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GAPs and GMPs for Ensuring our Food Safety Supply

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Fresh fruits and vegetables most often are grown in an open environment where there are multiple opportunities for exposure to microbiological and chemical hazards. Recently, an increase in recalls and food borne illness outbreaks linked to fresh fruits and vegetables has been seen. Most of these outbreaks were associated with microbial contamination including Salmonella, E. coli O157:H7, Listeria monocytogenes, Norovirus and Hepatitis A virus [1]. Several outbreaks received broad media coverage, raising concerns about the potential safety of fresh fruits and vegetables. The E. coli O157:H7 outbreak linked to Dole bagged spinach in 2006 led to 205 illnesses, 103 hospitalizations, and 2 deaths. This outbreak had a huge impact on the spinach and leafy greens industry due to consumer uncertainty inside and outside U.S. borders. After this outbreak; from August 24, 2006 to February 24, 2007, the consumption of bagged spinach decreased by 43%, bagged salad containing spinach decreased by 42%, and bagged salad not containing spinach decreased by 8% in the U.S.. On the other hand, at the International level, some countries such as Mexico placed a ban on all California lettuce imports during the outbreak. Another example, the tomato industry lost an estimated $100-300 million in the summer of 2008, the largest ever outbreak of Salmonella contaminated fresh produce in the United States generated over 1,400 illnesses. In the end, the outbreak was linked to fresh Jalapeno and Serrano peppers from Mexico.

The major concerns for food safety come from human feces, animal manures, other organic fertilizers, water, wildlife, and workers. Because fresh fruits and vegetable are consumed raw, there is no absolute kill step such as cooking that ensures safe produce. Furthermore, there is no cleansing step that can remove all biological and chemical hazards. Preventing and controlling the contamination of fresh produce at the farm is the key to producing wholesome, healthy products. Traceback data indicate that breaches occur during production and post-harvest handling lead to produce contamination and illness, in most cases. Also, in the U.S., more companies that distribute fresh produce become aware of the importance of the safety issues and they are demanding mandatory third party independent audits of fresh produce producers as a prerequisite for purchasing. The Good Agricultural Practices (GAPs) and Good Manufacturing Practices (GMPs) programs help producers to develop and implement farm food safety plans and prepare them for GAPs/GMPs certification so they can market their products with greater confidence [2].

Moreover, GMPs, along with GAPs and Sanitation Standard Operating Procedures (SSOPs), are prerequisite activities to the development and writing of a Hazard Analysis and Critical Control Point (HACCP) plan unique and specific for each facility. The principles of these prerequisite programs are to: a) Prevent microbial contamination of fresh produce over reliance on corrective actions, b) Minimize microbial food hazards in fresh produce, c) Convey that human and animal feces are the major source of microbial contamination, d) Understand that water's quality dictates the potential for contamination when in contact with produce, e) Monitor the use of animal manure in food production systems, f) Educate about worker hygiene and sanitation practices that play an important and critical role in minimizing the potential for microbial contamination of fresh produce, g) Follow all applicable laws aimed at reducing microbial contamination, and h) Ensure that qualified personnel and effective monitoring are in place to make all elements of the program operate effectively. By executing and documenting GAPs and GMPs, fresh produce, producers can assure government regulators and customers worldwide that the produce industry is diligent in its commitment to producing safe, high-quality fruits and vegetables [3].

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