



**What Students Are Eating (And Not Eating) For Lunch?
Results from the Thompson School District Plate Waste Study**

The mission of the Thompson School District (TSD) Nutrition Services Department is to feed every child, every day, nutritious and affordable meals. In an ongoing effort to improve our services to students, we have partnered with Colorado State University (CSU) Department of Food Science and Human Nutrition to evaluate our school breakfast and lunch program. Our goal in working with CSU is to understand student’s likes and dislikes, student’s eating habits, and how to encourage students to make healthy choices now and in the future. This partnership has already led to several projects, all completed with the help of CSU graduate students, that provided us with valuable information from which we can develop future enhancements to menus, food quality and the school cafeteria environment.

The first project was an assessment of plate waste (what children don’t eat from their school lunch) at several elementary, middle and high schools. Plate waste can also—indirectly—estimate the amount of food eaten. The purpose of this project was to 1) determine what foods students chose for lunch, 2) estimate how much of those foods they were leaving on their tray, and 3) estimate the nutrients they consumed.

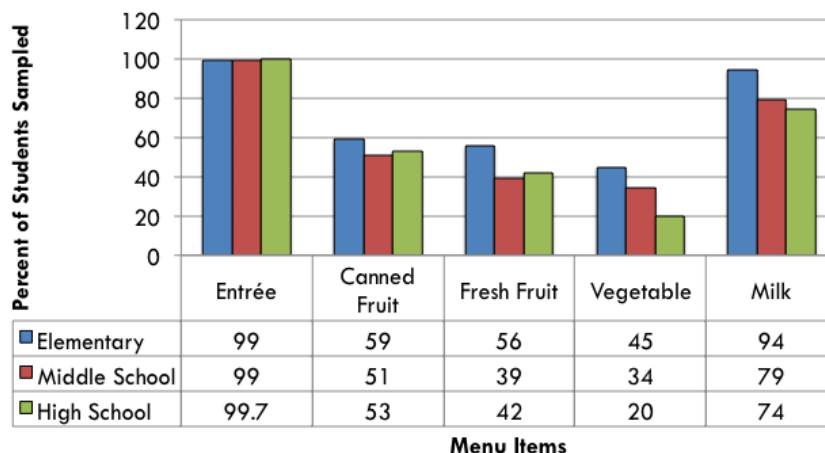
Plate Waste: How it was measured

Plate waste was collected for 4 to 5 day period in each of 3 elementary schools (October 2010), 2 middle schools (November 2010) and 2 high schools (February 2011). A total of 540 elementary students, 390 middle school students and 354 high school students participated in the study. Approximately half the students were boys and half were girls. Plate waste was estimated using digital photography. This involved taking a picture of students’ trays after they finished eating their lunch. These pictures were compared to pictures of all the foods served for lunch that day and the amount of waste on a student’s tray was estimated to the nearest 10%.

What did we find?

First, we wanted to know what students were choosing for lunch. We found they do not often choose fruits and vegetables, even though 3-4 different options are available. The graph below shows, for example, only 56% of elementary students and roughly 40% of secondary students take fresh fruit with their lunch. Also, less than half of all students take vegetables.

Student Food Choices



Second, we wanted to know how much food they were wasting. The amount of plate waste measured at elementary, middle and high schools is similar with the amount of waste reported from other school districts across the U.S. The table below shows the **percent** (%) of foods taken that were wasted (uneaten).

Percent of menu items that were wasted (uneaten)

School	Entree	Canned Fruit	Fresh Fruit	Vegetable	Milk
Elem A	20.2	29.3	25.0	23.8	18.6
Elem B	26.2	42.0	43.9	32.1	33.6
Elem C	24.7	42.0	41.7	43.9	44.9
MS A	16.4	39.4	49.4	35.7	20.9
MS B	22.0	35.8	45.4	25.7	19.8
HS A	14.0	33.0	25.0	39.0	16.0
HS B	7.0	24.0	13.0	13.9	11.0

We found considerably more fruits and vegetables were wasted than other meal items. The results also show that older students ate more of their lunch (waste decreased) and girls tended to waste more food than boys.

What does this mean?

All school lunches are planned to ensure students receive at least one-third of their daily nutrition needs from lunch. However, if students do not take and eat fruits and vegetables, as these results show, they may be missing out on important nutrients, such as Vitamins A and C, potassium, iron and fiber. And, other studies have shown that children typically do not make up for this shortfall later in the day.

Practical Uses for This Information

There are several ways the TSD Nutrition Services staff can use plate waste information. We offer 2-3 fruit and vegetable choices daily but many students are not eating them. So, we are exploring how we can encourage students to choose/select more of these foods when they eat lunch. Several possibilities include changes to the cafeteria environment, cooking and preparation methods, and types and varieties of fruits and vegetables that are offered. We want to ensure all students have a nutritious lunch, so they are well nourished and fueled-up for learning in their afternoon classes.

As parents, there are ways you can help encourage your children to enjoy more fruits and vegetables with their lunch:

- Ask children what they had for lunch that day to find out if they are taking fruits and vegetables with lunch
- Review school lunch menu on the TSD website and serve some of the same fruits and vegetables at home
- Make it a goal to try one new fruit or vegetable at home each week

This project was funded by a member grant from the Coalition of Activity and Nutrition to Defeat Obesity (CanDo) and no district funds were used. If you have any questions about this plate waste study or TSD’s school meals program, please contact Tammie Rempe, Director of Nutrition Services at 970-613-5147 or tamela.rempe@thompsonschoools.org.