

Developing a Plan for Third-Party Audits

Good Agricultural Practices (GAPs)



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Part 1 — Farm Review

All questions covered in the General Questions Section are applicable to this section. If the farming operation does not pass the General Questions Section then the farm does not meet the minimum requirements for a Farm Review or any other part of the audit and cannot pass it.

Water Usage

This section describes the sources of water used for irrigation, applications of pesticides and fertilizers, cooling and frost protection and how each source is applied. The method of application and the type of crop can have an effect on the potential for microbial contamination and the spread of individual pathogens. List all the sources and methods used in the different operations.

Several pathogens can be transported in water including *E. coli*, *Salmonella* species, *Shigella* species, *Giardia*, *Cyclospora*, etc. Any of these can cause serious food borne illness if the produce becomes contaminated. In addition, once the produce is contaminated it is difficult, if not impossible, to completely remove the pathogen.

Describe all irrigation sources. If municipal water is used, an annual report from the locality that identifies the presence and levels of organisms should be obtained. Farm well water should be tested twice each year. If the water source is from surface water, tests should be carried out three times during the growing season – at planting, at peak use and near harvest. All tests must include at least fecal coliform and should include genetic *E. coli* with a count of the number of *E. coli* or fecal coliform units not just a presence or absence. The report from the testing laboratory is sufficient for documentation. The laboratory must use an Environmental Protection Agency (EPA) accepted method for the analyses, eg. EPA1603 for *E. coli*. Note spray water must be from a good water source that does not contain pathogens above an acceptable level. Acceptable levels for generic *E. coli* present is less than 126 colony forming unit or most probable number (cfu or mpn)/100 ml of water for one sample or an average of less

than 126 for a 5 sample average. No sample can be over 235 cfu/100 ml that comes in direct contact with foliage or 576 cfu/100 ml that does not come in direct contact. Acceptable levels for fecal coliform in New Jersey is 200 cfu/100ml. Corrective procedures to be employed when required should be outlined in the Grower Food Safety Plan (See *Water source testing log*).

No matter what the source---if it is well maintained, wildlife and livestock excluded and manure storages isolated from the recharge and pumping area---the risk of contamination is reduced. All sources should be protected from potential direct and indirect contamination.

Sewage Treatment

Indicate what type of sewage system the farm uses. If a septic tank is used, identify the location of the tank and drain field and whether there is a sewage treatment facility adjacent to the farm. Adjacent means approximately ¼ mile or closer. Including a map of the system will speed up the audit process. The auditor will ask to be shown the drainage field.

Animals/Wildlife/Livestock

It is not possible to exclude all wildlife from production fields, but every effort should be made to reduce or exclude the population when possible. This can include fencing, mechanical scaring, chasing, hunting, etc. Domestic animals should be excluded from production fields during the growing season. This includes pet dogs and cats! Domestic animal waste from adjacent fields or storage areas must be excluded. This has been the source of several food borne illness outbreaks. If a cropping area is closer than 1 mile from an animal production area and no natural barrier exists, the auditor may say it is too close and those points will be lost.

Indicate whether the crops are located near dairy or poultry operations that could pose a contamination risk. Lagoons located near or adjacent to fields could leak or overflow and cause runoff into the fields. Any stored manure should be contained to prevent

crop contamination. Measures should be taken to assure that livestock do not have access to ponds or streams used for irrigation. The animals should stay approximately 200 feet from the water source. There is no documentation needed for these questions, but the auditor will observe if efforts are being taken in this area. Crop areas should be monitored for the presence or signs of wild or domestic animals in the field. This does not need to be done daily, but on a regular schedule determined by the grower. This is especially important just prior to harvest. Walk through the fields at least the day prior to harvest and the morning of harvest and note signs of animals that have passed through or fed in fields (*See Animal monitoring log*).

Manure and Municipal Biosolids

If no manure or municipal biosolids are applied, indicate that fact in the food safety plan. Manures can represent a significant source of human pathogens if not handled properly. In New Jersey, municipal biosolids are not recommended for use on small fruit, vegetable crops or bearing fruit trees. This is especially important if the crop is grown close to the soil. Indicate whether the operation uses manure or municipal biosolids. If raw manure (uncomposted) is used, apply and incorporate it in the fall preferably when the soil is warm on a cover crop. Raw manure must be applied at least two weeks prior to planting and at a minimum of 120 days prior to harvest. If the 120-day waiting period is not feasible, apply only properly composted manure. Application of manure or biosolids must be documented in the Grower Food Safety Plan. Record the rate, dates and location of applications. (*See Manure application log*)

Properly composted manure lowers the level of pathogens. Describe how the manure is composed in detail. This includes the type of composting (passive or active), composting time, temperature of pile (if active), how many times the pile was turned and microbial testing reports for active treatment. If storing compost prior to application, growers must use some type of containment to reduce the chance of runoff, leaching, wind spread or recontamination. If composted manure or treated biosolids are purchased, documentation of analysis reports must be maintained for each shipment

and made available for review. These reports must include the amount of fecal coliform and E. coli present.

Soils

Include a short narrative history of the farm or farms in the Grower Food Safety Plan and describe what the land was used for previously. If the land history indicates a recent possible source of contaminants from dairy, feedlots, other waste or flooding, the soil should be tested for microbial contaminants. The results must be available for review and any corrective action taken to prevent product contamination must be documented.

Flooding should be addressed in the food safety plan. If flooding occurs along stream beds, swamps, etc. the soil would need to be tested for harmful pathogens. Flooding does not include standing water after heavy rains.

Traceability

Develop a map showing all farm fields, greenhouses and tunnels, then identify them by number or symbol. This can be used if a recall occurs to pin point production areas.