

## COMMON SENSE FOOD SAFETY FOR SMALL-SCALE PRODUCE GROWERS

*By Paul Vossen*

Have you ever felt awful right after a meal? Well, that's when most of us get concerned about food safety otherwise, and fortunately, we do not have to think about it much. Many of our local fruit and vegetable farmer's guts are churning right now, though, from a concern that new, local, state, and federal food safety regulations will soon be forced upon them. Produce farmers are worried that we are going to get another layer of onerous record keeping requiring costly modifications to their farming operations that could make small-scale production even less profitable and much less enjoyable. But that is not likely to happen, especially if farmers incorporate common sense safety practices and then document what they have done.

Let's start first by noting that food safety is extremely important. It is basic since we rely on our food being safe to eat - several times every day. Each year there are hundreds of reported food related illness outbreaks; remember the melons with salmonella, the spinach with E. coli 0157.H7, or the strawberries with E. coli killing several people and making many more very sick? A few of those outbreaks were caused by small-scale growers meaning that it does not have to be a mega producer to make a mistake. We would all hate to see the media descend upon us in a fury over one of our local crops, all of a sudden, sickening people or killing someone. That would be a tragedy for those directly affected of course, but also for every other producer of that crop. A food poisoning caused by a Marin County product would also give this area a big black eye that might extend to questioning our local markets, air, water source, etc. Think of your worst marketing nightmare - not being able to sell what you grew, because of it being associated with a safety concern. It is certainly not very likely to happen, but it could, and if it did, it would be really unfortunate, knowing that it could have easily been avoided.

Historically, the primary agents causing food poisoning outbreaks have been bacterial. About 70% of the problems come from E. coli 0157:H7, Salmonella, and Cryptosporidium. About 17% is from chemical contamination and the remaining 13% is evenly distributed between parasites, viruses, and unknown agents. Most of the time foods such as eggs, dairy, and seafood have been associated with food related illnesses, but over the last few years 25% of food poisonings have come from fresh fruits and vegetables. This is what brought about new federal regulations, notably the FDA Food Safety Modernization Act (FSMA) passed by congress in 2010, released in January 2013, and currently in its public comment period (until September 16, 2013). Details of that proposed regulation can be viewed at:

<http://www.fda.gov/Food/GuidanceRegulation/FSMA/default.htm> . Small-scale farmers would be exempt from this federal regulation if their products are direct marketed within 275 miles of where it was grown, unless there had been some past problem. That is just the federal regulation, however, as nobody knows what the state, or county governments might require. The most likely entities, however, to trigger greater compliance with food safety regulations in the future will be insurance companies, schools, farmers markets, grocery stores, or even food banks.

Consumers are concerned and they are asking about the safety of their food. And you know that a bacterial food poisoning from produce purchased at a local farmers market, for example would go viral via the internet in just hours.

So, let's not let it happen. Following some basic, common sense, guidelines and documenting them will go a very long way to preventing anything horrific from happening here. This is where good agricultural practices come in – also referred to as GAP's. GAP's start with each farmer developing a map of their farm noting the crops grown, water sources, bathrooms, roads, and what is on adjacent properties, especially if fields might receive runoff, or if there is livestock/wildlife habitat nearby. Google maps is a great way to develop a map that is easily updatable electronically. Many farmers already have a map of their farm, if for example, they are organic growers. The next thing is to get your irrigation water tested for bacteria and record the test results. The most commonly used standard (from the EPA) is < 126 CFU of E.coli/100 ml sample. The test is commonly based on generic E. coli, not the one that is the known human pathogen (E. coli 0157:N7) and it documents if there is fecal contamination in that water source. Water with levels exceeding this standard should be treated to reduce the bacterial level. This UC document provides a practical approach to water disinfection:

<http://anrcatalog.ucdavis.edu/pdf/7256.pdf>

Once you have documented that you have clean water that will not contaminate your produce, then you should make sure not to let it get contaminated from livestock waste, wildlife waste, or human waste. The most likely sources of bacterial contamination on produce have been documented to come from those waste products. The rule is to keep livestock fenced out and their raw manures can only be applied up to 2 weeks prior to planting, but never within 120 days of harvest. Compost that is applied to fields should be well matured and never applied within 45 days of harvest. Wildlife should be kept out as much as possible to avoid their droppings from directly getting onto produce. Runoff water from wildlife areas should be directed away from fields, so that it does not get into fields growing produce. Of course farmers cannot control nature to the extent of preventing all contamination, but any produce that has obviously been touched by any waste products should be discarded and not allowed into the marketplace.

Field workers, especially if they are sick, can carry a wide variety of disease causing bacteria. Consequently, any field workers exhibiting symptoms of illness should be reassigned to another type of work that keeps them from coming in contact with any fresh produce. They also need to be told not to report to work if they are ill. Workers need to be trained in first aid so that their blood does not get onto any produce if they ever have an accident. Of course OSHA guidelines need to be adhered to regarding the number of toilets available, the cleaning schedules of those toilets, and workers must be told to wash their hands on a regular basis, certainly before touching

any produce. The training and cleaning schedules and signage all must be documented with signatures and dates.

Harvest containers and packing areas should be cleaned periodically with a solution of 1 Tbs. of chlorine bleach/gallon of water. For washing the actual produce, water should be treated with ½ tsp. of chlorine bleach in 6 gallons of water (5 ppm), which is allowable for organic growers too. Then take care to place those pristine fruits and vegetables into nice clean boxes, trucks, and bins for transport to market. Refrigeration is also important, not only in keeping produce fresher longer, but in significantly reducing the rate of bacterial growth, so keep your produce cool.

All produce must be able to be traced back to the farmer and the fields where it was grown. This is not new to food safety, but is important to prevent a problem from getting blown way out of proportion and so that we can learn from mistakes. For good traceability, farmers must record the field, harvest date, crop name, delivery date and where the produce was sold. Boxes or sales receipts should have the name of the farm and contact information with name, address, and phone number. Having a written traceback policy is a very good idea. If it is not being required now it probably will be soon and it is essential for becoming certified. Third-party certification is a big step and may not be required, especially if growers conduct a self-audit and self-certify.

The University of California Small-Farm Program recently developed a template for a food safety manual in Microsoft Word, so it can be easily modified and updated. You can download it from my website: <http://cesonoma.ucdavis.edu/SpecialtyCrops/> and use it as a manual to document what you have done to assure that the produce you are selling is safe, and to conduct a self-audit (self-certification). Other sources of information on food safety from my website include a list of 3<sup>rd</sup> Party Auditors, one of them being the USDA, other food safety websites, and various UC Cooperative Extension online resources for GAP's. So let's be safe.

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