

Barriers and Opportunities to Serving Pulses in School Meals in Washington Schools

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ABSTRACT

Pulses are nutritionally important grain legumes that include dry beans, dry peas, garbanzo beans, and lentils. Schools are required to offer one-half cup pulses per week for each student participating in the National School Lunch Program [NSLP]. A survey of school nutrition directors and nutrition specialists was administered in Washington State to assess barriers, opportunities, and methods of serving pulses in cafeterias. Findings showed that to meet NSLP requirements, pulses were served primarily as a vegetable on the salad bar and as an ingredient in chili. Barriers to serving pulses included lack of equipment and time, especially for dry beans. Recipes using pulses and knowledge on how to prepare pulses were identified needs of the respondents. Survey findings will be useful to encourage school nutrition directors to serve a wider variety of pulses which may in turn increase student acceptance and consumption of pulses.

Keywords: Vegetable food group; protein food group; pulses; legumes; National School Lunch Program; nutrition education; Healthy, Hunger-Free Kids Act of 2010

INTRODUCTION

Ensuring that food provided to children in schools is consistent with current dietary recommendations is an important national focus. The National School Lunch Program (NSLP) serving 30 million meals daily makes it possible for many school children in the United States to receive a nutritious lunch every school day (U. S. Department of Agriculture, Food and Nutrition Service [USDA-FNS], 2015). Thus, school meals play an important role in meeting the nutritional requirements for a large number of children.

The current NSLP recommendations were designed to better meet the Dietary Guidelines for Americans and promote a healthful school eating environment. School lunches must meet meal pattern and nutrition standards based on the latest Dietary Guidelines for Americans (U. S. Department of Health and Human Services [HHS] & U. S. Department of Agriculture [USDA], (2015). Lunch offerings include 3.75 cups of vegetables per week per student for grades K-8 and five cups for grades 9-12 (Healthy, Hunger-Free Kids Act, 2010). To ensure an array of nutrients is offered, the vegetable meal pattern is divided into five subgroups: dark green, red and orange, legumes (pulses), starchy, and other vegetables. Each group has a minimum serving requirement. Schools are required to offer one-half cup of pulses per week per student (USDA-FNS, 2012).

The term “pulse” comes from the Latin ‘puls’ meaning thick soup; pulses are crops in the legume family that produce dry edible seeds (Pulse Canada, 2015). Pulses provide protein, complex carbohydrates, dietary fiber, vitamins, and dietary minerals. Like other plant-based foods, pulses

contain no cholesterol and little fat or sodium (USDA, Agricultural Research Service, 2011). Creditable pulses accepted on the meal pattern are dry beans (kidney, pink, pinto, navy, small red, and turtle), dry peas, garbanzo beans (chickpeas), and lentils (USDA-FNS, 2008). School nutrition may use unprocessed dried beans and legumes as well as commercially processed pulses in the form of canned and frozen dry beans and lentils to meet school meal pattern criteria (National Food Service Management Institute, 2014).

Before implementation of the Healthy, Hunger-Free Kids Act of 2010 (HHFKA), a study of 287 schools nationwide that included 2,314 students in grades 1 through 12 found that even though 96% of school menus included one or more vegetable options, the most frequently offered vegetables (and therefore the leading sources of dietary fiber in school meals) were French fries, corn, and white potatoes, all from the starchy subgroup (Condon, Crepinsky, & Fox, 2009). Following implementation of the HHFKA, the Government Accountability Office (2014) conducted an audit with eight school food authorities that administered meal programs in school districts and found that students expressed dislike for certain foods that were served to comply with the new requirements, such as whole grain-rich products and vegetables in the beans and peas (legumes) and red-orange sub-groups. Dietary Guidelines et al. (2014) assessed school meal selection, consumption, and waste before and after implementation of the new school meal standards in elementary and middle schools. Study results found that after the new standards were implemented, fruit selection increased by 23% and entrée and vegetable selection remained unchanged. The study found that although the new school meal standards did not result in an overall increase in food waste, there was a high level of fruit and vegetable waste both pre- and post-implementation. Students discarded 60% to 75% of vegetables and 40% of fruits on their trays.

Pulses are healthy and inexpensive staple food crops that are served in school cafeterias throughout Washington. A survey questionnaire was developed to obtain quantitative responses from school nutrition personnel and nutrition specialists to describe the current methods, opportunities, and barriers for pulse preparation in K-12 schools in Washington, as well as methods used to promote healthy foods to students in the cafeteria. By identifying the barriers and opportunities of serving menu items made with pulses, schools can target increased awareness and consumption of pulses in the cafeteria, thereby contributing to improved student nutrition intake and reduction of waste.

METHODS

A 13-item survey was developed to identify issues regarding the incorporation of pulses into school menus. Questions included what methods were used to promote healthy food in the cafeteria and how pulses were served (i.e. as a vegetable or protein). Ranking questions included what the respondent thought were the most significant issues regarding serving both unprocessed (e.g., dry form) and processed (e.g., canned form) pulses. Respondents were asked to select from a list the usual procurement sources of pulses. Opportunities for increasing frequency and variety of dishes made with pulses on the school menu were explored with multiple choice and fill-in-the-blank questions. Additional questions included which recipes were most frequently used to serve pulses in the school cafeteria, why the currently-used recipes were chosen, and how healthy “new” foods (such as pulses) were introduced to students in the cafeteria.

In Spring 2014, a description of this study and a Word document survey were sent via email to the state-wide Washington School Nutrition Association (WSNA) list-serve. The researcher did not have access to survey software, so by recommendation of the Executive Director of WSNA, the survey was an attached document included in an email invitation sent to a 150 member list maintained by WSNA. Twenty-two responses were returned via email directly to the researcher, representing a 14.7% response rate. The completed surveys were printed and responses entered into an Excel spreadsheet before being filed in a locked cabinet to maintain the confidentiality of the respondents. This survey was exempted by the Washington State University Institutional Review Board for the Protection of Human Subjects.

RESULTS

Of the 22 completed surveys, 10 responses came from school food service directors and 12 from nutrition specialists. Responses from both the food service directors and nutrition specialists responsible for menu development were comparable, indicating they shared similar perspectives. Responses were received from 12 counties and 22 school districts, representing 30% of Washington counties and 7% of Washington School districts.

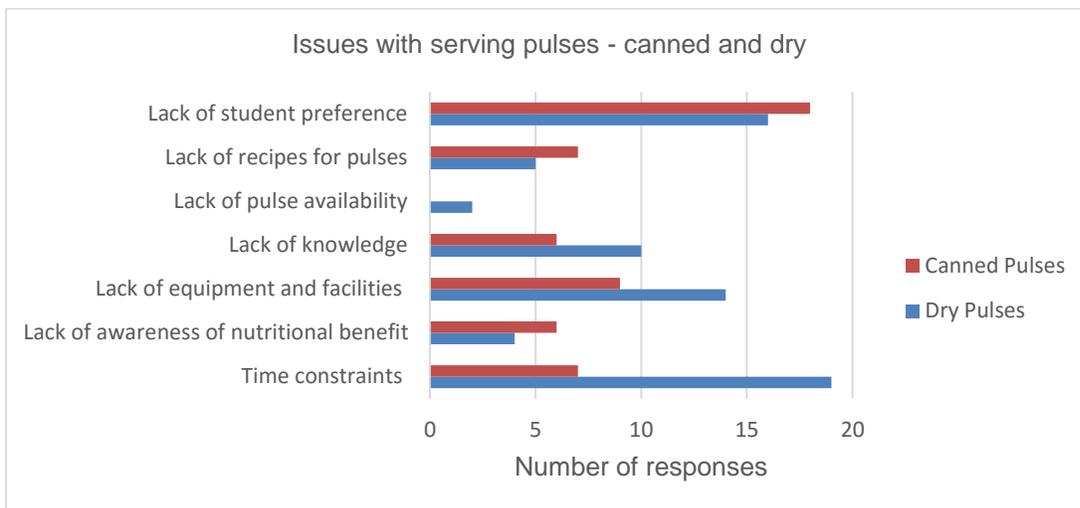


Figure 1. Survey Participant Responses Regarding Serving Dry and Canned Pulses in the School Cafeteria.

Factors Influencing Menu Offerings

Of the respondents, two did not know what a pulse was; 19 were familiar with the term and one did not respond. As seen in Figure 1, most respondents indicate lack of student preference as the greatest issue influencing serving pulses in the cafeteria, whether from dry form (n=18) or processed, canned beans (n=16). Preparing menu items using dry pulses was an identified issue because of lack of knowledge of dry bean preparation techniques (n=10), lack of equipment for processing (n=14) and time constraints (n=19). The soaking required for dry pulse preparation and subsequent cooking of pulses was a major barrier to serving unprocessed, dry pulses in the school cafeteria. One respondent said, “[This is an issue due to] lack of storage area to soak pulses.” Time constraints were less of an issue for processed canned pulses (n=7), but lack of equipment was an identified issue in serving processed canned pulses for over one third of the respondents (n=9). Availability of pulse-based, ready-made products was not an issue for any of

the respondents (n=0); yet the lack of recipes was a factor in menu offerings, with recipes for preparing and serving processed, canned pulses (n=7) a greater issue than recipes from dry pulses (n=5).

Respondents indicated pulse menu items were chosen because they were kid friendly (n=12), to meet USDA meal requirements (n=5), and to reduce food waste in the school cafeteria (n=5). When asked what could help to increase frequency and variety of pulses on the menu, five respondents indicated the Farm to School Program, and two indicated school gardens. History of use (n=1), perceived nutritional benefits (n=1), inclusion of a vegetarian menu option (n=1), and the desire to expose students to healthy foods (n=1) were additional reasons to serve dishes made with pulses.

Pulse Menu Items

Respondents reported they served pulses as a vegetable on the salad bar (n=18) and as an ingredient in chili (n=13). This is consistent with other districts from across the United States in which bean salads are counted as a vegetable. Chili served with cheese is counted as a protein to meet NSLP requirements (VanSlooten & Berkenkamp, 2015).

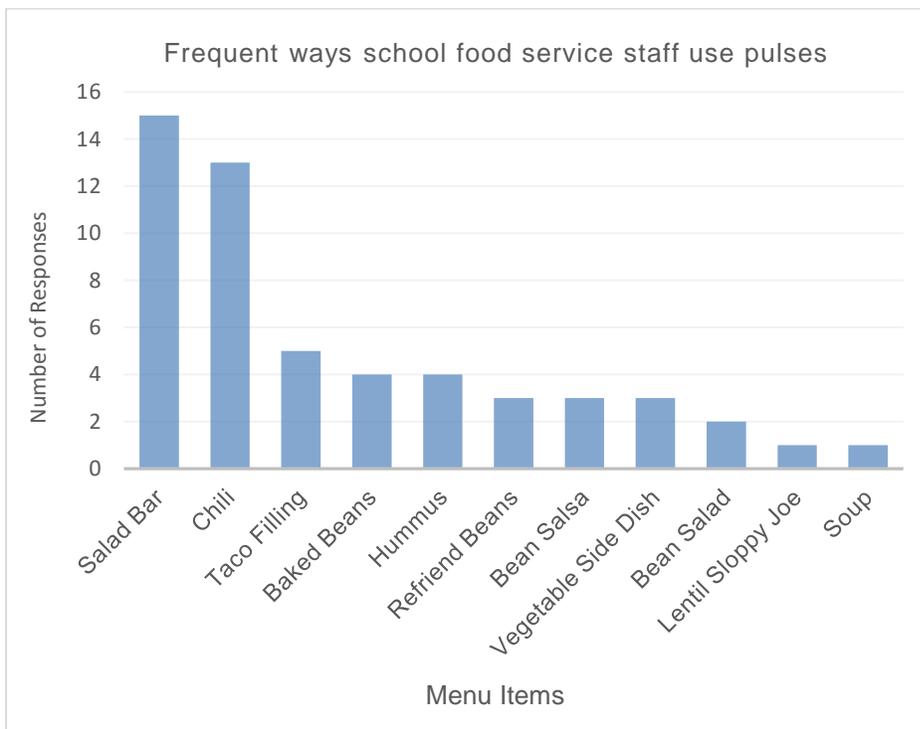


Figure 2. Survey Participant Responses Regarding Frequent Ways Pulses are Served in School Cafeterias.

Heat-and-serve meals were used to some degree by all respondents; six of the respondents always used this method and 13 respondents frequently used this method. Of the respondents, six frequently served meals made from scratch, one reported they always used this method, and two indicated they never cooked meals from scratch. When asked about the three most frequent ways they served pulses, respondents provided an overall total of 13 menu items made with pulses. As seen in Figure 2, 11 of the menu items made with pulses were made with dry beans, including

the three most popular pulse dishes: on the salad bar (n=15), in chili (n=13), and as taco filling (n=5). Respondents indicated healthy food choices were promoted in the school cafeteria primarily through informative posters on the wall (n=17), information on the school website (n=16), and discussions with school food service line staff (n=13). The least-used promotion method was including nutrition labels in the food line (n=1).

School nutrition staff indicated they primarily purchased pulses from food distributors (n=20) and from the USDA Commodity Food Program (n=18). Locally-sourced pulses from farms in respective communities were purchased by seven of the respondents.

Introducing New Menu Items

Sixteen respondents reported they introduced a new food by offering students samples and encouraging feedback about the new food. Other ways new foods were introduced to students included menu labeling (n=6) and signage (n=4). Information posted on the school website (n=16) provides an indirect way to encourage students to eat healthy foods because this media is primarily targeted towards parents and only indirectly reaches students. This suggests that schools may rely on parents to influence students' eating habits and choices. Promotion of healthy food choices through posters displayed in the cafeteria (n=17) and use of appealing and trendy titles for menu items on the cafeteria line (n=10) were strategies reported by respondents in this survey. Heim and colleagues (2009) described additional ways to positively influence food preference among students, including participation in growing foods in the school garden and preparing and taste-testing healthy foods in the classroom.

CONCLUSIONS AND RECOMMENDATIONS

Pulses are a versatile food that can be served in a wide variety of dishes, either as a vegetable or a protein. The majority of survey respondents were familiar with pulses. However, results indicate school menu offerings of pulses were limited to a few selections, such as a salad bar component or an ingredient in chili and taco filling. School nutrition staff most commonly prepared pulse menu items using a canned product and were less familiar with cooking pulses from scratch. Further, survey respondents indicated soaking and subsequent cooking of pulses were major barriers to serving unprocessed, dry pulses in the school cafeteria, and most central kitchens lacked adequate space for these food preparation activities.

The lack of student preference for pulses as perceived by food service staff reported in this survey may be due to the small variety of pulse menu offerings in the cafeterias and to the large proportion of pulses that are served directly from a can and placed on a salad bar (Rueda, 2013). Additional recipes and new product development is needed so school nutrition staff can shift away from serving pulses in such limited ways in the school cafeteria.

There is an opportunity to offer pulses as a protein in school meals providing students with protein equivalents not only lower in fat than meat protein sources, but economical for school cafeterias. An assessment of the school kitchen layout and an inventory of equipment resources may be a valuable planning activity for school nutrition operations as they consider strategies for increasing kid-friendly pulse menu items offered in the school cafeteria. Staff training on processing and preparing pulses may result in pulse recipe development and increasing the number of pulse menu options in the school cafeteria.

Increasing student consumption of pulses could lead to improved student nutrient intake and reduce food waste by students in the school cafeteria. To increase student consumption of pulses, an increase in the variety of pulse offerings is needed, as well as the development of appealing pulse recipes that have good taste and texture tailored to a school district's equipment and staff capacity. Pulse cooking classes and pulse cooking demonstrations with appealing recipes available on publically available media websites such as Deumling (2015) and Atterberry and Miles (2014) would provide skill development for food service staff that could lead to increased menu offerings of pulses.

Schools are using indirect methods (e.g., websites targeted to parents) to promote healthy foods to students. Schools could directly target students to influence their eating habits. Marketing directly to students with information regarding healthy food choices and providing more opportunities for student sampling and feedback could lead to increased acceptance of pulses. Principles of behavioral economics can be incorporated in the cafeteria to nudge students to make healthier choices; strategic placement of pulse menu items on the food line and using catchy/trendy titles to describe pulse menu items may boost consumption (Gutherie, Mancino, Wansink, & Just, 2011).

Limitations

A limitation of this study was the low response rate of the survey. Only 12 of 39 counties were represented in the survey responses, and only 22 of 150 school district contacts were represented in the sample. Using an online survey tool may have improved the response rate. Though this is a small sample, the responses provide insight into understanding the barriers and opportunities for food service and nutrition specialists for including pulses in meeting the NSLP menu standards.

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