

## Land Use

**M**inimizing the risk of foodborne illness from produce begins on the farm itself. Whether you are considering growing fruits or vegetables on a new piece of land or you have been growing produce for many years, it is worth thinking about the characteristics of the land you are using and how it has been used in the past.

**Land use – Some land uses may not be acceptable for growing edible fruits and vegetables. These uses may lead to contamination of the produce by disease-causing microorganisms referred to as pathogens. The land uses listed below may need to undergo soil testing or a waiting period before crops are planted.**

- ◆ Land with intensive animal use. Areas that have been used for intensive animal production are a good example. Pathogens shed by animals such as certain harmful types of *E. coli*, *Salmonella* spp., *Listeria* spp. and *Yersinia* can survive in the soil under certain conditions for several months to a year. Because the amount of pathogens can be higher in soils where intensive animal production has occurred, do not plant in these areas for several months after the animals have been removed from the site to allow time for die-off.
- ◆ Land with application of human waste. These are land areas where septage, biosolids, dissolved air flotation (DAF) skimmings or other organic by-products from sewage treatment have been applied. These by-products can have disease-causing bacteria, viruses and parasites. The number of pathogens in the soil is reduced over time by ultra-violet light, competition from other soil organisms, and fluctuating soil moisture and temperatures. Wait at least three years before planting edible fruits and vegetables on a site that has had these products applied.
- ◆ Land in flood prone areas. Floods can bring in pathogens as well as other unwanted debris or contaminants. Areas that flood regularly are not suitable for crop production. If an area floods infrequently, evaluate whether or not crops can be grown in such a way that potential contamination can be minimized. Crops exposed to flood waters should be destroyed and should not be harvested for human consumption.
- ◆ Land adjacent to high risk areas. If fields are close to concentrated animal use areas, land application sites, or flood prone areas, particularly if these areas are higher in elevation than the production fields, be aware of the potential for runoff or windborne soil to move into the crop fields and contaminate the crops being produced.



▲ Runoff from a dairy feeding area. Growing areas should not be located downgradient from these areas, or runoff should be reduced and diverted.

## What to look for

- ▶ Think about the history of the farm. Did any of the higher risk land uses occur? What is the cropping history? If any higher risk land use conditions have occurred in fields where you are growing fruits or vegetables, either test the soil for pathogens or wait before using those areas.
- ▶ Take a look around the farm. Look for topographic features like ditches, swales or other topography that can channel runoff from nearby areas into your growing areas. Where will that runoff be coming from? If it can come from places with animals, land application sites, or even fresh compost piles, the runoff water should be diverted from growing areas using ditches or berms.
- ▶ Can these topographic features also channel floodwaters into your growing area? The amount and frequency of flooding that occurs in this area will determine if it is practical to divert or whether you should use another area.
- ▶ Finally, can dust from high risk areas blow into the growing area? If so, plant a windbreak of evergreen shrubs or trees to block potential contamination and reduce microbial loads on a given area. Often, breaks with several different types of trees and shrubs or even tall grasses of different heights are the most effective (see Figure 1).

**Figure 1. Diagram of how a windbreak can potentially reduce contamination from nearby higher risk areas. Adapted from NRCS Technical Note – Windbreaks.**



This project was supported all, or in part, by a grant from the National Institute of Food and Agriculture, United States Department of Agriculture (Award Number 2009-51110-20161).  
Publication #FDNS-E-168-3. J.W. Gaskin, J.A. Harrison, M.A. Harrison, J. Cannon, R. Boyer and G. Zehnder.

February 2012

The University of Georgia and Ft. Valley State University, the U.S. Department of Agriculture and counties of the state cooperating. Cooperative Extension, the University of Georgia Colleges of Agricultural and Environmental Sciences and Family and Consumer Sciences, offers educational programs, assistance and materials to all people without regard to race, color, national origin, age, gender or disability. An Equal Opportunity Employer/Affirmative Action Organization, Committed to a Diverse Work Force.