

## Special Bulletin in Enterohemorrhagic E.coli Alert

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DINACAI counts with a Health Alert unit, in which the most relevant information regarding food contamination is compiled.

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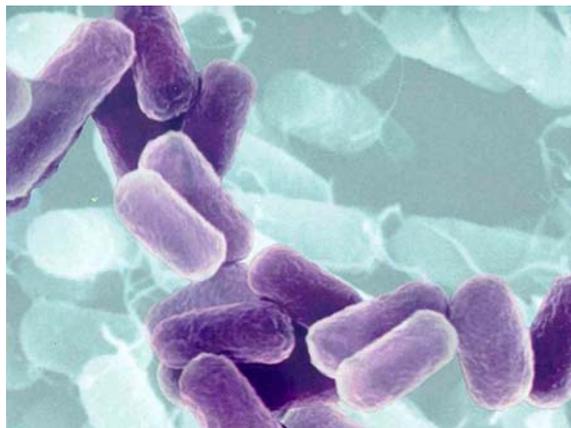
*Edition's Frase :*

*The blessing of the lord makes us rich and adds no sorrow with it. Prov 10:22*

June , 2011

### Escherichia coli

Since the late 60's other serotypes are known to produce enteritis by the release of two types of enterotoxins, thermostable (ST) and thermolabile (LT), that received the name of "E. coli" entero-



toxigenic (ECET). These microorganisms are rare in our environment, but they cause diarrhea to travelers in exotic destinations. To this group another serotype is added that causes enteritis by producing a toxin called verotoxin(VT), that is also called Shiga-like toxin (Stx) and it differs from the ST and LT toxins known till then. The importance of this enteropathogenic bacteria can be deduced due to various international health organisms have recommended its surveillance, considering it a high priority objective.

The discovery of the colon bacillus as a cause of hemorrhagic enteritis was conducted in the United States and Canada in the early 80's, by studying two outbreaks of enteritis giving serious complications, demonstrating that the cause was a "E. coli" strain from serotype O157:H7, that produced a verotoxin with intense cytotoxic activity. The epidemiology, pathogenesis and prophylaxis of this micro-

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#### CONTENT :

-Most relevant news regarding food contamination.

-Debates

-Activities within DINACAI

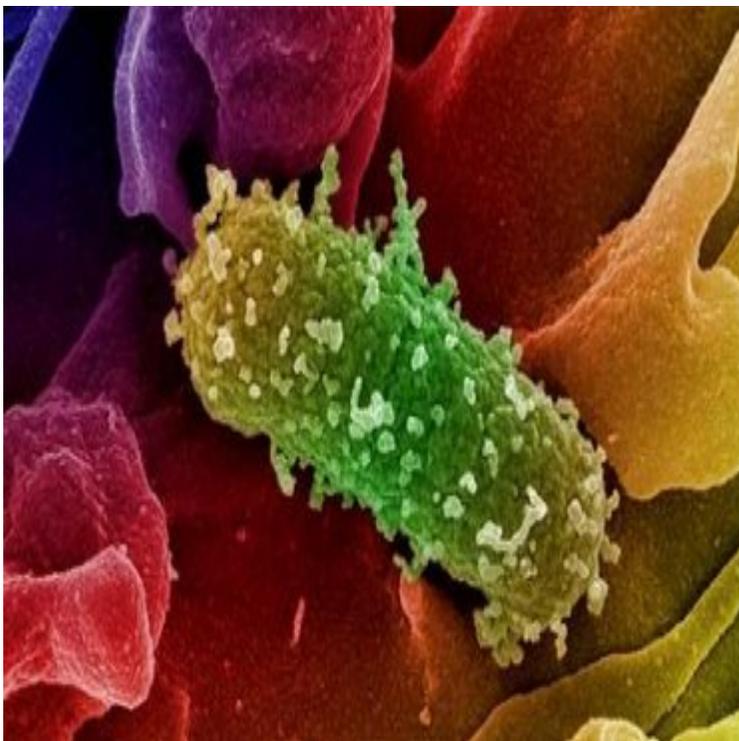
## EPIDEMIOLOGY

Although it was pointed in the beginning that the disease caused hemorrhagic colitis, in reality, the enteritis caused by this verotoxigenic bacteria gives place to variable manifestations, that go from very mild to severe forms with blood (hemorrhagic colitis). It has been able to note that fever is frequent in enteritis cases caused by O157:H7, as well with the hemolytic-uremic syndrome complications.

The infection by "E. coli" verotoxigenic distribution seems to be universal, although irregular, but its prevalence is only known with details in the United States, Canada, Argentina and Western Europe, as in other countries has not been studied.

The disease is transmitted by fecal-oral way and the most frequent vehicle of human infections is beef, mainly undercooked hamburgers. It has also been documented the infection is transmitted by turkey meat, salami, yogurt, mayonnaise, salads, vegetables and water. The epidemic outbreaks are frequently in several countries like United States, United Kingdom, Australia, Argentina and Japan, among others. Transmission from person to person it has also been shown. "E. coli" O157:H7 is resistant to extreme temperatures and weak acids. Cattle seems to be the principal reservoir for "E. coli" O157:H7, founded in healthy animals, between 7% and in 30% of studied cases. Seems

to be that strains are not pathogenic for animals, even though some researchers found them more often in those with diarrhea. The prevalence of other serotypes of "E. coli" verotoxigenics in animals are unknown, reports show eventhough their isolation in cattle, pigs, goats, dogs and cats.



### **The outbreak of foodborne unleashed in Germany could be linked, according to a recent research, to the consumption of soybean sprouts.**

A few days ago came to light news of serious food-borne outbreak in Germany, related to *Enterohemorrhagic Escherichia coli*, a pathogenic bacteria with very low presence in food. Although it was initially linked to the consumption of contaminated cucumbers, German authorities later confirmed that the cucumbers were



not the source of the outbreak. Analyses revealed that STEC strains of Enterohemorrhagic E.coli found in those affected did not match those found in Spanish cucumbers. Recent research also indicates that it would be a new variant of Enterohemorrhagic E.coli, unknown until now, a very strong and aggressive, more characteristic of human pathogens than in animals. One of its most troubling characteristics was his ability to adhere to the intestinal wall where it pumps toxins.





Although suspicions centered in other foods, especially in the consumption of fresh vegetables, and then even in a restaurant, it seems that finally the German health authorities have a reliable lead: a plantation of sprouted buds located in lower Saxony, were the infection would have spread. Specifically, the site of infection would be the soybeans grown in this plantation, although up to 18 kinds of sprouts are analyzed. Everything points to this as the

most likely source of the outbreak, having as not only the growing conditions these products, heat and humidity that favors the multiplication of the bacteria, and even one of their employees is hospitalized for this new strain con E.coli.

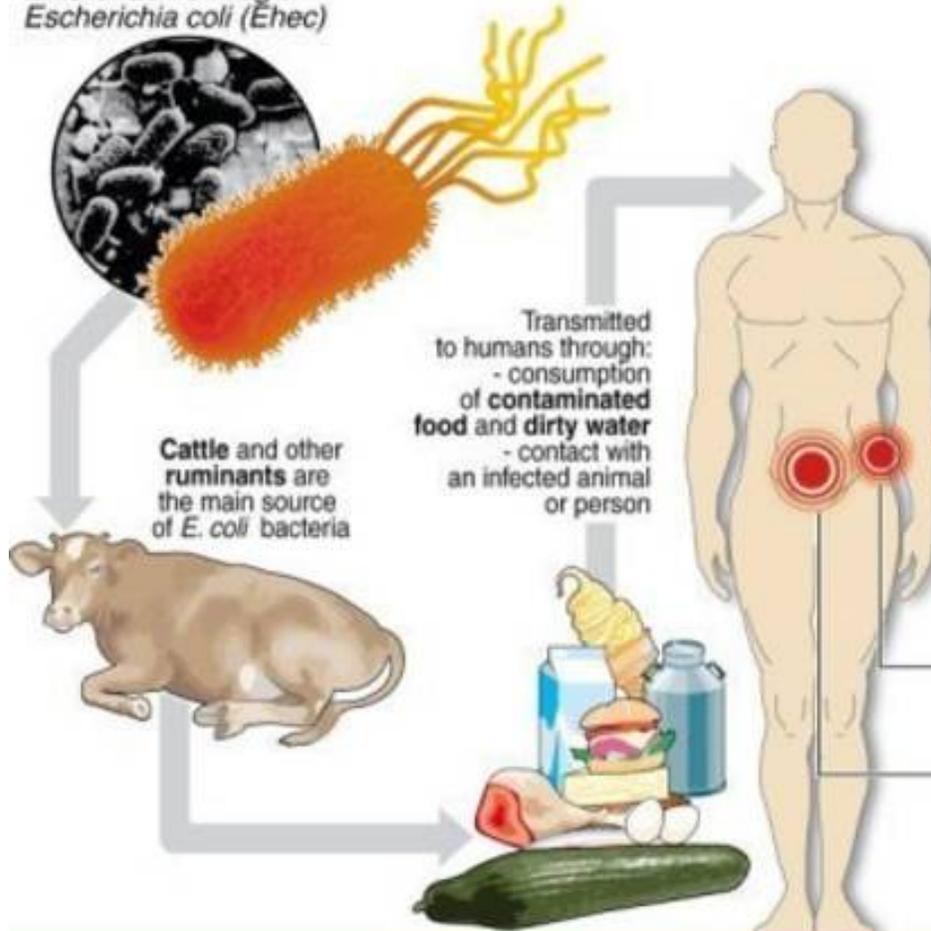
The European Food Safety Alert Network (RAFF), the European organism in charged to monitor and communicate quickly and accurately any risk related to food security to the Spanish Food Safety Agency (AESAN), announced that two Spanish companies producing cucumber could be involved in this outbreak. The statement also referred to a Dutch company. German authorities then established a relationship between isolated bacteria in patients, a very aggressive strain of *Enterohemorrhagic E.coli* and the one found in samples of suspected contaminated cucumbers from Spain, discarding any relation between them. For this reason, the European Commission has closed all alerts related to the Spanish cucumber.



Currently, there are now 22 people dead and more than a thousand affected within and outside Germany, most people who have recently traveled to this country, including a Spanish person. Although two cases of people who would not have been in this country, which confirms the fact that it can spread from person to person. However, is clear that zero risk does not exist., there is no real reason not to consume this vegetable, as long as you take action of washing and peeling. Research continues, but everything seems to point to the soybean sprouts grown on a farm in Lower Saxony. To complete confirmation of this fact, the current recommendation in Germany is not to use seed sprouts, especially soybeans, nor raw vegetables.

# E. coli - when contamination leads to infection

*Enterohaemorrhagic Escherichia coli (Ehec)*



**Bacteria can spread from one person to another via faeces**

**How to avoid contamination:**

- Wipe down work surfaces and kitchen utensils
- Keep hands clean, especially when touching raw meat or vegetables
- Avoid eating raw tomatoes, cucumbers and salads
- Make sure meat is well cooked
- Bring unpasturised milk to the boil

Infection can cause acute renal failure and neurological problems (seizures, strokes)

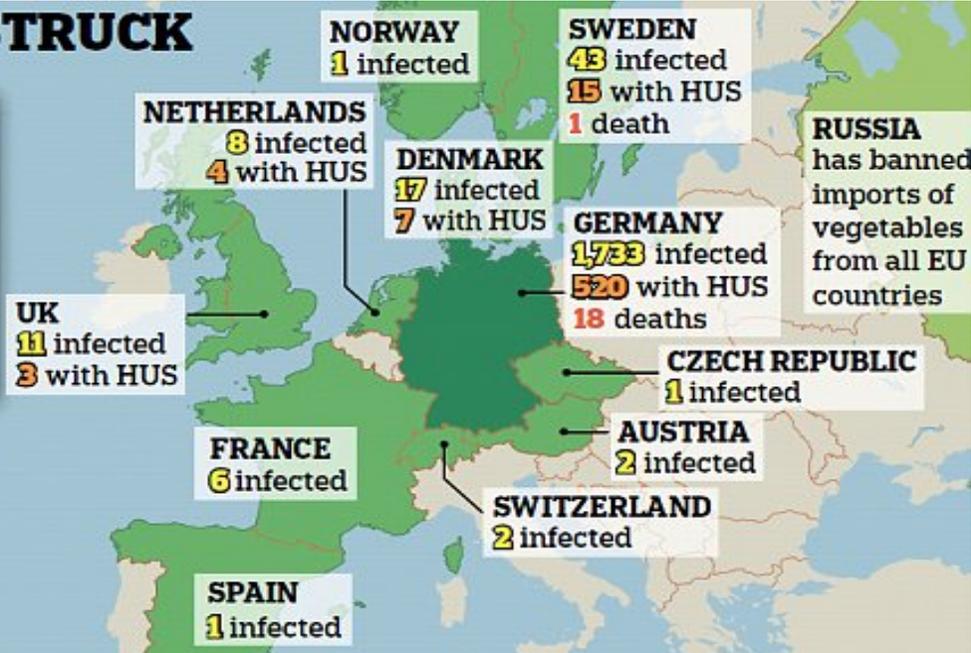
Diarrhoea and in some cases bloody diarrhoea

AFP

## WHERE IT HAS STRUCK



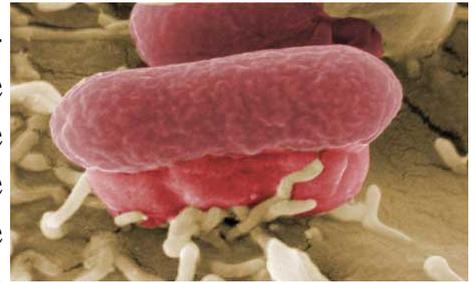
- Outbreak centre
- Suspected cases
- Other countries affected
- Cases of E.coli
- Cases of haemolytic uraemic syndrome (HUS)



## Lethal variant of E.coli



It's a combination that results in a very distant relative of the most common variant of the bacteria along with other known strains, so it would be a crossover, not a mutation called O104: H4. In the genome have been found qualified by the bacteriologist agents Holger Rohde, University Hospital Eppendorf, as "classic" between two known strains of the bacteria. The combination of both elements results in a highly aggressive variant, which remains longer than usual in the intestine and causes so much damage



persistent effects, even to produce death. The same research team noted, however, that identification the interpretation of data can take weeks. The cases range in the UK, Scandinavia and Holland. In the United

states officials said two people who recently traveled to the German city of Hamburg could have been infected so they alerted health departments.

Did you know? A strain in microbiology is the set of viruses, bacteria or fungi that have same genetic heritage.

Did you know? The World Health Organization (OMS) has indicated that the intestinal bacteria E. coli (EHEC) can be transmitted from person to person through feces or by mouth. OMS epidemiologist Andrea Ellis, warned on Friday June 3 that the bacteria "can be transmitted from person to person if there is no hygiene. For example, if someone has diarrhea and does not wash their hands can transfer bacteria to surfaces that touch. "

## Safer Fruits and Vegetables

Fruits and vegetables should be purchased in authorized retailers for confidence purpose. Once the fruit or vegetable comes home, is very important wash it under running water, and that through this simple process is almost completely free of any remnants of unwanted substances (pesticide residues, dirt and debris land) as well as much of a potential microbial contamination. Almost all fruits and many vegetables are consumed raw, without undergoing a process through heat sanitation. Sometimes it is necessary to apply a deep cleaning procedure, disinfection, rinsing and draining of vegetables for raw consumption, which will guarantee the elimination of potential pathogens. You can follow these steps or solutions used commercially for this purpose.



.Remove the outer parts dirty and rotten specimens, cracked, broken.

.Wash thoroughly with water.

.Remove the wash water.

.Soak in water a few drops of bleach "suitable for disinfection drinking water". The amount will depend on the concentration of the disinfectant. If the bleach is 35gr/l, the amount will be added to 2 ml per liter of water.

.Let stand for about 15 minutes.

.Rinse with water and drain.

### BIBLIOGRAPHY:

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## **Newsletter on Food Contamination**

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## **Newsletter on Food Contamination**

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