



MOSES ORGANIC FACT SHEET

GAPs: Bringing Good Agricultural Practices to Your Farm

As our food system has become more centralized and industrial, we in America have experienced increased incidences of tainted foods: from meats to raspberries, spinach, lettuce and most recently peanut products. Congress has been reviewing a wide variety of proposed “food safety” laws, mostly to prevent pathogens on fresh fruits and vegetables that could cause sickness or worse.

MOSES, along with other sustainable and organic agriculture organizations, has been giving input to these bills before Congress and offering language that would lessen the impact of these new regulations on small and mid-sized farmers. Whether or not a bill is passed by Congress, many retailers, restaurants and institutions (such as schools) are requiring some sort of certification, or at least a system in place, to address the prevention of pathogens on the food they purchase. With many schools, restaurants, nursing homes and hospitals seeking out locally grown produce, growers need to understand basic Good Agricultural Practices (GAPs) in order to sell their products to these markets.

Many of the aspects of GAPs are based in common sense and are not that difficult to implement, although many of us haven't given much thought to having a specific system in place. Simple things, like making sure you have bandages and gauze in a prominent place for those handling produce, and that someone with a bleeding cut shouldn't be washing produce in a tub of water, are easy to put in place and make sense when you are selling the produce to others.

The USDA and other private companies provide GAP certification to growers, which can be quite expensive (anywhere from \$300-1000) per year. While this food safety inspection and certification is not currently mandatory, knowing some of the areas GAP addresses can help fresh produce growers do a better job on their farms. GAP is based on having a plan, following it and documenting activity (this should sound familiar to certified organic growers). This fact sheet will cover the basic GAP requirements, but not every detail nor the various documents and traceability needed for full certification will be covered. Each farm has their own special set of circumstances and can seek out a variety of free resources to help them improve the food safety aspects of their operation. See the resources at the end of this fact sheet for more information and documentation you can use if you decide to become certified as meeting Good Agricultural Practices on your farm.

First, the GAP activities you do on your farm should be implemented in all areas, especially if you have multiple fields that are not adjoining each other. Remember, you are trying to avoid contamination of your food, and it can occur anywhere you are growing, packing or storing it. Good hygienic practices for all workers should be observed. Hands should ALWAYS be washed after using the bathroom with soap (pump or bar) and drinkable water. Dunking your hands in a muddy creek and subsequently handling produce is NOT GAP. Make sure that everyone understands how long to wash their hands (20 seconds) and the importance of using soap and drying their hands on a clean towel (not their manure splattered jeans). Take special care to explain this to children or teen-

agers who handle your produce. Bringing a large water jug, soap and paper towels out to the field in the truck is a good practice, so workers can have drinking water and can wash if needed. Even if you are not getting GAP certified, you should still have a protocol for hand washing. All fresh market vegetable growers should take an annual water test for drinking and wash water to verify it is safe to drink. GAP inspectors will also want to see workers having access to either a porta-potty or bathroom.

Preventing rodents from having contact with your produce is important wherever it is kept on the farm, since they present a serious risk of contamination. As you build or upgrade your buildings, give some thought to making them more rodent proof. Mouse eaten produce is unsellable, and giving some thought to how to keep rodents out of your staging, storage and transportation will also give you more produce to sell. Produce that has feces on it should not be washed and sold, it should be discarded. There is a contamination risk of both that single vegetable as well as other vegetables in the wash water or those touching it in the box.

If you farm with horses, or put up temporary perches in your fields to encourage predators to roost and hunt mice, then there could be feces from these or wild animals in your field. You should have a protocol that educates all field workers to not harvest produce that has been tainted by feces of any kind. A “buffer zone” of 3-4 feet from the fresh manure where no produce is harvested is an example of a protocol. Under GAP, there is not a specific size for a buffer zone for this use, but it should make sense depending on what type of feces you are dealing with. Small animal manure (mouse droppings) needs less of a buffer than large animal (horse) manure. You should be continually monitoring your field to track the presence of raw manure, and flag areas or remove the feces if possible. As vegetables mature and they canopy over the row, you may not see fresh manure when you are harvesting. Follow the National Organic Program (NOP) regulations when applying raw manure to your fields, either 90 or 120 days from incorporation to harvest. NOP compliant compost can be used throughout the growing season, since the pathogens have been destroyed by heat during the composting process.

If someone (either a worker or a visitor to the farm) is obviously sick, with a fever or diarrhea, they should NOT be handling produce. Again, use common sense. A runny nose or a new cut that is bleeding should clearly be known by everyone as a reason to NOT handle fresh produce. Everyone should know where they can find tissues and bandages. If you run a U-Pick operation, you should be thinking about how to inform your visitors of all of your protocols.

When applying any sort of pest or fertility input; such as dipel, pyganic, fish emulsion etc, there should be a procedure in place where the person washes their hands and perhaps changes their clothes before they wash and pack produce for sale. So if you are foliar feeding or spraying your squash patch, change your clothes before you start harvesting broccoli.

If your irrigation water is not from a drinking water source, you may want to test this for the presence of pathogens, especially if you are harvesting crops such as lettuce, or tomatoes that are not staked or could come in contact with the irrigation water. If your irrigation is from overhead sprinklers the risk from non drinking water is even greater. You will need to think through the risks and do the appropriate testing and action. If you wash produce in big tanks, remember the old saying, "one bad apple can spoil the whole bunch." If there is a risk of contamination, you should spray the produce clean before you put it in a chilling water tank to remove field heat. Flooded lands that have significant risk of manure runoff should be either tested (flood waters) or the produce not sold.

Pay attention to the livestock either on your farm or in your vicinity. Is there any chance that there could be runoff from a nearby animal dry lot onto your vegetable field? Do you notice dust coming onto your farm from a cattle yard or poultry house? This dust is a mixture of dirt and manure, and could contaminate your produce. Piles of manure on your farm should not be near the packing area. If there are flies on your farm that have recently been on manure piles, you should consider a screen enclosed packing area to prevent the flies from landing on your freshly washed and clean produce. If you only grow asparagus, and there are no flies in early May, this would not be an issue for you.

Look at your field crates, buckets and wagons - are they used only for produce? Are they clean? How about cutting tools and harvest bags? If you are using wooden crates or produce is put directly on wagons, is there a chance that they could splinter into the food? Containers that offer this risk should be repaired or not used for fresh produce. Putting a new sheet of plywood or a plastic tarp over the wagon bed would be acceptable. Everyone who works on the farm should be aware of the protocol for dealing with this type of issue. If someone has a mason jar full of water and it breaks, what is the protocol? (Immediately remove it from where it could accidentally be mixed with the produce or cut someone).

When washing produce, be aware of keeping the water cold. Have frequent changes of the water to prevent build up of dirt. Numerous wash tubs may be used, depending on the dirtiness of the product, with one tub used to take the caked dirt off the produce, a second and then a third rinse. That third rinse should be as clean as possible. There are some products allowed in that final rinse, with each certifier having somewhat different guidelines on the use of chlorine and periacetic acid. Ask your certifier for their guidance on what additives you are allowed to use in rinse water for organic produce. Table tops, racks, conveyors, and any other place where produce touches should be reviewed, kept clean and free of possible problems. Give some thought to the layout of your packing area, with the dirty produce area away from the final rinse and pack area. If you are cooling produce to remove field heat, this should also be drinkable water verified by testing. Ice should be made from drinkable water.

Areas where you store your lunch, eat or take breaks should not be the same place where you wash the produce. Smoking and eating should not occur where produce is being sorted and washed. Make a separate picnic area for this activity. Don't eat lunch on the packing table and then start sorting tomatoes on it. If you have any fans, overhead pipes, or ducts make sure they are clean and will not drop dust or other filth onto tanks or tables. Ceilings in the cooler produce packing area shouldn't have cobwebs. All garbage cans should have tight fitting covers. Don't let pets or other animals into the packing area. If produce falls on the floor, there should be a specific protocol for either rewashing or non sale. Water on the floor of the cooler should be periodically cleaned up and not left for any significant period of time, since this dirt and water could breed pathogens and get soaked up into the bottom of your cases. Clean all trucks before loading clean produce into them.

If you decide to become GAP certified you will need to have a written plan and documentation to back it up. For example, has someone scouted the field for fresh manure and is it flagged? Is there a well stocked first aid kit available (could be in the truck) wherever people are using sharp instruments? Has everyone read and learned the protocols in place? Is there a water test verifying it is safe to drink for all sources of water used in direct contact with produce?

The cost of GAP certification depends on how far the inspector has to travel (WI's inspector is in Stevens Point), how many other operations are getting inspected at the same time as you (split the cost), how organized you are (good recordkeeping helps) and how long it takes for the inspector to view all of your fields and packing facilities. The cost is \$91 per hour for their travel and the time they spend on the farms, with no lodging or mileage costs added on to this fee. The producer has one announced and one unannounced inspection each year, so the cost is incurred twice per year. Some organic certification agencies are considering adding a food safety inspection onto their organic certification for an extra fee, which would be cheaper than getting a separate GAP certification. Until Congress decides what they wish to require, most certification agencies are waiting to develop a program which would be acceptable to their local marketplace. Maine Organic Gardeners and Farmers Association (MOFGA), is working on an add-on food safety certification for their growers who might need this, and they are taking the lead. If you are interested in this type of add-on GAP type certification, let your organic certification agency know of your interest.

It is unfortunate that small growers, who have not been the source of the recent contamination problems, might need to spend hard earned dollars to meet these GAPs, even if they are not certified. However, doing a good job of protecting your produce from harmful pathogens is one of the best ways to provide your customers and the consumers of your vegetables and fruits with the healthy food that they seek. While removing all risk is impossible, following common sense and instituting protocols that lessen contamination risk can only help you be more confident in the quality of your products and hopefully help you sleep better at night.

For more information see:

www.GAPs.cornell.edu - Food Safety Begins on the Farm as well as sample GAP documentation.

www.foodsafety.gov/~dms/prodguid.html
The Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables- USDA publication.

www.ams.usda.gov/fv/fpbstates/map.htm
Listing of USDA GAP inspection offices.



Visit **www.mosesorganic.org** for more resources and tools, including our Organic Resource Directory and the Organic Broadcaster Newspaper. Plan to attend our annual Organic Farming Conference in February. To find upcoming events including MOSES trainings and field days visit our web calendar at: **www.mosesorganic.org/events.html**

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