

## International outbreak of *Salmonella* Stourbridge infection, April- July 2005: results of epidemiological, food and veterinary investigations in France

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A total of 52 cases (27 cases in France and 25 cases in six other European countries) have now been identified as a result of investigations into the international outbreak of *Salmonella* Stourbridge infection due to contaminated unpasteurised goat's cheese [1,2,3].

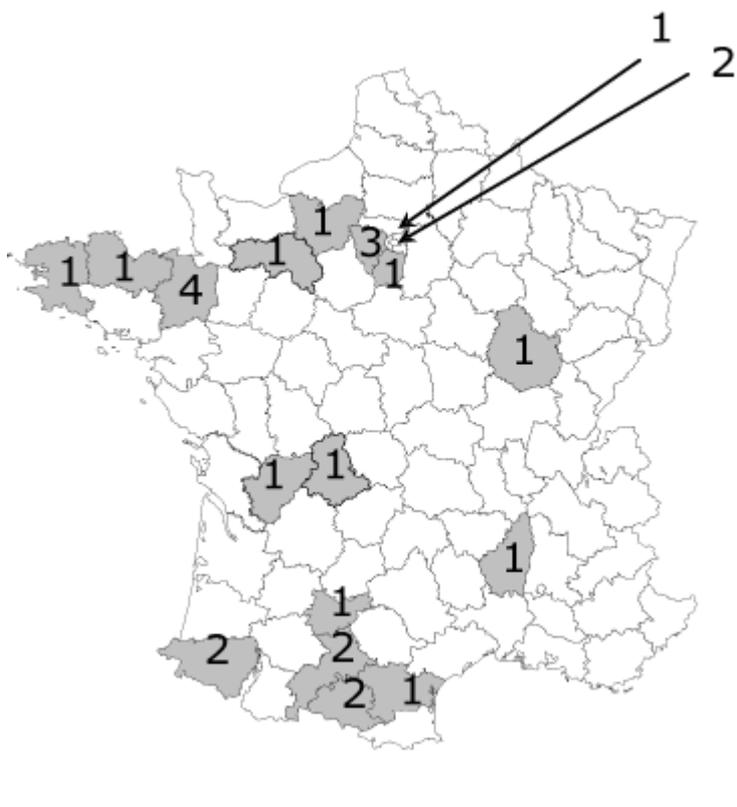
On 12 June 2005, Swedish participants in Enter-net, the international surveillance network for the enteric infections, salmonella and VTEC O157 ([http://www.hpa.org.uk/hpa/inter/enter-net\\_menu.htm](http://www.hpa.org.uk/hpa/inter/enter-net_menu.htm)), initiated an urgent Enter-net enquiry after an excess number of *S. Stourbridge* infections had been observed in Sweden in May.

On 20 June 2005, The French national reference centre for salmonella reported an excess of *S. Stourbridge* cases in France in April and May 2005. Sweden and Switzerland also reported human cases of *S. Stourbridge* infection and isolation of *S. Stourbridge* in cheese that had been eaten by the patients in May and June 2005. The two cheese brands linked to patients in Sweden and Switzerland, *Cabri ariégeois* and *Petit fiancé des Pyrénées*, were traced to a single producer in the administrative département of Ariège, in the Midi-Pyrénées region of southern France.

### Epidemiological investigation in France

The national reference centre has identified 27 cases so far, in 10 males and 17 females, aged between 1 and 70 years (median age = 45 years). The patients live in 18 different administrative départements (Figure 1)

**Figure 1.** Geographical distribution of *S. Stourbridge* infections according to département of residence, 27 identified cases, April-July 2005, France.

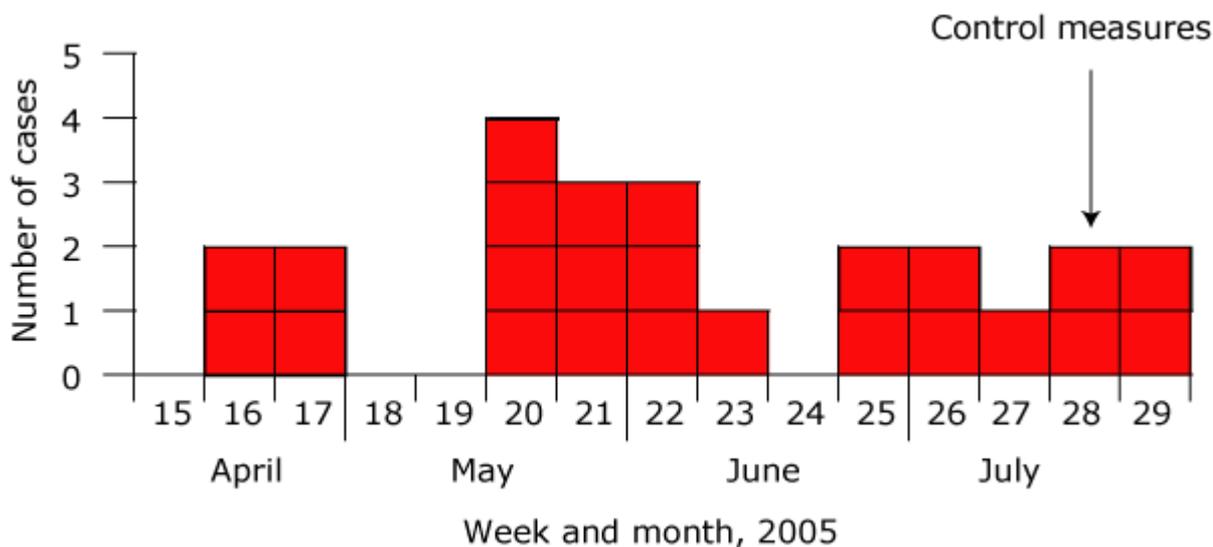


### Clinical characteristics of the French cases

Twenty four patients have been interviewed. The patients presented with the following

salmonellosis symptoms between 18 April and 18 July 2005 (Figure 2): diarrhoea (100%), bloody diarrhoea (17%), abdominal pain (79%) and fever (37%). Five cases (21%) were admitted to hospital and all have recovered. One patient who was not interviewed died from unrelated causes.

**Figure 2.** Weekly distribution of *S. Stourbridge* infections by date of symptom onset, 24 interviewed patients, France, April-July 2005.



### Food investigation in France

Interviews of the 24 patients did not uncover any source or food common to all cases.

Most of the patients (79%, 19/24) reported usually buying cheese from cheese shops where the cheese is cut to order for the customer by the sales staff. Among these patients:

- 4 had eaten *Petit fiancé des Pyrénées* brand or *Cabri ariégeois* brand goat's cheese in the week before symptom onset.
- 3 had eaten a generic kind of goat's cheese called a 'tomme' from the Pyrénées; two of these patients did not remember the brand, one patient reported that the brand was *Le Rogallais*.
- 12 had eaten other types of non-brand name cheese that had been cut to order in the cheese shops. The types of cheese reported were Comté, Emmental, Pyrénées, goat's cheese, and not specified.

In order to test the hypothesis that there had been cross contamination between cheeses made by the producer in Ariège and other cheeses cut to order in the cheese shops reported by the patients, the list of cheese shops was sent to the local veterinary services who investigated whether these establishments had sold cheeses from the Ariège producer in the month before the patients' symptom onsets.

### Veterinary investigations in France

The local veterinary service in Ariège inspected the premises where the *Petit fiancé des Pyrénées* and *Cabri ariégeois* cheeses were produced. The producer also made *Cabrioulet* brand 'tomme' goat's cheese. The three kinds of cheese are made from milk from a single herd of 260 goats.

*S. Stourbridge* was isolated from all three types of goat's cheese tested and from milk from the goat herd. An analysis of milk from each goat found a single goat which was an asymptomatic excretor.

The goat's cheeses from this producer were distributed to 29 wholesalers nationwide in 20 administrative départements, and exported to 12 other European countries (Andorra, Austria,

Belgium, Denmark, Germany, Italy, Luxembourg, the Netherlands, Spain, Sweden, Switzerland and the United Kingdom) and to Japan

The cheese shops reported by 11 of the 15 patients who had eaten cheese cut to order, but who had not eaten *Petit fiancé des Pyrénées* or *Cabri ariégeois*, were investigated. The investigation found that 9 of the 11 patients had bought cheese in cheese shops that also sold cheeses made by the Ariège producer.

### Control measures

The production of cheese from unpasteurised milk by the producer was suspended, and all batches of *Petit fiancé des Pyrénées*, *Cabri ariégeois* and *Cabrioulet* brand cheese were withdrawn on 13 July. A warning to consumers was issued through the national media.

### Conclusion

Thirteen of the 24 cases of *S. Stourbridge* infection (where the patients were interviewed) could be linked to the goat's cheese made by the Ariège producer. Four cases were linked to consumption of *Petit fiancé des Pyrénées* or *Cabri ariégeois* brand cheese; nine other cases could be linked to consumption of cheese contaminated in a cheese shop (cross contamination) by contact with equipment (knives, cheese cutting wires or surfaces) that had been used to cut cheeses made by the Ariège producer. The cross contamination probably occurred between the *Cabrioulet* 'tomme' cheese and other hard or semi-hard cheeses. The absence of new cases since implementation of control measures shows that they were effective. The two patients with symptom onset after 13 July had bought cheese before the product recall.

### Results of the European investigations

In response to the 12 June enquiry, 25 cases of *S. Stourbridge* infection were notified in 6 other European countries: Switzerland, Sweden, Germany, Austria, the United Kingdom (England) and the Netherlands. Of the 11 patients for whom food consumption information is available, three reported eating goat's cheese made by the Ariège producer in the days before symptom onset, and five reported eating goat's cheese but did not have information about its origin.

On 6 July 2005, the Swedish health authorities informed the other national health authorities in Europe via the Rapid Alert System for Food and Feed (RASFF, [http://europa.eu.int/comm/food/food/rapidalert/index\\_en.htm](http://europa.eu.int/comm/food/food/rapidalert/index_en.htm)). This initial message was followed by messages from France and other affected countries. Products were recalled in Sweden, Luxembourg and Switzerland.

*This article has been adapted and translated from reference 1 by the authors and the Eurosurveillance editorial team.*

### References:

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2. Vaillant V, Espie E, Fisher I, Hjertqvist M, de Jong B, Kornschöber C, et al. International outbreak of Salmonella Stourbridge infection in Europe recognised following Enter-net enquiry, June-July 2005. *Eurosurveillance Weekly* 2005; **10**(7): 21/07/2005. (<http://www.eurosurveillance.org/ew/2005/050721.asp#1>)
3. Vaillant V, Espie E. Cases of Salmonella Stourbridge infection in France, April-June 2005. *Eurosurveillance Weekly* 2005; **10**(7): 21/07/2005. (<http://www.eurosurveillance.org/ew/2005/050721.asp#2>)