

A review on Escherichia coli O157:H7-the super pathogen

Abstract

Shiga-toxin producing Escherichia coli (STEC) are among most important cause of food diseases. More than 70 different serotypes of Shiga-toxin producing E. coli (STEC) that cause disease in humans worldwide have been described. Illnesses range from mild diarrhea to bloody diarrhea to hemorrhagic colitis (HC) and life-threatening Hemolytic Uremic Syndrome (HUS). E. coli O157:H7 is STEC strain most often associated with the most severe form of disease. Infections have been associated with bovine food products, direct animal contact, and bovine manure contamination of vegetables; fruits and drinking water have also been implicated. Epidemiological investigations have implicated food and water as most common vehicle for infections cause by E. coli O157:H7. E. coli O157:H7 has been isolated from surface water and can survive for many weeks in these kinds of environments. It was demonstrated that E. coli O157:H7 can enter the lettuce plant through the root system and migrate throughout the edible portion of the plant. There is an obvious risk of E.coli O157:H7 infection arising from contamination of fruit and vegetable crops grown in soil to which abattoir waste especially where the food products (e.g. salad vegetables) are consumed with minimal processing. E. coli O157:H7 serotype is considered as being the most significant and has been associated with large food-borne outbreaks in North America, Europe, and Japan. The Centre for Disease Control estimate that E. coli O157:H7 causes approximately 73,000 illnesses and 61 deaths each year in the USA. After E. coli was recognized as a cause of hemorrhagic colitis, the centers for disease control and prevention (CDC) reviewed over 3,000 E.coli strains serotyped between 1973 and 1983 and found only one O157:H7 isolate. The largest out break to date occurred in Japan in 1996, affecting over 9000 people with contaminated radish sprout as the possible source of infection. Its resist to commonly used antimicrobials generates a public health dilemma. The mini review aims to highlight epidemiology of E. coli O157:H7 and the resultant Public and environmental implications of its continuous existence in our ecosystem.

Keyword: Escherichia coli O157: H; Hemolytic Uremic Syndrome; Food borne disease