

Deadly diarrhea caused by wastewater on crops

March 4 2014, by Laura Soderlind



Researchers have identified that the use of wastewater to irrigate vegetable crops, which is common across developing countries, may significantly contribute to deadly health risks such as rotavirus, a major cause of diarrheal diseases.

The research, published in the journal *Risk Analysis* today, which focused on the Beijing region, found that the risk posed to children eating vegetables grown with wastewater far exceeded the World Health Organization (WHO) acceptable level.

Diarrheal disease is the second leading cause of death globally. More than 99 percent of deaths of diarrheal disease occur in developing countries and 90 percent of these are in children under five.

University of Melbourne researcher, Dr Andrew Hamilton from the Melbourne School of Land and Environment said, "This research shows that the use of wastewater in irrigation is a global critical health issue for the Asia Pacific region and beyond.

"There can be lots of microorganisms that cause disease in wastewater. They can be transferred from infected people, travel through the sewerage system, and then be eaten from the vegetables. This is a dangerous cycle."

The research found that some vegetables posed greater risk than others. "This was due to leaf shape, which affects the amount of wastewater and contaminants that are retained. Choy sum poses the greatest risk, while bok choy poses the least risk," said Dr Hamilton.

"There is more wastewater irrigation in China than in the rest of the world combined. Much of this is used growing vegetables."

The report recommended that China develop its own guidelines for [wastewater](#) use.

Dr Hamilton explained that similar situations exist across Asia and other developing countries, and this is where the risk posed by [diarrheal diseases](#) is highest.

"Vaccination programs for rotavirus are being rolled out globally, but at this stage, they are far from reaching all children in developing countries.

"When vaccinations cannot be relied upon to stop the spread of [rotavirus](#) and other diarrheal diseases, research like this is very important to identify other contributing causes."

Provided by University of Melbourne

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