

**HACCP: What It Is And What It Isn't**  
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From: The Packer. August 16, 1999. "HACCP programs aren't always right for the produce industry."

Increasing concern about food safety has prompted a lot of discussion of the role of HACCP in the produce industry and many questions remain unanswered:

- What more can the industry do to ensure food safety?
- Will HACCP be mandated for the produce industry by the federal government?
- Is HACCP necessary for farmers?
- Is it practical for farmers to implement HACCP?
- How many critical control points do you need for a HACCP program?
- Who will pay for HACCP?

While there have been lively debates directed at these and other questions, there has also been a lot of confusion within the produce industry about what HACCP is, how it is used and what its role is in assuring food safety. In most cases, HACCP is the wrong program for the produce industry. While HACCP is an appropriate food safety system for fresh-cut and other processing operations, it is not suitable for growing operations in the field.

HACCP is a system for the prevention of physical, chemical or microbial contamination of food. The prime function of HACCP is to prevent identified hazards in food preparation through control of the process. HACCP functions as the final stage of an integrated food safety program that includes Good Agricultural Practices (GAP's), Good Manufacturing Practices (GMP's) and Sanitation Standard Operating Procedures (SSOP's). In fact, HACCP can only be effective if these other programs are in place and functioning properly.

HACCP is based on the identification of "Critical Control Points" (CCP's) and the prevention of identified hazards through controlling those CCP's. But a CCP has certain characteristics that limit its use to certain well defined situations. First, a CCP is a place in a process that, when not controlled, a significant hazard could result. Second, a CCP must be a point where a hazard could be controlled through controlling the process. Thirdly, it must be possible to quantify the process so it is possible to know if it is within critical limits. And, finally, it must be possible to monitor and/or measure the process at that point to know if the process is within the critical limits.

Identification of potential hazards and Critical Control Points (CCP's) is the foundation of HACCP. First, a hazard analysis is performed for the process. Then, a CCP is identified as a step in the process that, if not controlled, could result in a significant hazard. Next, it must be possible to measure and document the proper limits of performance of the CCP to verify that it is under control. Finally, it must be possible to audit the written records to verify that the process is under control through an effective HACCP plan.

There is no minimum or maximum number of CCP's in any given operation. What is important is that all potential hazards be addressed through prerequisite programs or through HACCP. Those hazards that can be controlled or minimized through quantitative control of a process may be designated CCP's and included in a HACCP program. Fresh-cut processors may have as few as two CCP's in a perfectly adequate HACCP plan.

When considering applying these principles to a farm operation, one can see immediately the difficulty in controlling naturally occurring hazards. For example, bird droppings in an orchard may potentially represent a hazard from the spread of *E. coli* O157:H7 or *Salmonella* spp. But it may not be a CCP because there is no way, by controlling a process, to prevent that hazard. Furthermore, there is no way to quantify and measure bird droppings to know if they are within critical limits. This would also be true of *Clostridium botulinum* spores in soil. Though they may represent a potential hazard, it would not be appropriate to establish soil as a CCP because it is not practical to measure the spores in soil or to control them through any known process. In fact, most agricultural hazards cannot, and should not, be prevented through HACCP. Instead, the use of GAP's has been identified by the FDA and the produce industry as a more appropriate way to address these hazards.

Another example is a cold storage room in a packing house where condensed water from refrigeration coils may contain the bacterium *Listeria monocytogenes* and could drip on product. This is certainly a significant hazard, but is it a CCP? It would not be practical to develop a process to prevent water from dripping or to quantify and monitor water dripping from refrigeration coils. A more appropriate way to deal with this hazard is through SSOP's. Refrigeration coils and drip pans should be cleaned and sanitized according to a predetermined schedule to prevent the growth of *L. monocytogenes* in condensate. In this way the hazard is prevented more effectively and more simply than by designating a CCP.

In a fresh-cut processing facility bacteria are present on raw and finished product, sometimes in high numbers. Is the presence of bacteria a CCP? Very few kinds of bacteria pose a hazard to humans and those that do are rarely found on fresh-cut produce. So the presence of bacteria, even in high numbers, does not constitute a hazard. Furthermore, it is impossible to accurately monitor bacterial numbers on produce. Variability of bacterial populations in different samples from the same lot, population changes over time, and a delay in getting results from micro tests all make it impossible to realistically monitor bacterial numbers on produce. In fact, total numbers of bacteria on produce have little to do with the safety of that produce. But surely the possible presence of pathogens on fresh-cut produce represents a hazard and there is no kill step to eliminate them should they be present. Such hazards are addressed by preventing contamination by pathogens through GAP's, GMP's and SSOP's. If these programs are functioning properly, contamination of product with pathogens should not happen. Thus, high bacterial numbers may impact product quality, but they will not be a safety issue.

It is time that the produce industry stopped calling GAP or GMP programs in the fields or elsewhere HACCP. It is time to recognize that the heart of food safety begins with the prerequisite programs, GAP, GMP and SSOP. Those systems assure the safety of fresh produce. In a few instances HACCP may also be useful. Resisting mandated HACCP actually misses the point. In most cases HACCP is the wrong program for the produce industry. So let's devote our

resources and attention to the prerequisite programs that will actually deliver safe and wholesome food.

What are:

**GAP's (Good Agricultural Practices).** The Food and Drug Administration (FDA) has published "Guidance for Industry: Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables". The guide identifies eight principals of food safety within the realm of growing, harvesting and transporting fresh produce and suggests that the reader "Use the general recommendations in this guide to develop the most appropriate good agricultural and management practices for your operation." The application of the principals is aimed at preventing contamination of fresh produce with human pathogens. This document is meant to provide guidance. It carries no regulatory or legal weight. However, due diligence requires producers to take prudent steps to prevent contamination and this document gives guidance those prudent steps. Copies are available from: Food Safety Initiative Staff, HFS-32, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, 200 C Street S.W. Washington, DC 20204. (Tel) 202-260-8920. (Internet) <http://www.fda.gov>

**GMP's (Good Manufacturing Practices).** The Code of Federal Regulations describes the conditions under which food must be processed and handled. The regulations cover general provisions, buildings and facilities, equipment, production and process controls and defect action levels. Many of the GMP's are simple good sense, such as washing hands after using the restrooms and wearing hairnets when working with food. Unlike GAP's, GMP's are regulations and have the weight of law. A food processor **must** comply with GMP's. Copies of the Current GMP's (CGMP) can be obtained by subscribing to the Federal Register or by ordering 21 CFR 100-169 by submitting the current cost by check or money order to: SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402, or by telephoning the Government Printing Office at 202-783-3238 to charge on Visa (copyrighted) or Mastercard (copyrighted).