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US Foodborne Illnesses Up Two to Ten Fold

Genetic engineered food has increased enormously in the United States since 1994. Figures released at the end of 1999 showed a two to ten-fold rise in food-related illnesses compared with 1994. A Swedish study throws new light and raise important questions on the safety of genetic engineered food. Dr. Mae-Wan Ho reports.

Food related illnesses are on the increase. At the end of 2000, more than 250 foodborne diseases were described, but in the vast majority of cases, the causal agent is unknown. Diarrhoea and vomiting are the most common symptoms, with serious after-effects that include blood poisoning, abortion, infections, blood in the urine, and death. Chronic disorders of the heart and nervous system can also result, as well as arthritis, renal disease, and disease of the digestive system [1,2].

According to a report published at the end of 1999 [3], foodborne diseases cause approximately 76 million illnesses, 325 000 hospitalisations and 5 000 deaths in the United States each year. Known foodborne pathogens account for 14 million of the illnesses, 60 000 hospitalisations and 1 800 deaths. In other words, unknown agents account for approximately 81% of food borne illnesses and hospitalisations and 64% of deaths. Three pathogens, *Salmonella*, *Listeria* and *Toxoplasma* kill 1500 each year, more than 75% of those killed by known pathogens, while *Campylobacter*, *Salmonella* and *Shigella* top the list in known causes of foodborne illnesses.

To see foodborne illnesses in perspective, total illnesses from known pathogens are estimated at 38.6 million, and that includes 5.2 million (13%) due to bacteria, 2.5 million (7%) due to parasites and 30.9 million (80%) due to viruses. The breakdown for foodborne illnesses in terms of known etiological agents is similar, with the highest proportion due to viruses.

The figures on foodborne illnesses are more than double those produced in 1994 [4], which were between 6.5 to 33 million illnesses per year. In terms of incidence, the increase is from 25 to 130 cases per 1 000 inhabitants in 1994 to 278 per 1 000 in 1999. Is the huge increase over the past five years real? Or is it simply a case of improved surveillance and reporting.

For comparison, a Swedish study was undertaken in the Municipality of Uppsala of 186 000 inhabitants, based on enhanced surveillance and retrospective interviews in 1998-1999 [5]. A total of 268 incidents were recorded, and 515 cases documented. This gives an incidence of 28 illnesses per thousand, which falls within the low end of the US estimate in1994. But that means the incidence of foodborne diseases in the US in 1999 is nearly ten times that of Sweden, as well as up to ten times higher than in 1994.

There are other aspects in the Swedish study comparable to the US. Thus, in 79% of the cases, the etiological agent was unknown, a proportion similar to the 81% reported in the US.

The breakdown in terms of known etiological agents, however, appears quite different. In Sweden, bacteria were found to cause 10% of the incidents and 25% of the documented cases, compared with 13% of cases in the US. Viruses, on the other hand, caused only 9% of both the incidents and documented cases in Sweden compared with 80% of cases in the US. As there is no reason to suppose that the countries differ in their ability to detect viruses, this discrepancy may well be significant.

The Swedish study suggests that the incidence of foodborne diseases in Sweden is similar to that of the United States in 1994, which is not surprising as both countries are presumably comparable in their food hygiene. But since then, the incidence in the United States has undergone an increase of between two to ten-fold. Such a large increase surely deserves to be thoroughly investigated.

Notably, genetically engineered food has increased enormously in the US since 1994, with proponents insisting there is no evidence that it has caused any harm. Health authorities should be on the lookout for new viruses and bacteria that could evolve by the horizontal transfer and recombination of viral and bacterial genes in genetically engineered crops.

1. "Foodborne infections", CDC Press Release December 2000.
2. Lindsay JA. Chronic sequelae of foodborne diseases. *Emerging Infectious Diseases* 1998, 3 www.cdc.gov/ncidod/EID/vol3no4/lindsay.htm
3. Mead PS, Slutsker L, Dietz V, McCaig LF, Bresee JS, Shapiro C. Griffin PM and Tauxe RV. Food-related illness and death in the United States. *Emerging Infectious Diseases* 1999, 5, 607-25.
4. Foodborne Pathogens: risk and consequences. Ames (IA): Council of Agricultural Science and Technology, 1994.
5. Lindqvist R, Andersson Y, Linkback J, Wegscheider M, Eriksson Y, Tidestrom L, Lagerqvist-Widh A, Hedlund K-O, Lofdahl S, Svensson L and Norinder A. A one-year study of foodborne illnesses in the municipality of Uppsala, Sweden. *Emerging Infectious Diseases* 2001, 7 www.cdc.gov/ncidod/eid/vol7no3_supp/lindqvist.htm

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This article can be found on the I-SIS website at http://www.i-sis.org/FoodborneIllnesses.php

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