

Produce Contamination:

How does it happen and how can it be prevented?

People and animals present on the farm can carry, introduce and spread microbial pathogens to fresh produce. The presence of these pathogens on fresh fruits and vegetables can lead to human illnesses, especially when these foods are consumed raw.



6 COMMON ROUTES OF MICROBIAL CONTAMINATION



Feces. Fecal contamination occurs when animals defecate in the produce field, if workers' hands are not washed after using the toilet or if there is a sewage system leak. Bacteria (e.g. *toxigenic E. coli*, *Salmonella*, *Listeria monocytogenes*), viruses (e.g. *Norovirus*, *Hepatitis A*) and parasites (e.g. *Giardia lamblia*) can all be present in feces.



Hand Sanitation. Pathogens can be spread by workers if they don't wash their hands after using the toilet, eating, smoking, sneezing or handling animals before handling produce.



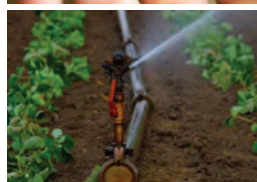
Clothing and Footwear. Produce can be contaminated by workers' clothing, especially if the workers have come into contact with animals. If you have a diversified farm, working in the produce field before working with the animals and/or having separate shoes for working with the animals will help lower the risk of contamination.



Tools and Equipment. Tools, such as harvest equipment, can cross-contaminate produce when not properly washed and sanitized. In addition to cleaning and sanitizing tools regularly, having a designated set of tools for produce and a different designated set for animals is best practice.



Illness and Injuries. Any workers' bodily fluids, such as blood, can be a serious transmission vector of pathogens. Ill workers should never handle produce.



Water. Agricultural water, such as irrigation water and wash water, can carry pathogens. Water contamination is highly risky since it can contaminate the whole crop. Using drip irrigation helps reduce that risk. If you are using well water or surface water (e.g. ponds), be sure to have the water tested for microbial contamination.