh produce.

tribution networks may be a more efficient method for product delivery.

Tables 11 and 12 provide an insight into the more prominent distributors of food items to Oklahoma school districts. The list of distributors is meant to encompass the most widely used distributors in Oklahoma. If there is a food distributor that is not listed, the “other” option allowed for respondents to list the name of the distributor. This information can be obtained upon request from the researchers.

The choices shown in Tables 11 and 12 do not differ greatly among respondents, meaning that many of the districts use the same distributor for both fresh produce and items other than fresh produce. The two largest distributors used for both fresh produce and non-fresh items are U.S. Foods and Sysco, although the percentage of items received from assorted small suppliers and local grocery stores is relatively significant. Some of the listed small distributors were Guderian, Redland’s Produce and Faddler’s. The grocery stores were Walmart, Sam’s and other local grocery stores.

## DISTRIBUTOR SURVEY RESULTS

As a follow-up to the school survey, the distributors identified by the schools also were surveyed to assess their perceptions of and operational procedures for FTS produce shipments. These distributors, which included both large regional/national distributors and smaller local distributors, were asked to provide information related to their FTS produce distribution business. Nine of the distributors responded to the survey. The information they provided included the number of schools to whom they distribute, the percentage of their business derived from school deliveries, documentation/requirements for handling FTS produce from small farmers, fees for handling FTS produce and even the types of trucks they use to make deliveries.

The results of the survey are provided in this publication solely as an example of one state’s distribution sys-

tem. These results may or may not be similar to those obtained from distributor surveys in other states. However, they are intended to provide an idea of the issues faced by distributors who voluntarily agree to assist and support a state’s FTS program. To protect the confidentiality of the respondents, only aggregate results are provided.

Table 13 provides a list of general findings from the survey. Collectively, the responding distributors deliver produce to more than 40% of Oklahoma’s 535 school districts. Schools represent only a small portion of the business activity for these distributors, with an average of 9% of total business volume coming from school purchases. Surprisingly, the level of business (as a percentage of sales) that schools represent for these distributors did not significantly vary by size of the distributor. However, these distributors do view the schools as important clients and make significant efforts to meet their demands for locally grown produce, whether or not the purchases are officially designated as FTS purchases.

Three of the nine respondents had lower delivery charges for schools compared to their non-school customers, generally a percentage of the produce price. The methods for pricing produce items delivered to schools varied from daily quoted prices for produce to fixed yearly bids with only “act of God” provisions allowing price increases. Some even locked in prices on certain produce items for the year while allowing other prices to vary according to market conditions.

The risks of food borne pathogens are always present, whether produce comes from a small, local supplier or a large, nationwide supplier. Thus, all distributors maintain a strict set of required documents for suppliers, both large and small. Requirements for small, local suppliers included product liability insurance coverage (amounts varied by distributor), Hazard Analysis and Critical Control Points (HACCP) documentation, Good Agricultural Practices (GAP) documentation and if applicable Good Manufacturing Practices (GMP) documentation. Such documentation is commonplace in the food industry, and



**Table 11: Distributors used for non-produce items for all districts (n=261)**

Small distributors	21.84%
U.S. Foods	14.94%
Sysco	11.49%
Grocery Stores	10.73%
Tankersley Food Company	6.13%
Tom E. Bogg's	6.13%
Mid-America	4.98%
Performance Food Group	4.98%
Ben E. Keith	4.6%
Vinyards	3.45%
Buddy's Produce	3.07%
Tulsa Fruits and Produce	3.07%
Southwest Food Service	1.53%
Thomas Brothers-Tulsa	1.15%
Okie Produce	0.77%
Frontier Produce	0.77%
Thomas Brothers-OKC	0.38%

**Table 12: Distributors used for produce items for all districts (n=257)**

Small distributors	17.9%
U.S. Foods	12.84%
Sysco	12.06%
Grocery Stores	10.89%
Tankersley Food Company	8.56%
Ben E. Keith	5.84%
Tom E. Bogg's	5.45%
Mid-America	4.28%
Vinyards	4.28%
Performance Food Group	3.89%
Buddy's Produce	3.89%
Tulsa Fruits and Produce	3.89%
Southwest Food Service	1.95%
Thomas Brothers-Tulsa	1.56%
Okie Produce	1.17%
Frontier Produce	1.17%
Thomas Brothers-OKC	0.39%

many of these concepts are covered in the section of this publication related to food safety.

Distributors participating in the Oklahoma FTS program have in the past graciously agreed to cap FTS produce handling charges to \$1.50 per case of product. In personal meetings with suppliers, some had suggested that this charge may eventually have to increase to cover the true costs of delivering small quantities of locally grown produce to schools. In fact, following the completion of the distributor survey, the handling charge for the 2009-2010 school year was increased to \$1.70 per case.

When asked about the handling fee in the survey, the thoughts of distributors varied greatly. Two of the respondents considered the \$1.50 fee, which was the fee at the time of the survey, to be an adequate amount if fuel prices did not return to record high levels. Two suggested increasing the fee, one by \$0.20 to the current \$1.70 amount

and one by \$0.50 to \$2.00. Three suggested at least doubling the old fee, i.e. charging \$3.00 or more per case. Follow-up comments from distributors suggested that the old \$1.50 per case fee could be more easily maintained if the FTS program was supported by larger and more consistent quantities of produce.

Quantity, and the consistency of that quantity, is viewed by distributors as the greatest barrier to the maintenance and growth of the Oklahoma FTS program. The quality of local produce also was viewed as a barrier by two of the respondents. The price of local produce was only mentioned as a potential barrier to the FTS program by one distributor. This is a contrast to the findings of the school survey, in which roughly 72% of the respondents considered "expense" as an issue of high importance in FTS program participation.

**Table 13: Summary results from the survey of produce distributors to Oklahoma schools (n=9)**

Number of schools serviced	<ul style="list-style-type: none"> <li>• Collectively, 233</li> <li>• Range = 5 to 100</li> <li>• Two large distributors accounted for 190 schools</li> </ul>
Percent of business generated by school deliveries	<ul style="list-style-type: none"> <li>• Average = 9%</li> <li>• Range = 1% - 15%</li> </ul>
Different fee structure for schools versus non-school customers	<ul style="list-style-type: none"> <li>• Three had different fee structures for schools, four did not, and two did not respond</li> <li>• Those with different fee structures charged schools less than other customers, charging either fixed margins or margins that could be varied at certain times during the year.</li> </ul>
Nature of produce (not FTS) bids with schools	<ul style="list-style-type: none"> <li>• Two had fixed prices for the year, with only “act of God” changes allowed</li> <li>• Two had pricing arrangements with schools for constant percentages above costs</li> <li>• Three had fixed bids for some items and variable prices for others</li> <li>• Two had weekly bids that accounted for weekly changes in market prices</li> </ul>
Documentation required of small, local farmers to distribute their produce	<ul style="list-style-type: none"> <li>• Eight of nine had strict documentation requirements, and the ninth did not purchase from small farmers</li> <li>• Six had specific insurance requirements, ranging in detail but all with at least \$1M per incident coverage</li> <li>• Six had specific requirements related to HACCP, GAP, and GMP (two didn’t respond)</li> <li>• One specifically mentioned a “hold harmless” agreement with small farmers before carrying their produce</li> </ul>
Backhauls to keep down transportation charges	<ul style="list-style-type: none"> <li>• Only one currently backhauls products from suppliers while making deliveries</li> <li>• Three would like to have some/more backhaul opportunities</li> <li>• Two more would consider backhaul opportunities under certain conditions</li> </ul>
Thoughts on the \$1.50/case handling charge for FTS produce deliveries (Note: The handling fee increased to \$1.70/case after the survey was completed.)	<ul style="list-style-type: none"> <li>• Two had no issues with the current rate, assuming diesel prices remained low</li> <li>• Two thought the charge should be increased by \$0.20 to \$0.50 per case</li> <li>• Two thought the charge should be doubled (\$3/case)</li> <li>• One thought the charge should be more than double its current rate</li> <li>• Two did not offer opinions on the current rate</li> </ul>
Segregating produce to specifically promote locally grown (besides FTS produce)	<ul style="list-style-type: none"> <li>• Two purposely separate locally grown produce from non-local produce, with a marketing emphasis on the locally grown produce</li> <li>• The other seven do not regularly segregate produce by locale, only identifying the locally grown produce when it is readily available</li> </ul>
Perceived barriers to expansion of the FTS program (multiple answers provided by each)	<ul style="list-style-type: none"> <li>• Two specifically mentioned quality issues related to produce from local farmers</li> <li>• Five said that quantity (consistency of supply) was a significant barrier</li> <li>• One mentioned price</li> <li>• One mentioned problems getting local producers to carry product liability insurance</li> <li>• Three did not provide comments to this question</li> </ul>