

**TOMATO GOOD AGRICULTURAL PRACTICES (T-GAP)  
&  
TOMATO BEST MANAGEMENT PRACTICES (T-BMP)**

**Questions and Answers  
From the  
Florida Tomato Exchange**

**October 2006**

Food safety is important for everyone. It is the goal of the entire tomato industry to enhance the safety of tomatoes to the consuming public by the implementation of safer production, handling, and packing practices that will prevent or minimize contamination and will provide the necessary education and training on food safety practices for all levels of the industry.

Over the past two years, the Florida Tomato Exchange has been working with the industry, with the University of Florida's, Institute of Food and Agricultural Sciences (UF/IFAS), with the Florida Department of Agriculture and Consumer Services (FDACS), and with the U.S. Food and Drug Administration (FDA) to capture the food safety practices that many are performing daily and to work toward having consistent food safety practices for all. The document listing these food safety enhancement practices was completed in August, 2006 and is a living document that will change as more knowledge is available.

**The Florida Tomato Exchange voted on September 7, 2006 to immediately implement the Tomato Good Agricultural Practices (T-GAP) and Tomato Best Management Practices (T-BMP) for the fresh tomato industry in Florida with the exception of the prohibition of field packing without a microbial reduction treatment. The field packing provision will be implemented in the fall of 2007 provided the legal language has been passed enabling enforcement of the rules and regulations by the Florida Department of Agriculture and Consumer Services.**

This action by the Florida Tomato Industry is critical in light of the long-term objective of protecting human health and with the subsequent events of foodborne outbreaks involving spinach and lettuce from California.

**What does this mean for you?**

Food safety is important for everyone. You need to become very familiar with all the steps you are required to take to enhance food safety and minimize contamination in your operation..

You should obtain a copy of the Tomato Good Agricultural Practices (T-GAP) for field and greenhouse production if you are a grower and follow the recommendations and requirements as closely as possible. The Department of Agriculture and Consumer Services and UF/IFAS can assist in this regard. If you are a packer or involved in any postharvest operations, obtain a copy of the Tomato Best Management Practices (T-BMP) and follow the recommendations and requirements as closely as possible.

**Where can I get a copy of the T-GAPs or T-BMPs?**

Call the Florida Tomato Exchange at 407-660-1949 and they will provide you a copy. Check the website [www.floridatomatoes.org](http://www.floridatomatoes.org) as this document will be there in the near future.

**What other documents would help me to better understand the food safety risks and needed good practices for fresh produce?**

The U.S. Food and Drug Administration (FDA) has reports on the current foodborne outbreaks everyday on [www.fda.gov](http://www.fda.gov). The Florida Tomato Growers Exchange will forward pertinent news releases to you on a frequent basis and will point out lessons learned from these situations.

Florida tomato industry representatives were involved in the writing of the Commodity Specific Food Safety Guidelines for the Fresh Tomato Supply Chain and this was adopted under the T-GAP and T-BMP document. This may be found at: <http://www.cfsan.fda.gov/~acrobat/tomatsup.pdf>

University scientists are working to distill food safety practices into a brief usable form UF/IFAS EDIS document – "Food Safety on the Farm"  
<http://edis.ifas.ufl.edu/>

Guide to Minimize Food Safety Hazards for Fresh Fruits and Vegetables  
FDA/USDA/CDC Published October, 1998  
<http://www.cfsan.fda.gov/~mow/arprodgu.html>

FDA's Produce Safety Action Plan  
<http://www.cfsan.fda.gov/~dms/prodpla2.html>

Safe Handling of Fresh Produce and Fresh –Squeezed Fruit and Vegetable Juices  
(Consumer Piece)  
<http://www.cfsan.fda.gov/~dms/prodsafe.html>

**When will everything in this document take effect?**

We are all working together this first season to find the best way to implement these requirements that will give us the maximum benefits to food safety in a common sense

manner. We will continue to work with the industry as a whole, with individual producers, packers and all segments and even with other states.

### **How do I get registered as a grower or packinghouse?**

You are not required to register at this time because the registration process has not been completed. Once complete, you will be sent a notification on effective dates. Registration will be as simple as going on-line on your home or office computer, going to the County Extension office or a simple form submitted to the registration office.

### **How do I meet the education requirements for this next year?**

The only course that has been offered to date was the Sanitation Workshop for Packers offered by UF/IFAS on September 5, 2006 at the Florida Tomato Committee conference. Keep a record of your attendance at this workshop as proof of education and training for packers and repackers. We are working with UF/IFAS, FDA, Cornell and any other providers of effective education and training and we will send you an announcement when training for the other areas of the industry is offered.

We hope to have training modules available for you on the web from your own computer or at County Extension offices where you can go on line, register, complete the training and provide a record of your completion. You are all familiar with the need to document education and training through the pesticide handler programs.

Please send any suggestions of excellent training you may have received to the Florida Tomato Exchange so that it can be considered for this requirement.

### **How does this affect my current dealings with my third party auditor?**

First, the third party that is auditing you currently is probably the same company required by your customers to assure compliance with good practices. The T-GAP and T-BMP will not affect this relationship or your use of this firm. FDACS and UF/IFAS, however, are working with industry and auditors to establish criteria to evaluate third party auditors so that no one could try to set up a third party audit program that is not adequate. FDACS and UF/IFAS through the Methods Evaluation and Research Committee (see page 2 and page 10 of the document) will be completing this process this year.

If your third party auditor does not require an item in the T-GAP or T-BMP, you are still required to meet that section. For instance, some third party audits do not require you to look at irrigation waters yet current events in California with foodborne disease outbreaks show how critical this requirement is to the overall safety of your product.

We are hearing from companies all over the country that some harmonization or consistency is needed in third party evaluations. This can be a long-range goal but cannot be achieved in a short time frame.

### **What are the current penalties for not complying with T-GAP and T-BMP?**

There are no current fines or penalties in place for non-compliance; however, the industry is working with the Commissioner of Agriculture to gain authority to assure compliance with needed food safety practices. The main penalty for non-compliance at the moment would be the potential for a major foodborne disease outbreak, which would have dramatic costs in human health, and economic losses for the entire industry.

### **Since I'm not a major U.S. grower or packer, aren't I exempt from these requirements?**

No, food safety is everyone's responsibility. The only exemptions are if you sell a small amount of tomatoes (not to exceed two 25 lb boxes) from the property on which you grew them to an individual customer or you sell the same maximum 2 boxes yourself to an individual customer at a local farmer's market. If you sell to another party for resale, the tomatoes must meet all the safety provisions. Any greater quantity will have to meet all the food safety requirements. The only other exemption is a charitable donation that is not diverted into other commerce.

It is our hope that everyone will want to enhance the food safety of their tomatoes to the maximum degree possible.

### **With all this focus on food safety, does that mean the Marketing Order Requirements for tomato quality are no longer in effect?**

No, if you produce in the regulated area and are currently under the Federal Marketing Order for tomatoes grown in Florida, all the provisions remain in force.

### **I've seen other Good Ag Practices documents in the past. Are any of these valuable to help me?**

Yes, many of these documents will help you see the reasoning behind the requirements and may help you comply. Many of these documents, along with the web site where you can find these, are listed on page 4-5 of the T-GAP and T-BMP Document. The recently completed guidance in the Commodity Specific Food Safety Guidelines for the Fresh Tomato Supply Chain, Edition 1.0, developed by the North American Tomato Trade Working Group composed of the United States, Canada and Mexico has been adopted in its entirety. Our T-GAP and T-BMP document is consistent with this and is written more as a rule to follow.

### **Questions on Part A – Field and Greenhouse Production**

**Read the document carefully - These limited Questions and Answers are not meant to cover all areas; merely to address questions that have arisen**

**How can I be responsible for anything to do with the environment when I am growing in an open field exposed to all the elements?**

The environment you use to grow your tomatoes is a critical item for the safety of your product. The recent events with illnesses and deaths from fresh spinach in one packing plant from certain fields in California illustrate the critical need to ensure you know your environment.

Any animal operation adjacent to your tomato field is a potential for danger.

The exact strain of E. coli O157:H7 in the California spinach was found in cattle and wild hog feces in a field adjacent to the spinach field. The October, 2006 lettuce recall was due to finding E. coli O157:H7 in irrigation waters.

Animal and human feces are the source of Salmonella, E. coli and other pathogens on tomatoes. Animal control is critical. Don't have any animal operations next to tomato fields. Don't allow run-off of water from any adjacent land with animals onto your tomato fields. Don't have dogs, cats, pets, etc in tomato fields. Yes, you are in an open environment but control animal entry to the degree possible. If you go in a tomato field and see an increased population of toads, frogs, lizards, etc, this is a high potential for contamination. For any new tomato fields, know the previous land usage. If animals have been grazing on this land or manures spread on this land, check with UF/IFAS scientists on management. A minimum of 120 days is required for tilling in manures and that length of time may not be adequate. Some papers indicate Salmonella survival in soil for 6 months. Remove any piles of debris that can harbor rodents, animals, be an attractant, etc.

Set up an environmental evaluation/assessment record for the land on which you are growing. Record your water source for each crop, what you find on animal species, what controls you are putting in place, what is the use of the adjacent lands, etc. Keep this as a written record. Develop your own checklist. FTE and UF/IFAS will develop a checklist for you to use as a self-audit.

**I see that the prohibition of field packing without a microbial reduction step has been delayed. Does that mean if I am field packing that I don't have to apply any of the recommendations at this time?**

No, you should carefully read and apply all of the recommendations to the degree possible. For instance, your liability and chance of causing foodborne illness is greatly increased if you harvest from any field adjacent to an animal operation such as pasture with cattle, dairy, etc. You are responsible for knowing the conditions in the field where you are harvesting. You are also responsible for ensuring that all sanitary provisions on facilities, handwashing, cleanliness of harvesting containers, etc. are followed. Although you may not be the grower, you are responsible for ensuring that the actual grower has records of analysis for the irrigation waters and has used properly registered pesticides,

etc. Read the document carefully and question the growers in whose fields you are packing the tomatoes.

Yes, you are correct in that you can continue to field pack this year while we are working with the scientists and regulators to determine a procedure that you can use in the field to reduce the microbial levels on the tomatoes.

Get a copy of Field Pack Questions and Answers from the Florida Tomato Exchange or your County Extension Office.

**Am I required to use properly sanitized harvesting containers if I'm field packing?**

Yes, everyone is required to use properly sanitized harvesting containers. This issue was not postponed for field packing either. The only delay was the prohibition of field packing until a microbial reduction step was approved. Carefully review the equipment requirements which state that any surfaces or equipment that touches fresh produce is a food contact surface and must be cleaned and sanitized as such. You should establish routine cleaning and sanitizing procedures and maintain these standard operating procedures in writing. You should maintain all equipment and surfaces in such a way as to minimize contamination of and injury to tomatoes. You need to remove debris from the fields and prevent injury to tomatoes you are harvesting in the field.

**What other procedures are required of me if I am field packing tomatoes currently?**

Carefully review the sections in the T-GAP document about crews, harvesting, water and equipment. You need to instruct your work crews on food safety practices. You cannot use any surface water on the tomatoes you are packing. Do not pack in used, dirty containers. Do not wipe the tomatoes with a rag before packing. This merely spreads more bacteria on the surface and from tomato to tomato.

**How can I prove that I am making a good faith effort to comply?**

Record all that you are doing. Be certain to write down in a notebook, that you keep with you, all the procedures you are using. Write down when you have verified with the grower that he/she is following proper procedures on irrigation water, fertilizer and pesticide use, animal control.

**Why should I be concerned about the water I am using to irrigate? The product will all go to the packinghouse where it will be washed.**

It is critical for you to analyze any waters used for irrigation for pathogens. The recent lettuce recall in California was because of finding E. coli O157:H7 in the irrigation water. Well water is less contaminated than surface waters. If you are using ground water (from wells) you may need to test less frequently than for surface water. The recommendations for the frequency for water testing are being evaluated by the scientists and regulators and will be communicated to you. Analyze your irrigation waters now and keep a record of

the testing. If the testing shows any pathogens, immediately contact UF/IFAS and FDACS who can help you with a water treatment procedure to eliminate the pathogens.

Do not use surface water in overhead irrigation once plants are in blossom and fruit stage. Do not use surface water to dilute any pesticide or chemicals applied to a crop. Several studies have shown direct contamination leading to illnesses.

The reuse of waters can be a source of contamination and is a food safety risk. If you are being pressured to reuse irrigation waters, analyze the reused water, and contact FDACS for assistance in resolving any conflicts with the Water Management District. Water conservation measures cannot be in conflict with food safety requirements. Any reuse of water will probably require some type of treatment to eliminate pathogens.

The fresh fruits and vegetables in any flooded field are considered as adulterated by FDA due to the potential for contamination with foodborne disease organisms.

### **What do I have to do differently on worker hygiene and health?**

You are not required to do anything in addition to what you are already required under Department of Health, OSHA and FDA regulations regarding field sanitary facilities, worker hygiene and cleanliness and worker health. Be certain that you follow the current regulations and remember the source of most foodborne pathogens is human and animal feces. In all areas, it is important to document your practices.

### **What do I need to change on crop production practices under these new guidelines?**

You are currently required to follow the fertilizer laws and pesticide laws of the state. Any pesticide you are using has to be registered both by EPA and FDACS and used only in accordance with the label. **You cannot use any surface water out of a pond or canal to dilute a pesticide or ag chemical applied to the crop.** Use only well water or potable water. **No fresh manure should be used on any fresh fruit or vegetable crop.** Properly composted manures may be used but the exact conditions of composting must be known to ensure that all pathogens have been eliminated. Keep accurate up-to-date records of all fertilizers, pesticides and other chemicals applied to crops.

### **What are important areas when we are harvesting?**

Everyone who touches a tomato is a potential source of contamination. We all need to ensure that the crews harvesting tomatoes are aware of food safety practices and their importance. We are asking UF/IFAS and FDACS to develop a brief training pamphlet that will help the industry. Debris and culls must be removed to the degree possible. Injured tomatoes are easily contaminated with pathogens if present and once internalized the pathogens cannot be readily killed.

All surfaces that tomatoes touch are considered food contact surfaces and must be cleaned and sanitized as such. Ensure that you are using cleaned and sanitized harvesting containers. See page 7 and 8 of the T-GAP & T-BMP Document.

### **Where can I go for help?**

Everyone in the industry is working together this first year along with UF/IFAS and DACS to make certain we are enhancing the safety of our tomatoes, we are doing all we can do to prevent foodborne illness, yet we are doing this in a common sense way that we can accomplish. Give the Florida Tomato Exchange a call and they can refer someone to you to help you with your operations. Contact your County Extension office. Check the new EDIS document on “Farm Safety on the Farm”.

**Questions on Part B for Packinghouses and Post Harvest Handling**  
**Read the document carefully - These limited Questions and Answers are not meant to cover all areas; merely to address questions that have arisen**

### **I've run a good packinghouse operation for years. What will be different with the T-BMP?**

Basically, nothing should be different if you have been following good sanitary procedures and cleanliness for your packinghouse operation, equipment, tomato handling, worker hygiene, etc. You should be very careful to have written documentation of all procedures, all monitoring of your water, all analytical testing of tomatoes, sanitation of equipment, pest control, chemical usage, etc. Ensure you have adequate procedures for cleaning and sanitizing all areas including storage rooms, ripening rooms, etc.

### **A chemical company has been telling me they have a new chemical that will be a better sanitizer in my dump tank. Can I use this immediately?**

No, at present the only approved method for dump tanks is a free chlorine concentration of 150 ppm for a maximum of 2 minutes with water at pH 6.5 to 7.5, 10 degrees F over pulp temperatures and with careful monitoring to ensure that free chlorine levels, pH and dump tank water temperature are maintained as required during packing. If you want to use any other procedure, supply a file of scientific data showing adequate 3-log reduction of Salmonella and Erwinia in 30 seconds along with your proposed monitoring and the Methods Evaluation and Research Committee will review this to determine if the new method is adequate.

### **What sanitizers and chemicals can I currently use on equipment in the packinghouse?**

Sanitizers and disinfectants are pesticides under the law and have to be registered by both EPA and the state of Florida. FDACS will provide a listing of currently approved



sanitizers for use in packinghouses and if anyone approaches you about using another chemical, call FDACS to verify it is registered. Remember to store all chemicals so they will not contaminate the product.

**I ran out of boxes last week during a run and the company down the road refused to sell me some of their boxes saying this was prohibited. Why?**

First of all, the current law requires that the name and address on the box be the manufacturer, packer or distributor. **The company with its name on the box is legally liable for what is in that box.** Reused boxes can't be used for final packing of tomatoes. If tomatoes are shipped in bulk they can be packed in a properly sanitized plastic bin. All tomatoes need to have a positive lot identification so that you can traceback any tomatoes that you have packed and shipped.

**How can I be responsible for any traceback? What is all this talk about transparency?**

If illness occurs or something goes wrong, we have to be able to quickly traceback to the origin of the problem. You may not be able to be responsible for the whole chain, but you certainly know the tomatoes you packed, the growers of those tomatoes, and your customers that received them. Being transparent just means being open about all of your records, your procedures, and how you run your business.

**I am following all of these correct procedures but what is to protect me if the processor I'm selling my tomatoes to is mishandling them?**

You are correct. You are vulnerable if the regulators don't apply the requirements for safe handling all down the chain. After the past few year's outbreaks from cut/sliced and diced tomatoes, FDA requested the Conference for Food Protection, and the CFP concurred, to classify the cut, sliced and diced tomatoes as a Potentially Hazardous Food which will require careful handling after cutting at 40 degrees F or below. This action should greatly assist and provide protections against microbial growth.

**Why all this emphasis on record keeping? I'm doing the right things in my packinghouse.**

Regrettably, without a written record you don't have any proof of what you are doing. It is just your word. If something goes wrong, a written record of your procedures and the recorded results of your monitoring is your best insurance.

**After doing everything I can, what if something goes wrong? What do I do first?**

Our main goal is prevention; however, we must be prepared for crises before they occur. First of all have a written workable plan in place right now as to what you will do in time of a crisis involving your product due to a contamination event, a recall or other crisis. Decide who will communicate for your company in a crisis. Make sure you have after

hour telephone numbers to notify the Florida Tomato Exchange, the local county health department, the local FDACS inspector, and other key officials. Rapid notification and rapid correction limit illnesses and damages.

Second, the other key is cooperation. Quickly and readily meet with any officials that will be working on an investigation and make all records available to them as rapidly as possible.

**Again, food safety is everyone's responsibility and the Florida Tomato Industry is proactive in working to enhance the food safety of our crop.**