



## 6th annual workshop of the EU-RL Rome, 4th November, 2011



# French EHEC outbreaks in 2011



VetAgro Sup  
Campus Vétérinaire de Lyon

**Dr. Estelle LOUKIADIS**

*French NRL/ Laboratoire d'étude des microorganismes alimentaires pathogènes (LMAP)*

*UR CALITYSS Equipe Ecologie microbienne et sécurité sanitaire des aliments*



# Surveillance of STEC infections in France



Ministère de la santé et des sports  
Ministère de l'agriculture et de la pêche  
Ministère de l'économie, de l'industrie et de l'emploi

CIRCULAIRE INTERMINISTERIELLE N°  
DGS/EA3/DUS/DGAL/MUS/DGCCRF/C2/2009/248 du 03 août 2009

## Regulation specifying how HUS cases should be monitored and which control measures should be taken

- **Describes the system of surveillance of HUS cases (coordination by the INVS).**

(children under 15 years old/ hospitals' network/ diagnosis and confirmation by the French NRCenter)

- **Specifies the role of each French Ministry (importance of the network and data's centralization)**

(alert/case definition/ epidemiological investigations/trace back study/ human and food microbiological analyses)





## Outbreak of HUS cases associated with minced beef in France, June 2011



**14 June 2011**, 5 cases of HUS were reported to the Public Health authorities in the Lille region in North of France.

- **Alert!**
- **Epidemiological investigations** were initiated by local Public Health authorities to describe the extent of outbreak and identify the vehicles of transmission in order to guide control measures and prevent further cases
- **Patients' stools** are sent to the French NRCenter for confirmation





## Outbreak of HUS cases associated with minced beef in France, June 2011



**15 June 2011**, preliminary investigations indicated that HUS cases are associated with consumption of frozen minced beef.

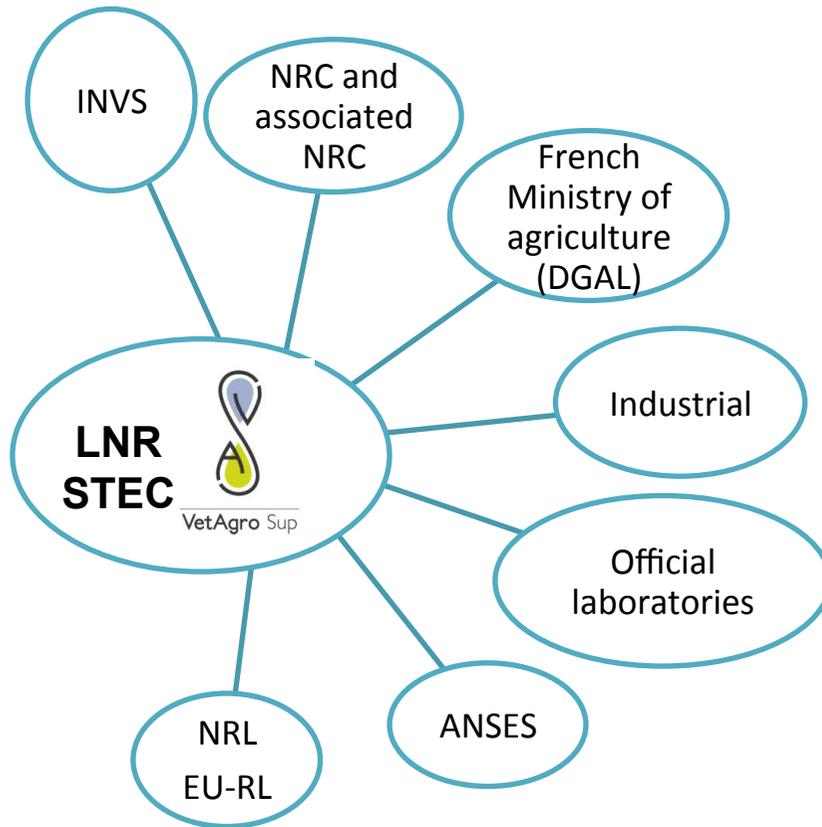
(brand STEAK COUNTRY use-by 11 May 2012 sold in LIDL supermarkets of 3 departments 59, 62 and 60)

*(epidemiological and trace back investigations INVS/DGAL).*

- 15 June (D+1), **immediate withdrawal and call back** of the batch of the suspected frozen meat + 2 supplementary batches (use by 10 and 12 May 2012) (without any microbiological results)
- Food samples were sent to the French NRL for confirmation.

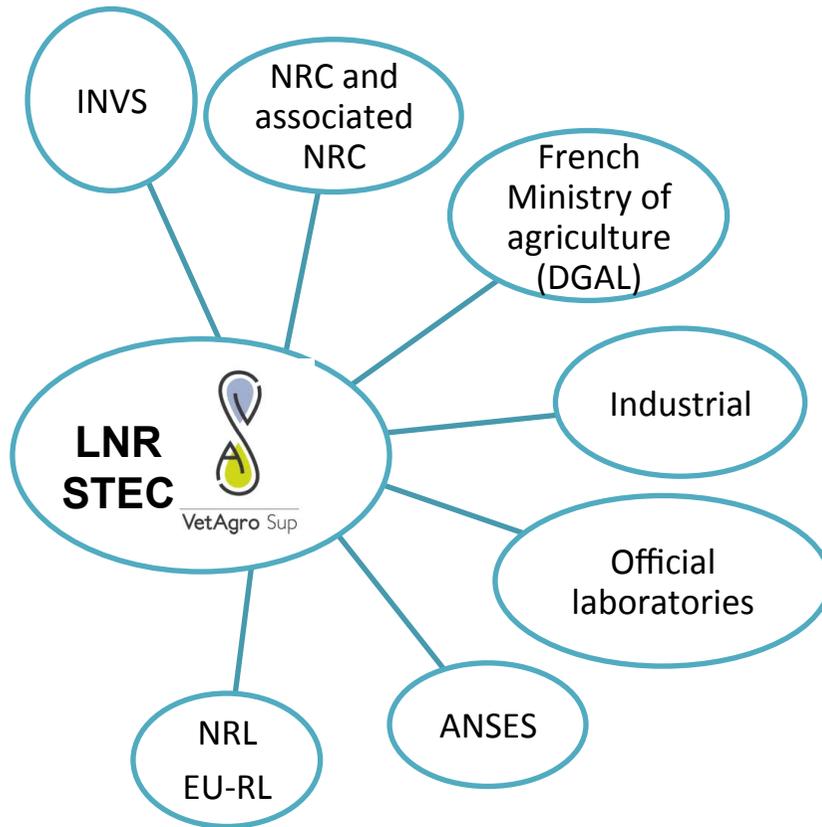


# Outbreak of HUS cases associated with minced beef in France, June 2011





# Outbreak of HUS cases associated with minced beef in France, June 2011



## 17 June: samples received at the NRL

*Human microbiological investigations: presence of stx2 genes and O157 markers in total DNA extracted from patients faeces*

### 2 methods used in parallel in meat:

NF EN ISO 16654

ISO TS 13136

⇒ Isolation of O157:[H7] strains **and** *ee+* *stx2+* O177:[H25] STEC which could explain HUS cases  
**! : atypical SF O157 + non-top 5 STEC**

### Trace back investigations and control plan of the industrial

Official lab (screening) and NRL (confirmation)

⇒ More than 200 STEC isolated



## Outbreak of HUS cases associated with minced beef in France, June 2011



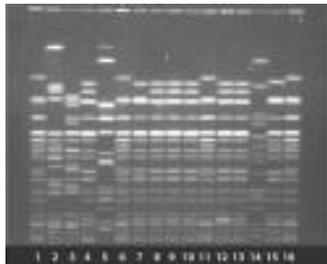
- Trace- back investigations

**2<sup>nd</sup> July 2011**, contamination of other meat products (same raw materials) / withdrawal and call back of all of these products.



- Epidemiological investigations

**12 July 2011**, 19 HUS cases were reported (18 children/1 adult). Among these 19 cases, 11 have a direct or an indirect link with the consumption of contaminated meat.



- Microbiological investigations

**Sept/Oct 2011:** Comparison of strains isolated from patients and meat (more than 250 souches): PFGE, MLVA.

⇒ Legal procedure



## Outbreak of HUS cases associated with fenugreek sprouts in France, June 2011

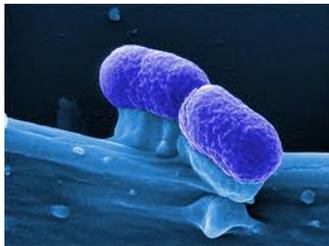


- **22 June 2011**, 2 cases of HUS and 6 cases bloody diarrhoea in Bordeaux region  
-> epidemiological investigations to identify the source and take appropriate control measures.
- The epidemiological and microbiological investigations have now been completed.  
**15 cases were identify:**
  - 9 HUS
  - 4 bloody diarrhoea ,
  - 2 simple diarrhoea.11 patients hospitalised, none of whom died.

All of the patients lived in Bègles or nearby.



## Outbreak of HUS cases associated with fenugreek sprouts in France, June 2011



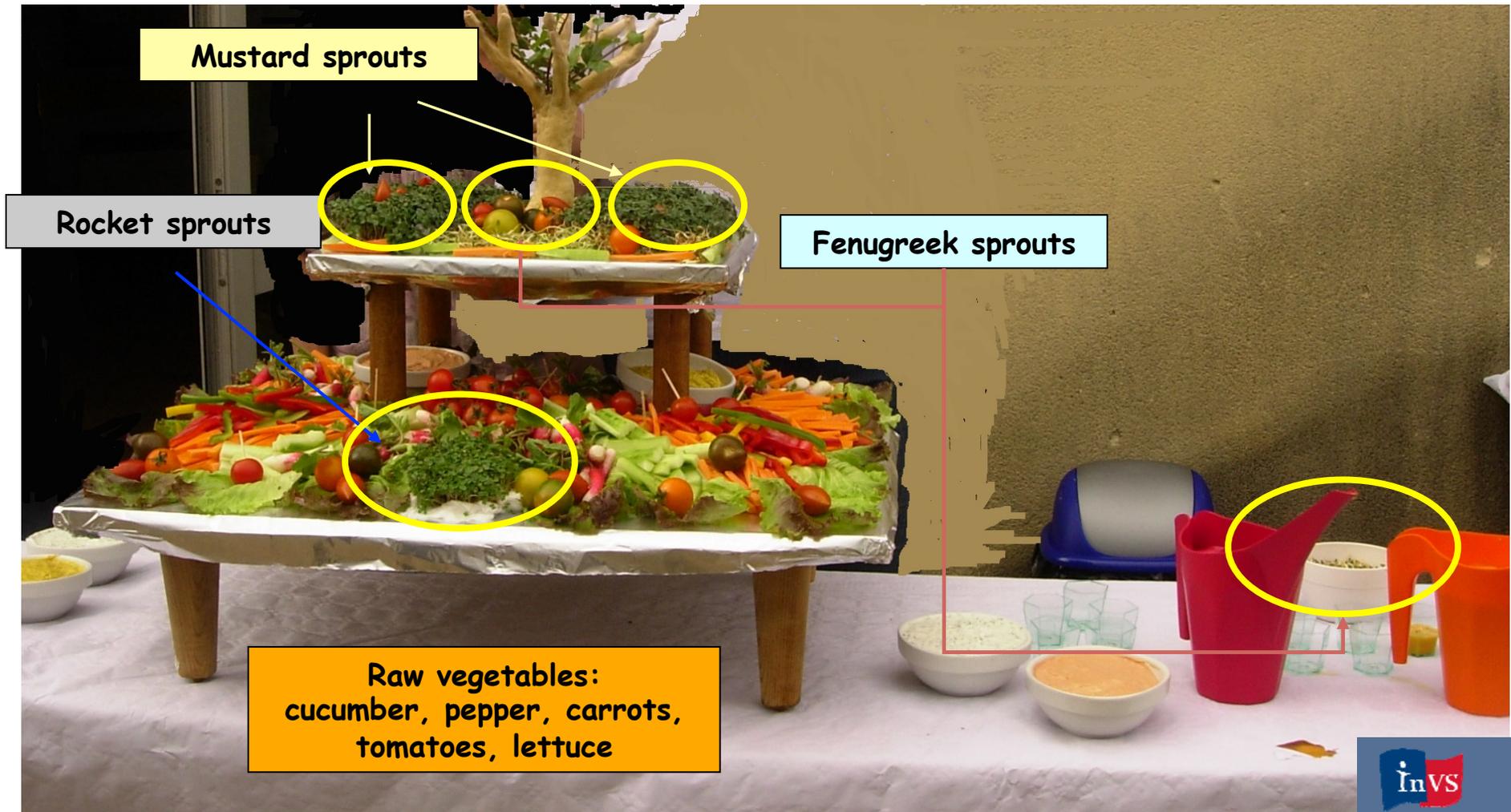
- **13 patients** had consumed sprouts served as part of the buffet for the open day that took place on 8 June 2011 in a recreation centre for young children (CLPE) in Bègles. 2 cases involving non-consumers of sprouts were secondary cases caused by human-to-human transmission of people in contact with a patient who had consumed sprouts.
- All of the cases identified were either directly or indirectly related to this center for children.
- 12 cases of infection with **EHEC O104:H4** were confirmed.
- Cohort study undertaken of 169 participants of the open day has shown a **strong and significant relationship between consumption of sprouts during the buffet and occurrence of the disease.**



# Outbreak of HUS cases associated with fenugreek sprouts in France, June 2011

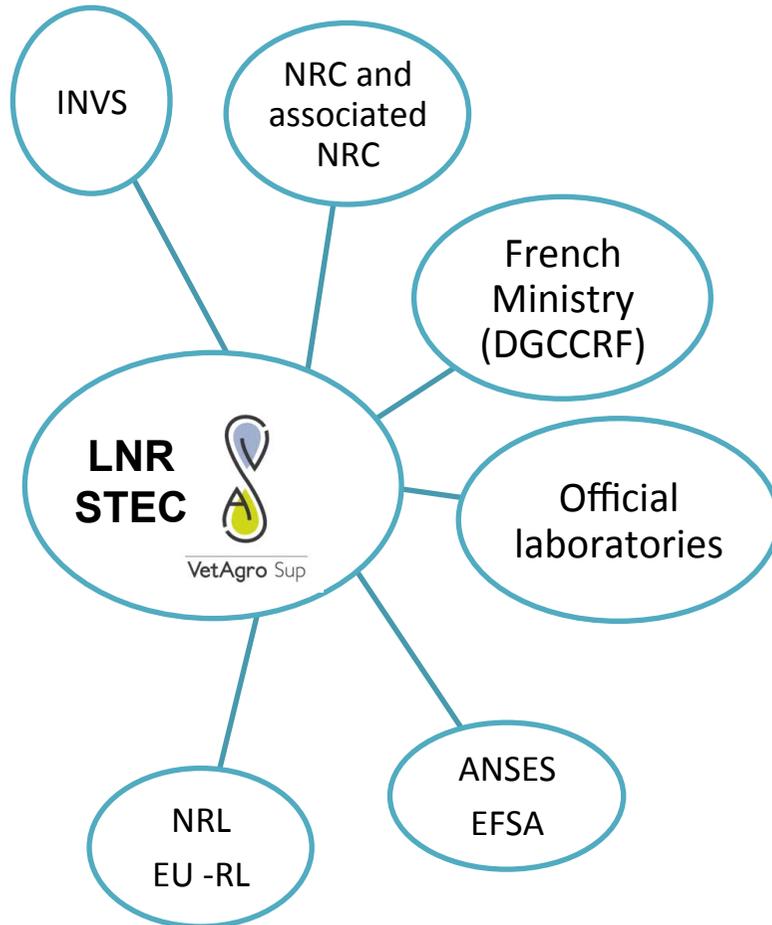


## Photo of raw vegetable buffet





# Outbreak of HUS cases associated with fenugreek sprouts in France, June 2011



## Samples from CPLE received on the 25<sup>th</sup> of June

Human microbiological investigations: isolation of an EHEC O104:H4 strain in human feces (similar to the German clone)

### Methods used :

ISO TS 13136 and adapted protocol from the EU-RL + in parallel when possible: Protocol from the German NRL (germination and specific enrichment media and duration)

## A total of 29 seeds samples, 4L of cold soup and 3L of water were analyzed

Seeds+ packets washing + packets + in parallel when possible: Sprouts (after germination) and germinating supports (compresses)

⇒ **No positive results!**

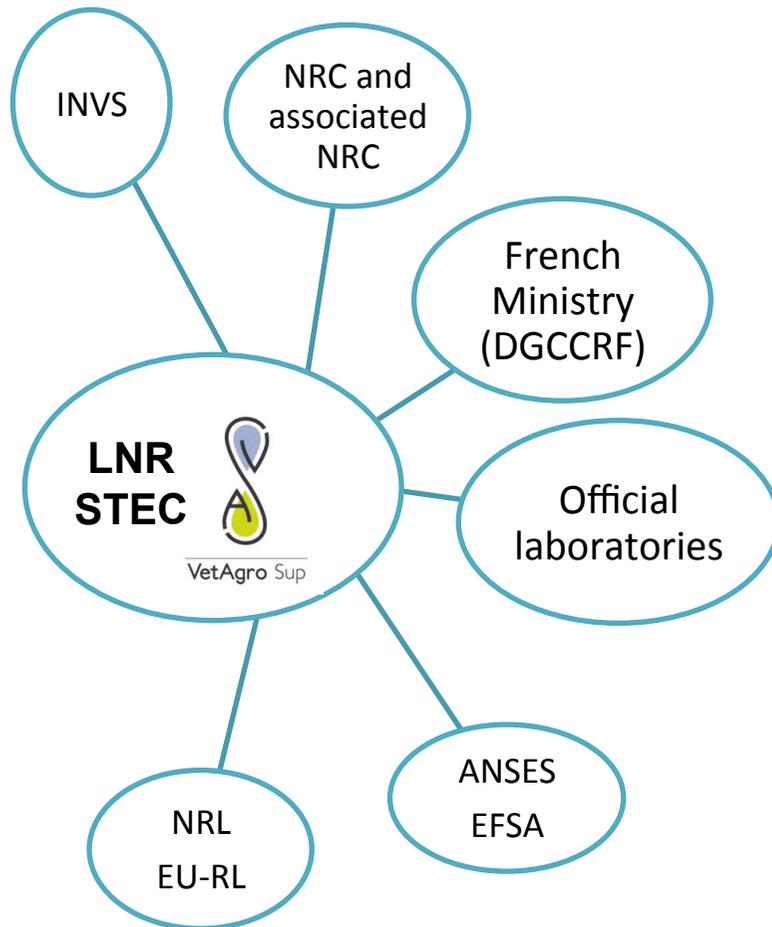
(neither *stx*, *wzxO104*, *aggR* signals nor strain isolated)

## Information, reference method and materials for official labs



French official laboratories

# Outbreak of HUS cases associated with fenugreek sprouts in France, June 2011



**EFSA report issued on 05 July 2011:** Tracing seeds, in particular fenugreek seeds, in relation to the Shiga toxin-producing *E. coli* (STEC) O104:H4 2011 Outbreaks in Germany and France.

**Association between human cases and consumption of fenugreek seeds imported from Egypt**

**06 July. Decision 2011/402/UE** on emergency measures applicable to fenugreek seeds and certain seeds and beans imported from Egypt



(*Trigonella foenum-graecum*)<sup>sm.</sup>



## Outbreak of HUS cases associated with fenugreek sprouts in France, June 2011



### Control measures in France

- Release for free circulation in France of seeds and certain beans from Egypt was prohibited until 31 October 2011.

- Withdrawal/call back/destruction: all lots of fenugreek seeds imported from Egypt during the period 2009-2011.

- Surveillance measures all along the food chain (French ministry and professionals) from June 2011

*TN 32 DJ Control plan of raw sprouts et seeds*

*TN 32 DK Surveillance plan of raw vegetables*

NS DGAL/SDQPV/N2011-8154 du 27/06/11 Increasing of inspections of seeds and sprouts producers.

Negative results do not necessarily prove the absence of STEC in a lot

**! Non homogenous, low level of contamination of the lots?**





# The French NRL for STEC



A beautiful team composed by 15 persons!



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**Thanks for your attention!**



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