



# Safety From Seed to Service

BY PENNY MCLAREN

**Foodservice staff are reliant on suppliers to safely deliver raw produce, but what about when suppliers are your own students, harvesting from a school garden?**

**E**ven in the dead of winter, Torrey Pines Elementary School students often enjoy the freshest and most local of foods for lunch—we're talking, steps-from-the-door local. There's a catch, though: They must provide it themselves.

On January 5, these students from **San Diego (Calif.) Unified School District** harvested 5 pounds of sugar snap and snow peas and delivered them to their school kitchen—that's an impressive amount of peas! It's also impressive that the adults on the cafeteria team know not

only the amount of produce delivered and the date it was delivered to the kitchen door, but can also confirm that it has been handled safely. *How* do they know? The details are reflected on the Harvest Garden Receipt, a mandated component of the food safety rules established for the district's Garden to Café program, says Ashley Cassat, MPH, San Diego Unified's Farm to School program specialist.

Back in 2010, when the program began, Cassat was tasked with not only figuring out how to put school garden produce to good use in district cafeterias but also, just as importantly, how to do it *safely*. What



resulted is the Garden Protocol document, which outlines all the steps the schools must follow if students or staff want to harvest produce from their gardens and serve it at lunch. That document assures Cassat (and everyone else) that the produce is safe to use, just the same as from any outside supplier, making the school garden an approved source for school meal ingredients and menu items.

How do you keep food safety in mind when it comes to hauling in a bountiful harvest from a school garden to add to lunch in the cafeteria? Can you be assured of safety when students are doing the

work? It requires careful planning of every step and element that is a part of raising any garden crop, from the time the garden is plotted out to the seeding and weeding to the gathering of what grows.

This month, *School Nutrition* will offer best-practice tips to share with members of your team, other staff, volunteers and students that will allow everyone involved to plan and grow a school garden with food safety in mind! We'll start with the gold-standard practices in effect in San Diego Unified, but also touch on steps taken in other communities around the country.

## Food Safety First

**F**ood safety starts long before the produce is prepped in the cafeteria. Only by knowing *everything* about the site, soil, water and seeds, plus a few more particulars, can you ensure that what grows is good enough to be served in schools.

Ideally, a school garden protocol should follow the same Good Agricultural Practices (GAP) and Good Handling Practices (GHP) that commercial farmers are asked to meet. These are voluntary audits from USDA that verify that fruits and vegetables are grown, packed, handled and stored as safely as possible. The Institute of Child Nutrition (formerly the National Food Service Management Institute) expands on these practices as they specifically relate to school gardens in its document *Food Safety Tips for School Gardens*, which can be located at <http://tinyurl.com/NFSMIgap>. Decisions that must be made and protocols that must be followed involve multiple areas:

**Locating the site.** Ensure that the garden area is kept separate from anything that might contaminate the ground or the water used in growing plants. Specifically, you want to site a garden away from any garbage containers, utilities, septic systems, animals and areas of water runoff or potential flooding.

**Inspect and test existing soil.** It might be best to add commercially purchased soil to your garden. This is a complicated step, so you should check with county extension offices for soil advice.

**Keep pests out.** Inspect for intrusions by any animals. Not only do you want to keep them from eating your harvest, you want to ensure they don't defecate around your plants. Site and protect your garden so that animals can't get to it. Develop barriers to keep wildlife out, such as fencing or netting. Discard plant materials that seem to have been contaminated by animals.

**Build supports.** For garden

structures and raised beds, use only non-toxic, non-treated lumber. Avoid any use of railroad ties, tires or old painted bricks.

**Plant and tend to crops.** Select plants without any known allergens or toxins. Use municipal water sources or test any other water sources for safety. If it is necessary to transport water, put it in food-grade containers. (Don't allow kids to drink from hoses when they are seeking relief on a hot day in the garden.)

**Avoid chemicals.** Resist using herbicides, fertilizers and pesticides. Ensure that those handling general pest management for the school site keep their operations far away from the garden. If chemicals must be used in the garden, only adults should handle them. Use and then store these chemicals properly in a secure location.

**Compost safely.** Avoid use of raw or composted manure, and consider purchasing a commercial compost, or using vermicompost. Store your compost away from the garden and protect it from pests. Fruit and vegetable trimmings that were collected during meal preparation and prior to service may be used in your compost, but only plant products should be composted, and no cafeteria waste. Always wash your hands after handling compost.

**Wash hands regularly.** Everyone involved should wash their hands before and after going out to harvest and after using the bathroom. Have a wash station located right in or near the garden if possible. Provide one-use gloves, particularly if a hand-washing station is not available.

**Proper harvesting.** Use acceptable food-grade harvest containers. Ensure they are regularly cleaned and sanitized and stored properly away from the garden. Anyone ill or recently ill should not be allowed to work in the garden.



### How Safe Does Your Garden Grow?

Of the 200 schools that make up the San Diego district, all feature salad bars in the cafeterias, and more than 100 have school gardens. Most of these gardens yield a small amount of produce that students can take home or that can be used in classroom sampling as part of a learning exercise or assignment. However, 23 school plots have been Garden to Café-certified, meaning they provide produce to be used in their cafeterias, usually offered on the salad bars. The number of participating schools continues to increase, as more site operators are trained and certified.

The San Diego Garden Protocol document that outlines food safety guidelines was developed in collaboration with the district's Food and Nutrition Service department *and* the County of San Diego Department of Environmental Health, both of which take active roles in certifying school gardens. When signed, the document gives conditional approval of a school garden as a source for ingredients or menu items served in school cafeterias. It must be signed by the garden leader, co-leader and principal at the school level, a foodservice area supervisor

## Burlington (Vt.) School District



**D**oug Davis, SNS, is director of the **Burlington School Food Project at Burlington (Vt.) School District**, where he oversees 12 schools. Every school has a garden, and one elementary school even includes an orchard! “It is a great learning tool *and* a great marketing tool,” boasts Davis. “We can grow enough of certain items, like basil for pesto or kale to supplement what we buy. It is nice for kids to see these things growing in the garden. They make that connection—see it in the garden, see it in the cafeteria.”

**The Plot.** City water is available to all gardens. “We are blessed with water, so that is not an issue,” says Davis. There are hydrants in some of the gardens, and the others have easy access to water, so there is no need to haul water from a distance. All compost is purchased commercially. He recognizes

that animals can get into the gardens, but treats this as he does the reality faced by local commercial farms that provide produce to the foodservice department. “That shows the need for us to be diligent in the washing of produce in the foodservice operation.”

**The Harvest.** Everything in Burlington’s school gardens is grown organically and according to Good Agricultural Practices (GAPs), says Davis, meaning that pesticides are prohibited and the school gardens use only natural fertilizers, not chemical-based options. However, most of what is harvested goes to the students to take home. Still, there is value in harvesting even when the crop doesn’t actually get to the cafeteria. Davis says that sometimes the crop harvested in the garden is often the same as one featured on the menu, and although the actual vegetables from the garden may not be used in school meals, just the fact that it is the same vegetable brings the lesson home.

“The value of the garden is so much more than the value of the vegetables grown,” claims Davis. “It is a useful teaching tool, even if what we serve is not literally off the same plant the kids harvested. They learn how much work it takes to create foods in a meal.” What school crops are used in foodservice is a “very small fraction” of the menu, according to Davis, but it is all treated the same as items from any other supplier.

**The Gardeners.** “We do need to recognize the need for food safety above all,” says Davis. “We do stress handwashing and other proper procedures.”

and a foodservice site leader. Cassat also signs off on the certification, as does a San Diego Department of Environmental Health representative, once the garden inspection has been completed.

The document covers a long list of requirements that must be checked off for each garden, reviewing such areas as water quality, protection from contamination, pesticide and herbicide use, compost, sanitary practices in the garden, protocols for harvesting garden produce, student sanitation and inspection and notification. Additionally, a questionnaire must be completed that describes the garden site and plant list and verifies all the previously outlined food safety measures. Finally, there’s the aforementioned Garden Harvest Receipt—two copies of the completed receipt must be delivered by the garden coordinator to the kitchen with each harvest.

### The Plots

In San Diego, vegetables are grown primarily to be consumed raw. The selection is entirely up to the gardeners, so the choices will vary, from lettuce to kale to spinach and from zucchini to tomatoes. Cassat runs special promotions for the



## Denver (Colo.) Public Schools

**A**nne Wilson, MS, RD, Food Service supervisor, is the Farm to School coordinator for **Denver Public Schools** and manages the school garden program for foodservice. Of the 100 schools in the Denver district, some 15 to 20 sites provide produce to their school cafeterias, and four schools actually have half- to one-acre farms.

The program has been in operation since 2010 and receives support from Slow Food Denver, Denver Urban Gardens, the Denver Department of Environmental Health, Kitchen Community, Colorado State University and the Colorado Department of Agriculture. A unique aspect of the program is that the Food Services department actually *pays* schools for the harvested fruits and vegetables it receives for use in school meals. They receive the same price as is awarded in the bid program to their other fresh produce supplier.

The money that schools earn goes back to the garden program to help cover costs. Over the season, most school gardens harvest roughly 100 pounds or less, and receive about \$1 per pound. Some school sites also offer produce through a farm stand or farmers market, especially those sites located in parts of the community that are a food desert and healthful fresh produce is otherwise scarce. Those profits, too, go back into the garden program, while the lessons and experience accrue to the students. The rest of the produce in the school gardens is used for cooking classes to teach students about healthy eating habits.

**The Plot.** City water sources are available for all gardens, and use of rain barrels is prohibited. Soil amendments are properly composted, and no raw manure is used. Most school gardens purchase commercially produced compost to use on their plots, but the decision is up to each school to decide. The harvest season is short, only August to October, after students plant the garden in the spring.



The gardens are in the open, so animal visits can be a problem. Student and adult gardeners are trained to watch for their signs. "Our biggest adversaries are bunnies," recounts Wilson. "They will wipe out a crop. Slow Food Denver and the Denver Urban Gardens group has helped us learn how to deter bunnies. We do have to watch for signs of nibbling. We can't use anything if there are such signs and must be careful to discard anything affected."

**The Harvest.** Food-grade containers to collect the harvest were donated to the schools by Whole Foods Market, and they are cleaned, sanitized and stored in the kitchens. Harvest usually takes place on Monday, and the produce must stay on the same school site and brought directly to kitchens the same day. It must be refrigerated for 24 hours and used at lunch on Tuesday or Wednesday of that week.

**The Gardeners.** The program follows modified GAP guidelines, and adults and parents involved participate in food safety training every year. "Probably the most important part of the harvest is personal hygiene on the part of the kids," notes Wilson. "Hand washing is very, very, important." In addition, they use single-use gloves when gardening. Students who have been sick are barred from the garden for two weeks after an illness; teachers are expected to monitor their students and give the all-clear when students can return to the garden.

gardeners and distributes free seeds, soil and other gardening items as incentives.

While all schools themselves are fenced, some school gardens have an additional layer of fencing. Those sites without garden fences can't control for any animal visits, and if any evidence of animal presence is found, particularly their waste, the adjacent plants and produce are discarded.

Watering is handled either via automatic irrigation systems or hand watering, but all is sourced from clean city water. The teachers and staff know that the site can't be contaminated from any chemical use nearby, and garden coordinators cooperate closely with pest management workers. Compost comes from vermicompost or from pre-consumption plant materials and fruit and vegetable trimmings. Compost is kept in appropriate compost-generating containers or a contained compost pile.

### The Harvest

When the time comes, harvested produce is collected in sanitized food-grade containers. Students are required to use one-use gloves when harvesting their crops, and the cost of these is borne by the school garden program. Cassat provides the containers at her department's cost, and these are cleaned and sanitized after every use and stored in the kitchens. Harvests can be erratic, ranging from once a week to (more commonly) once a month. All crop deliveries must be weighed.

Produce must be delivered to the cafeteria on the day it is picked. Once it arrives, it becomes the responsibility of the kitchen staff to continue the safe handling protocols. Items are refrigerated, then processed and used in the lunch service the next day. Foodservice staff clean items in the food prep area according to approved methods.

Upon harvest delivery, the garden coordinator initials two copies of the site receipt and leaves them with the kitchen staff. The site leader initials the receipts, keeps one and sends the other on to the foodservice area supervisor, who retains the receipts so the food source is recorded as part of food production records.

"If a child ever were to get sick, the records can be checked," notes Cassat.

## Litchfield (Ariz.) Elementary School District #79



Each of the 14 schools in Litchfield (Ariz.) Elementary School District #79 has a garden, with six sites having notably larger plots. In fact, just as School Nutrition contacted David Schwake, RD, SNS, Food Services director, he was heading off to water one of those gardens!

In hot and dry Arizona, the growing seasons are the opposite of that of a northeastern district like Burlington, Vt. The growing and harvest season begins in September and extends all the way through May. The district school garden plots go dormant, for the most part, in July and August during summer vacation. A significant harvest is reaped in May and June.

**The Plot.** Water comes from city taps, which is an approved source. Many of the crop beds are set with sprinklers on automatic timers. Compost is purchased from a nearby organic farmer, and no fertilizer or other chemicals are used. The beds are not gated or fenced, so the

garden teams do have to be vigilant about possible visits by animals.

**The Crops.** Schwake says they use just “the good Arizona dirt” in garden beds, as anything grown in it “just jumps right up”—especially leafy and purple greens. In the past, he received donated plants, and recently was gifted with 500 cabbage sets, causing participants to be overrun with a cabbage harvest. Other quick growers include tomatoes, green beans, squash, carrots and giant sunflowers.

**The Harvest.** The yield from the gardens does not go to school kitchens, but rather home with the students who picked it—or sometimes they pick and eat it before they get back to the classroom! However, Schwake said that groups within the state of Arizona, including the state departments of Agriculture, Education and Health Services are working together to establish procedures to allow cafeterias to accept crops from the school gardens for use in school meal programs.

“We keep the documentation, just in case it is ever needed. Our liability is only for what is served in the cafeteria, not what is used in taste-testing or other applications in the classroom.”

### The Gardeners

Garden coordinators take responsibility for the operations of the plot. At middle and high school sites, this person is generally a teacher or other member (such as a library staff member or a science teacher). For gardens at the elementary schools, parents generally serve as volunteer garden coordinators. All garden coordinators—volunteer or staff—must participate in a formal training conducted by Cassat, so they are informed of proper food safety procedures. (Students are not provided this level of training.) Coordinators are responsible for inspecting what is harvested and seeing that proper handling procedures are followed.

### Following the Harvest

School gardens have been around for a good long time, and a natural destination for what grows in these gardens is the cafeteria—at least if a significant harvest is raised. But before agreeing to receive and serve school garden crops, school nutrition operators must make food safety a top consideration. Be sure you and your team work with school garden coordinators to treat this most-locally grown harvest with utmost care.

In San Diego, foodservice staff post a sign on the salad bar that spotlights the fact that the kale, cucumbers or carrots—or whatever harvest items are featured—was picked from the school garden. All student customers then know that the items they helped to nurture and grow are being served for lunch. The biggest payoff is in the pride kids have in their harvest. Those students, and their fellow classmates, feel a real boost when “their” garden product is on their own school salad bar. What a sense of accomplishment! **SN**

---

**Penny McLaren** is a freelance writer in Vancouver, Wash., and a former editor of this publication. Photos courtesy of **San Diego Unified School District, Burlington School Food Project, Denver (Colo.) Public Schools** and **Litchfield (Ariz.) Elementary District #79**.

**BONUS**  
WEB CONTENT

Get the details on how school nutrition operations in Maine and Texas manage their school gardens for food safety risks. Visit [www.schoolnutrition.org/snmagazinebonuscontent](http://www.schoolnutrition.org/snmagazinebonuscontent).