

## Reducing the risk from E coli O157 in School Gardening and Vegetable Preparation.



E Coli O157 is a virulent pathogen which is associated with animal manure and soil, and which can cause severe illness and death when consumed in very small doses. It is particularly dangerous for very young children and people with immune deficiency.

Animal manure, and soil in general, contains bacteria, and may harbour pathogens which can cause illness if ingested. Some of these organisms, e.g. E coli O157, can cause severe illness at low doses. Young people are at particular risk from these pathogens. Produce grown in gardens can be contaminated during growth, harvest, processing, transportation, preparation, or service and result in foodborne illness. There is also a direct risk to pupils and staff involved in the gardening, harvesting, and produce washing operations, and this risk must also be addressed. Robust methods must therefore be put in place to ensure such risks are reduced to the lowest level possible.

This document is intended to help schools ensure that the gardening activities carried out in the school garden, and the food produced there, do not result in a risk to the health of the pupils or staff involved.

The gardening operation should be addressed as part of the School Health and Safety procedures, and appropriate controls and monitoring put in place to ensure the risks are adequately controlled at all points of the operation. You should consult your health and Safety advisor on this point.

## Site Selection, Materials, and Water Use

- Locate gardens away from potential contamination sources (waste bins, utilities, animals, water runoff, flooding, septic tanks, etc.).
- Identify soil history. In addition to animal pathogens, there may be contaminants such as chemicals, pesticides, lead, etc., especially if located near high-traffic areas. Contact a Contaminated Land Officer at Moray Council for further advice if you have any doubts as to the previous use of the land.
- Create effective barriers to keep wild animals away from the garden. Examples include fencing or cages over produce items such as strawberries, leafy greens, etc. Animal manure carries disease.
- Consider using raised beds with soil from a known source. Commercially available compost could be used for example.
- Use non-toxic, non-leaching materials for raised-bed gardens, containers, stakes, or trellises. Do not use pressure-treated wood, used tires, single use plastics, old railroad ties, etc.
- Consider the safety of all water sources. Mains water is fine, but ensure any cisterns, tanks etc are protected against birds, rodents and other sources of contamination. Runoff from roofs may for example contain bird droppings. Environmental Health may be able to assist with testing of water if necessary. Private water supplies if used must be tested.
- Use food grade containers to transport water.

## Compost and Manure Use

Do not use animal manure if possible and NEVER without proof it has been properly composted.

- Avoid the use of raw manure, as it increases the risk of contamination from pathogens. We recommend animal manure is not used. Manure may only be used if composted under strictly controlled conditions. [Guidance here](#). Proof MUST be obtained.
- Even the use of composted manure in school gardens is not recommended due to increased risk of contamination from pathogens that are not completely destroyed.
- Consider purchasing traceable, commercially prepared compost, if manure-based compost is desired.

- Add only plant products, such as fresh fruit and vegetable culls from food production, to a school compost pile. Other plant material, such as grass clippings, leaves, and twigs also can be added to fruit and vegetable clippings.
- Do not use animal products, animal waste, in a compost heap. Harmful pathogens might be introduced through animal products and must be properly managed to ensure their destruction.
- Locate the compost heap in a secure location away from potential contamination, such as waste bins, water runoff, etc. Restrict access by animals as much as possible.

## **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. A proper handwash station with soap and paper towel dispensers should be provided and children should be supervised to ensure they carry out handwashing properly to an accepted standard, such as the NHS method, or Cooksafe method.
- Use gloves to reduce hand contact with soil.
- Ensure that all open cuts or wounds on hands, arms, or legs are properly covered prior to participating in the harvest.
- Pupils to change footwear after gardening, and wash hands afterwards.
- Use cleaned and sanitized food grade containers, such as plastic bins or buckets, to hold harvested produce.

## **Using School Garden Produce in your School Kitchen**

All handling of vegetables within the school should be in accordance with the school Food Safety Management System. Controls should include:

- Vegetables should receive a first clean/top/tail before being brought into the kitchen, to remove loose soil.
- Vegetables should be stored in a “Raw Food Only” food area of the kitchen prior to washing
- Soft fruit should be stored in an area separate from vegetables prior to washing, and should be washed separately to vegetables. Fruit is less likely to be contaminated, but may be eaten without cooking.

- Vegetables for salad production must be washed especially carefully as they will not be cooked.
- Sinks used for washing vegetables etc must be cleaned and then disinfected using a chemical conforming to EN 1276 or EN13697 applied according to the manufacturer's instructions, before being used for any ready to eat food or food contact equipment.
- Separate designated equipment must be used for unwashed vegetables. This equipment including knives, containers, chopping boards, must not be used at any time for ready to eat foods.
- Do not use any produce that has been noticeably contaminated by animals or insects.