



Food Safety Tips for School Gardens

Schools across the nation are using gardens to help children discover where food comes from and to develop healthy eating habits. Some school nutrition programs have found that gardens provide a way for children to become more accepting of new fruits and vegetables. School gardens may be managed by teaching staff, student clubs, or the school nutrition program. Regardless of who is in charge, produce from school gardens can be served safely to students when basic food safety precautions are followed in planting, growing, and harvesting.

Produce may become contaminated during growth, harvest, transportation, preparation, or service and result in foodborne illness. Potential risks to school garden produce are mitigated by applying Good Agricultural Practices (GAPs) and Good Handling Practices (GHPs) during growing, harvesting, and serving. The practices addressed in this document will help garden coordinators and nutrition program operators enhance the safety of fruits and vegetables grown in school gardens. Produce grown in school gardens may be served in the garden or in the classroom, but care should be taken when preparing and serving. For additional tips on handling go to, *Handling Fresh Produce in Classrooms*, available at: <http://nfsmi.org/documentlibraryfiles/PDF/20110822025614.pdf>

Some school districts and local health departments have created local food safety guidelines regarding serving food grown in gardens. Be sure to check with your local regulatory agencies before serving school garden produce in school meal operations. Below are GAPs and GHPs to consider.

Site Selection, Materials, and Water Use

- Locate gardens away from, or on higher ground, than potential contamination sources (garbage, utilities, animals, water runoff, flooding, septic systems, etc.).
- Where possible, locate the garden near municipal water source for ease in watering plants and cleaning.
- Contact the utility companies or call 811, the national *Call Before You Dig* number, a few days before digging to ensure that you avoid gas or electric lines.
- Test ground soil to determine levels of contaminants such as chemicals, pesticides, and heavy metals, such as lead, barium, cadmium, etc., especially if located near high-traffic zones or industrial areas. Contact your local Cooperative Extension Office for information on soil testing services available in your area.
- Consider purchasing soil that has been commercially packaged and labeled for growing food crops. Soil purchased from a commercial source ensures traceability and protects from any potential physical contaminants that might be found in the soil.
- Create reasonable barriers to keep animals (wild and domestic) away from the garden. Examples include fencing, electric fencing, or cages over produce items such as strawberries and leafy greens. In high-risk areas, consider fencing with a locked gate to prevent unauthorized individuals from gaining access to the area in order to deter both intentional and unintentional contamination.
- Use non-toxic, non-leaching materials for raised-bed gardens, containers, stakes, or trellises. Pressure-treated wood, used tires, single use plastics, old railroad ties, etc. are not safe to use because of potential contamination.





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- Select non-allergenic and non-toxic plants. Check with your local Cooperative Extension office if you need assistance determining plant safety or toxicity.
- Test all non-municipal water sources at least annually, including rain barrels, cisterns, ponds, streams, wells, etc. for potentially harmful organisms to make sure they meet the standards of the Environmental Protection Agency (EPA). A good screening test is fecal coliform. For more information on potable water, go to the EPA website, available at: <http://water.epa.gov/drink/contaminants/basicinformation/pathogens.cfm>, or contact your local Cooperative Extension Office for assistance.
- If not using potable, municipal water, maintain water testing records.
- Use clean, food grade containers to transport water.
- Do not allow students to drink from the watering hose; the water may be safe, but the hose may harbor parasites.

Chemical and Fertilizer Use

- Do not use any pesticides or herbicides due to potential health hazards to children.
- Check with your county Cooperative Extension Office for the best non-chemical method of control for local pest problems.
- Read and follow the manufacturer's instructions when using fertilizer.
- Secure all fertilizers in a safe and locked location when not in use.
- Allow only adults to handle fertilizers.
- Check with your local health department about applicable Occupational Health and Safety Administration (OSHA) hazard communication requirements. Maintain Material Safety Data Sheets (MSDS) as required. More information is available at: <http://www.osha.gov/dsg/hazcom/index.html>.
- Maintain information on safe use and potential hazards that is available on product labels or from the manufacturer, for all fertilizers.
- Label the container with the common name of the fertilizer if transferring fertilizers into a dispensing container. Never use a food container.
- Dispose of fertilizer and its containers according to the manufacturer's instructions.

Compost and Manure Use

Schools are composting non-protein waste safely across the nation. That said, composting is a complex process that requires attention to specific procedures and conditions. This fact sheet is not comprehensive. Contact your local Cooperative Extension Office, or a composting expert for assistance.

- Avoid the use of raw manure. Composting raw manure for school gardens is not recommended due to increased risk of contamination from pathogens that are not completely destroyed.
- Consider purchasing traceable, commercially prepared compost that is safe for use in edible gardens if manure-based compost is desired.
- Consider using worms to form vermicompost. Learn more about vermicomposting at: <http://www.bae.ncsu.edu/topic/vermicomposting/> or watch the *Vermiculture* video available at: <http://www.nfsmi.org/ResourceOverview.aspx?ID=513>



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- Add only plant products, such as fresh fruit and vegetable culls from food production (apple and pear cores and vegetable trimmings), to a school compost pile. Other plant material, such as grass clippings, leaves, and twigs may be added to fruit and vegetable waste.
- Do not use animal products, animal waste, or any cafeteria waste that **might** have animal products in compost. Harmful pathogens might be introduced through animal products in compost material. These products must be properly managed to ensure their destruction.
- Always wear gloves when handling compost material.
- Locate the compost pile in a secure location away from potential contamination, such as garbage, water runoff, etc. Restrict access by animals as much as possible.
- Avoid contact with compost if you have a mold allergy.



Growing and Harvesting Produce

A school garden provides an opportunity for children and volunteers to learn about how to handle food safely. The following are some food safety tips to follow when growing and harvesting produce.

- Ensure that all persons, including staff, students, and volunteers receive basic food and gardening safety training instructions. The following topics are recommended:
 - ◆ Handwashing and personal hygiene
 - ◆ Cleaning and sanitizing garden equipment and containers used to hold produce
 - ◆ Handling produce during harvest, washing, and transportation
 - ◆ Glove use
- Ensure that volunteers are covered by the school district insurance policy in the event of accident or injury.
- Obtain parental permission to work in the garden. It is recommended that the school garden permission be integrated into the general school paperwork at the beginning of the school year or use a waiver that allows parents to opt out of garden activities, without requiring every student to have a slip. Permission slips should explain the environment and activities in which the child will engage, and inform those with allergies to discuss further with the school nurse or healthcare provider.
- Do not allow anyone to work in the garden while sick, or until 24 hours after symptoms, such as vomiting or diarrhea, have subsided. Consider developing alternative activities for these students such as worksheets or journaling so that they do not come into contact with food, plants, or gardening supplies.
- Ensure that all harvesters wash hands thoroughly in warm, soapy water for at least 10 to 15 seconds, and then rinse with potable water. Ensure that all open cuts or wounds on hands, arms, or legs are properly covered prior to participating in the harvest. Hand washing should occur away from harvested produce.
- Require harvesters to wear closed-toed shoes to prevent cuts, stings, or other injuries.
- Consider using single-use disposable gloves when harvesting, or handling, fresh produce as an extra precaution.
- Harvest the garden regularly and remove any rotten, damaged, potentially contaminated (bird droppings, animal nibbles) produce. Unusable produce may be added to the compost pile.



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- Use cleaned and sanitized food grade containers, such as plastic bins or buckets, to hold harvested produce. Do not use garbage bags, garbage cans, and any container that originally held chemicals. These types of containers are made from materials that are not intended for food use.
- Clean harvesting tools, such as knives, scissors, etc., with soap and potable water immediately before harvesting.

Using School Garden Produce in your School Meals Program

- Check with your local health department to determine if local policies exist.
- The USDA does not prohibit the use of school garden produce in school meals. The school nutrition director does have the responsibility to ensure that all products are safe.
- If the harvest from the school garden will be used in the school meals program, the school garden coordinator should work cooperatively with the school nutrition director to plan the use of harvest from the garden the garden into school menus. Items to discuss include what crops to grow, quantity needed, estimated harvest time, food safety practices, product quality, delivery logistics, etc.
- School garden coordinators should be aware of food safety practices in the garden. This knowledge may be documented with certificates showing completion of training in GAPs and GHPs. Online and face-to-face workshops are available through Cooperative Extension. Use the information in this document as a guide to identify appropriate garden practices.
- See *Best Practices: Handling Fresh Produce in Schools* for guidelines on receiving, storage, preparation, and service of fresh produce in schools.
- Reject produce that does not meet school nutrition program standards.
- Receive and inspect produce harvested from school gardens according to the same procedures used to inspect produce from the district's distributors.
- Do not use any produce that has been noticeably contaminated by animals or insects.
- Refrigerate garden produce immediately, unless the particular item is normally held at room temperature.
- Store school garden produce separately from other sources of produce to maintain traceability.
- Document service of school garden produce on the menu management/food production record. See *Ensuring Traceability of Fresh Produce* for more information.
- Remember, growing your own food extends your contribution to the food chain and the responsibility for food safety that goes with it. It may be wise to check with your district's insurance department to ensure that you are covered in the event of a foodborne illness claim.





Food Safety Tips for School Gardens, continued

Addressing Community Donations

Members of your local community, or staff or faculty at your school(s) may want to donate produce grown in private or community gardens to your school meal programs or to your school(s). Although their intentions are good, these products must be safe and of acceptable quality to serve in your school meals program. Acceptance of produce donations in the same condition as fruits and vegetables that you would normally receive is allowed by the USDA.

- Check all local and state health regulations regarding receiving community donations before you accept these products.
- Provide information to community members about USDA policies and regulations for school meal programs and state, local, and school district health requirements that you must follow. Address questions in a positive manner.
- Communicate guidelines and expectations for growing and handling practices for any fruits or vegetables used in your schools. Cooperative Extension, USDA Farm to School, and the National Food Service Management Institute have resources available such as developed standard operating procedures for procurement and checklist(s) to identify farm practices. Share this information with individuals or groups who are interested in donating produce to your schools.
- Visit any gardens that supply produce to your school nutrition program to evaluate food safety practices. Discuss the practices in this document with gardeners. (See *Verifying On-Farm Food Safety* for additional information)
- Only accept donations that are dropped off when a school nutrition staff member is present to receive them. Identify source, date, and refrigerate immediately, unless room temperature storage is recommended.
- Conduct a visual inspection of any vehicle used to transport produce to a school to assess whether it is clean. A vehicle should not be used to transport fresh produce if it is also used to transport live animals.



Resources

Bucklin-Sporer, A. & Pringle, R.K. (2010). *How to grow a school garden: A complete guide for parents and teachers*. Portland, OR: Timber Press, Inc.

Institute of Child Nutrition; *Ensuring Traceability of Fresh Produce*, available at: <http://nfsmi.org/documentlibraryfiles/PDF/20110822025525.pdf>

Institute of Child Nutrition; *Handling Fresh Produce in Classrooms*, available at: <http://nfsmi.org/documentlibraryfiles/PDF/20110822025614.pdf>

Institute of Child Nutrition; *Verifying On-Farm Food Safety*, available at: <http://www.nfsmi.org/documentlibraryfiles/PDF/20110822025822.pdf>



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Iowa State University Extension; *Produce Food Safety for School and Community Gardens*, available at: <http://www.safeproduce.cals.iastate.edu/elementary/>

National Food Service Management Institute; *Best Practices: Handling Fresh Produce in Schools*, available at: <http://www.nfsmi.org/documentlibraryfiles/PDF/20100826093915.pdf>

National Gardening Association, available at: www.kidgardening.org

North Carolina State University and North Carolina Cooperative Extension, *Growing Safer Gardens*, available at: www.growingsafergardens.com

McGrath, M. (2006). *Book of Compost*. New York: Sterling Publishing Company, Inc.

School Composting: A manual for Connecticut schools, available at: http://www.ct.gov/deep/lib/deep/compost/compost_pdf/schmanual.pdf

State of California, *Safety in the garden*, available at: <http://www.cde.ca.gov/ls/nu/he/gardensafety.asp>

University of Maryland Extension Grow It Healthy, available at: www.growit.umd.edu

University of Rhode Island, Connecticut, Maine, New Hampshire and Vermont. *Garden to Table: Five steps to food safe fruit and vegetable home gardening*, available at: <http://www.sde.ct.gov/sde/LIB/sde/pdf/DEPS/Nutrition/OPmemos/10/5stepsOM1010.pdf>

USDA Food and Nutrition Service, School Garden Resources, available at: <http://www.fns.usda.gov/farmentoschool/census/resources#sg>

Note: USDA's Food and Nutrition Service has addressed questions regarding the operation of a school garden in two memorandums:

Memo SP 32-2009, dated July 29, 2009: http://www.fns.usda.gov/cnd/governance/Policy-Memos/2009/SP_32-2009_os.pdf.

SP06-2015, dated November 12, 2014: <http://www.fns.usda.gov/sites/default/files/SP06-2015os.pdf>

While these policy memorandums outline how school food authorities may operate or purchase foods from school gardens, school nutrition programs are not required to grow or use any produce from school gardens.

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