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Local Foods in Maryland Schools and Implications for Extension: Findings from Schools and Farmers

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Abstract: This article describes results from a study examining the supply chain for local foods in Maryland school meals, the barriers and opportunities for increasing local foods in schools, and the development of Extension efforts to meet the needs identified. Interviews and surveys were administered with stakeholders, including farmers and food service directors. The results suggest that outreach regarding public schools should focus on the farm level, while efforts for private schools

should focus on both the schools and the farm level and facilitating networking between the two.

Introduction

Farm to school programs connect schools and local farms, often with the dual objectives of serving healthy meals in schools and improving student nutrition, while also supporting local farmers (National Farm to School Network, 2011). There has been a dramatic increase in these efforts over the last decade. By 2011, 33 states passed legislation supporting farm to school, and 50 states have operational programs with almost 10,000 schools participating (Kalb & Lott, 2011; National Farm to School Network, 2011).

In Maryland, the Jane Lawton Farm to School Act was established in 2008 to promote the sale of Maryland farm products to schools and create "Maryland Homegrown School Lunch Week." The Act was also meant to provide educational experiences for students related to farm to school. While funding is minimal, the Maryland Department of Agriculture (MDA) and the State Department of Education (MSDE) have been involved in efforts to increase local food in school meals.

With a strong history of direct agricultural marketing—Maryland is in the top third of states (ranking 15th) for percent of sales to direct markets (USDA, NASS, 2009)—one could hypothesize that Maryland farmers are a good fit for farm to school programs because many will have an understanding of working outside of the typical farm-to-wholesale-to-retail market channel. At the same time, because consumers may be more familiar with direct marketing than in other parts of the country, the movement to bring local foods into schools may be accepted by parents and others.

Little is known about the use of local foods in Maryland school meals. Numerous studies have been implemented in other states, most focusing on food service (Anupama & Misako, 2009). Of the studies in this same report, farmers reported farm to school programs accounted for 5-10% of their income. As these programs have increased, so have the number of studies published in peer-reviewed avenues (Anupama, Azuma, & Feenstra, 2008; Izumi, Alaimo, & Hamm, 2010; Kloppenburg, Wubben, & Grunes, 2008; Schafft, Hinrichs, & Bloom, 2010). The role of Extension in farm to school has been described as supporting community partnerships or policies that increase access to healthy foods (Fitzgerald & Spaccarotella, 2009), or as a part of larger community collaborations working towards localizing food systems (Colasanti, Wright, & Reau, 2009).

Study Methods

The Maryland farm to school study was developed to examine the supply chain for local foods in Maryland schools, investigate the barriers and opportunities for increasing local foods in schools, and develop Extension programs to meet the needs identified, with an eye towards improving farmer incomes. While interviews and surveys were administered with stakeholders throughout the entire supply chain, this article focuses on the summary results from a survey of food service directors and discussions with farmers.

A survey of public and private school K-12 food service directors, which included over 30 questions

(Oberholtzer, 2010), was developed to study the current use of local foods in schools, the level of stakeholder interest, procurement from farmers, interest in procuring local foods in the future, barriers to using local foods in school meals, and perceptions of the effectiveness of the Maryland legislation. The survey was developed with feedback from MSDE and MDA staff.

The survey was implemented starting in late 2009 via [surveymonkey.com](http://www.surveymonkey.com); incentives in the form of a raffle were included in the private school sample. Food service directors received pre-notification letters, an invitation to participate in the survey, and approximately two follow-up contacts. Public school food service directors were contacted via email, while private school directors were contacted via mail. The public school survey population consisted of 24 County and Baltimore City directors, the list of which was obtained from MSDE. Three-quarters (18) of them responded to the survey. For private schools, a list of 310 schools with over 150 students was developed using various Internet resources. Fifty valid surveys were completed, resulting in a 17% return rate. We assume that a substantial number of private school non-respondents were those that do not provide food service to their students. Data was exported to SPSS for analysis.

Gathering information from Maryland farmers took a more informal approach. A semi-structured interview instrument was developed to ask farmers about barriers and opportunities for marketing to school systems. From discussions with MSDE, we knew that the supply of local agricultural products was a concern for schools, and interviews with farmers were meant to gather information about the barriers from the farmers' point of view. Maryland Extension professionals conducted informal surveys with 120 farmers in four vegetable grower meetings throughout the state. These interviews took on the form of informal focus groups, and answers to the questions were assembled by the Extension staff.

Study Results: Maryland Public and Private Schools

School Meals: Characteristics of Maryland Public and Private Schools

Many of Maryland's public schools have centralized kitchens (and food preparation) and procurement systems, distributing meals out to dozens or hundreds of schools where meals are reheated. However, some Maryland public school systems have less centralized systems, with satellite kitchens and numerous distribution and procurement sites. Sixty percent of the food service for private schools is operated by a contractor, while 37% is self-operated by the school. Public food service facilities, because of the high countywide enrollment and centralized systems, are producing many more meals during the school year and into the summer months (Table 1); they also have the highest variation in enrollment, with the smallest system supporting a little under 2,500 students countywide, while the largest has almost 140,000 students.

Table 1.
Descriptive Characteristics of Respondent Schools/Districts and Meals Served

Aspect	Public Schools (n=18)	Private Schools (n=43)
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	<i>--Mean--</i>	
Enrollment	30,850 (range 2,219-139,282)	420 (range of 78-1,400)
Daily breakfasts served	4,977	25
Daily lunches served	14,146	239
Daily snacks served	723	93
Summer meals total served	33,905 (range 0-288,911)	1,026 (range 0-40,000)
Note: Public school food service facilities answered for all schools in the county or Baltimore City, which means these numbers account for a large number of individual K-12 schools. Private school numbers, on the other hand, are usually for one or a few K-12 schools.		

Current Procurement Practices and Interest in Local Foods

The vast majority of the public schools purchased some locally grown foods during 2008-09, while less than half the private schools did (Table 2). About a third of both purchased directly from farmers. In addition, private schools are more likely than public schools to purchase local foods in every season, except for summer, probably because fewer private schools provide summer meals. The focus on fall season for public schools corresponds with Maryland's "Home Grown School Lunch Week," which is each year in September; however, private schools are also purchasing at higher rates during the fall than at any other time.

Table 2.
Procurement Characteristics of Respondent Schools and Districts, 2008-09
School Year

Aspect	Public Schools	Private Schools
	<i>--Percent--</i>	
Purchased local foods	94	48
Primary vendor offers locally grown products	77	43
Purchased local foods directly from farmer	33	35
Purchased local food summer	44	39
Purchased local food fall	88	94

Purchased local food winter	38	50
Purchased local food spring	63	78

Approximately 80% of Maryland public and private schools were either very or moderately interested in purchasing locally grown foods from farmers in the future, while a fifth reported not to be interested at all. More public schools are very interested in obtaining local foods through a distributor in the future (82% very interested), while only 50% of private schools are very interested; this difference is likely because most public schools are already successfully procuring locally grown foods through distributors.

Barriers to Procuring and Serving Local Foods: Maryland Schools

Table 3 represents the supply and business related barriers that food service directors believe impact their ability to increase the use of local foods. For public schools, the top supply-related barriers include seasonal availability, a lack of processed products, product shelf life/appearance, and a lack of local supply/producers. Private schools, on the other hand, perceive pricing of local foods, developing relationships with farmers, a lack of local supply/producers, a lack of partially processed products, and seasonal availability in the top half of barriers.

Private schools perceive many more business-related barriers than public schools. The top barriers for public schools were: extra staff needed; delivery considerations; liability; and lack of information about where and when local foods are available. The top barriers for private schools were liability, delivery considerations, lack of availability information, payment arrangements, and extra staff needed.

Table 3.
Barriers to Increasing Local Foods in School Meals in Maryland

Possible Barriers	Public Schools	Private Schools
Supply-related aspects	<i>--Percent major or moderate barrier--</i>	
Seasonal availability	93	72
Lack of partially processed product	87	75
Product shelf life/appearance	82	63
Consistent product quality	81	57
Lack of local supply/producers	63	75
Developing farmer relationships	60	75

Pricing of local foods	59	79
Distributor doesn't offer local	57	61
Business related aspects		
Extra staff needed	69	57
Delivery considerations (timing and frequency of backdoor deliveries)	64	75
Liability (farmer compliance with food safety standards)	64	76
Lack of info-availability	57	67
Menu planning	50	57
Lack of facilities	44	40
Multiple orders/invoices	41	51
Internal purchasing policy	38	53
Prime vendor consideration	35	53
Student acceptance	35	52
Payment arrangements	30	58
Lack of prep training	19	41
Interest/school admin	6	25
Interest/school families	0	33

Interest in Farm to School by Maryland Produce Farmers and Challenges Expressed

Most Maryland growers interviewed reported either sales through retail avenues or a combination of retail and wholesale. Two-thirds reported to be farming 5-35 acres of land. Almost three-quarters (68%) had heard of the farm to school programs, but only two farmers reported selling to schools. Forty percent are interested in trying farm to school; however, very small and very large acreage farmers, as well as older growers (>68 years of age) were less interested. Almost half noted that they would be interested if they were assured that the extra volume they would be growing would be paid for, as it would on a marketing contract.

The farmers who have participated in farm to school were positive about it overall, but noted challenges with distribution (e.g., delivery to several different schools) and preferred one central drop-off location. Most other growers agreed that a central distribution location would reduce

barriers for them participating. Other barriers noted by many farmers was the possibility that they would need to get Good Agricultural Practices (GAP) certification, the timing of farm to school being in September or later when harvests are traditionally lower, the need to sell products at above wholesale prices, and the need for contacts in their local areas to get information about the "what, when, and where" of selling to schools or to facilitate between the schools and growers.

Discussion and Implications for Extension Efforts

Maryland public and private schools are a diverse group, varying from very large school systems with centralized facilities feeding over a hundred thousand students a day, to small private schools with minimal procurement needs for school meals. At the same time, this variability provides opportunities for different-sized farmers. While some schools are only interested in sourcing local foods through wholesale avenues, others are interested in procuring directly from farmers. Extension efforts, as a result, need to take into account both the requirements of the school and the capabilities of local farmers.

The results suggest that Extension efforts in Maryland for public schools should be directed to the farm level, processing products and food quality, liability issues, delivery issues, and product information development, while less can be directed toward the food service departments. Given that public school food service directors have been meeting regularly over the last few years to discuss the use of local foods and have received technical assistance from both MSDE and MDA, it is not surprising that many of their barriers exist outside of their institutions. When asked to rate the effectiveness of the Maryland farm to school program, the results supported this, with directors rating the program most effective at educating school food service directors about local food and developing networks for food service directors.

Private school results, on the other hand, show that while some Extension efforts must be made at the farm level, more outreach should be concentrated on food service staff to provide additional information and develop networks with farmers. This was further reinforced in an open-ended question that asked directors what type of information they needed. Private schools were in much greater need of information overall, but particularly about what products were available and from whom. Private schools are not receiving the same level of assistance as the public schools, and the survey results demonstrate this difference. In fact, only 10% of private school food service directors (versus all of public school directors) had heard about the farm to school state program.

At the most basic level, farmers and schools need more information about each other, and many private schools need to be networked into the assistance being provided to public schools. To this end, a product demand list is being created for farmers based on the survey, as well as a set of best practice methods for both food service directors and farmers, taking into account the needs and capabilities based on both school and farm size. At the suggestion of many of those interviewed, county meetings that include all stakeholders should be conducted by Extension professionals in some areas to develop county-specific plans to reduce the barriers to the use of local foods in school meals. Finally, a related effort might focus on pursuing farm produce aggregation centers that can reduce both delivery and supply barriers; Extension has a role to play in bringing together many of the stakeholders that would make such an effort a success.

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