

**O157 enterohaemorrhagic
E.coli in raw beef minced meat
“Filet américain” in Belgium.**

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DEFINITION

“ FILET AMÉRICAIN ” =
RAW BEEF MINCED MEAT +
SPECIAL SAUCE (OIL, EGGS,
MUSTARD, VINEGAR, SPICES,
VEGETABLES, ONIONS,
PRESERVATIVES)

MAIN CONSIDERED STEPS

- ▣ **Farming**
- ▣ **Slaughtering**
- ▣ Cooling and storage of the carcasses
- ▣ **Cutting and packaging**
- ▣ Storage after cutting
- ▣ **Mincing**
- ▣ Storage, packaging and delivery
- ▣ **Consumption**
- ▣ **Diseases related to EHEC O157**

FARMING

- ▣ 1)Prevalence of positive farms : **5,6 % (n = 195)**
- ▣ 2)Percentage of EHEC O157 shedding adult cattle. **4,2 % (n = 260)**
- ▣ 3)Number of EHEC O157 / g faeces : **unknown**

Objectives:

- **Reduce the level and the rate of carriage in farms and/or before slaughterhouse**

SLAUGHTERING

- 1) Prevalence of EHEC O157 contaminated carcasses :
0,5 % (n = 6000)
- 2) Number of *E.coli* on carcasses : **90 % with < 10 cfu/cm²**
- 3) Number of EHEC O157 on 2 positives carcasses :
1 cfu/cm² & 200 cfu / cm²

Objectives:

- Reduce the level of carcass contamination
- perhaps, elimination of carcasses with visual faecal contamination of the raw product fabrications

CUTTING AND MINCING

- 1) Kind of cutting pieces
- 2) Number of cutting pieces from different animals per box of ground beef
- 3) Number of cutting boxes mixed for the mincing
- 4) Cross-contamination between several successive batches

Objectives:

- Reduce the level of contamination of all batches

or/and

- Reduce the number of positive batches

CONSUMPTION

- Amount of “filet américain” eaten/year/consumer : **2,2 Kg**
- Estimated number of “filet américain” consumers: <5 years: 83.160; 5-65 years: 4.120.030; >65 years: 1.107.567
- Amount of “filet américain” eaten in one meal: **125 g**
- Average number of this kind of meal per year: **18.**

Objectives:

- **Reduce the consumption in the high risk populations by a better information**
- **Good respect of the cooling chain to avoid to increase the contamination level**

DISEASES

- 1) Incidence of VTEC in hospital coprocultures: **1,02 % VTEC (0,2 % O157) (n=17.296)**
- 2) Incidence of Haemolytic Uremic Syndrome: **Sporadic cases (0,42 / 100.00 inhabitants)**
- 3) Number of death following HUS: **4 deaths / 42 cases**

Objectives:

- **Understanding why we don't have Belgian epidemic outbreaks or more sporadic cases with this risk consumption behaviour**
- **Study of the importance of raw beef in Belgian EHEC diseases**

STEPS	AVERAGE PREVALENCE (>1 cfu/25 g or 400cm ²)	AVERAGE CONTAMINATION LEVEL OF THE POSITIVE.
Herd	5,6 %	?
Adult bovines (faeces)	4,2 %	?
Carcass (end of slaughtering)	0,35 %	1 cfu/cm ² (1 and 200 cfu/cm ²)
Carcass (end of cooling)	0,35 %	1 cfu/cm ² (1 and 200 cfu/cm ²)
Cutting: piece of cutting	0/60 samples	?
Cutting: cutting box		?
Mincing: batch of minced meat	0,035 %	<10 cfu / g
Final product: consumer portion	0,035 %	<10 cfu / g

CONCLUSIONS

- ☞ Prevention of EHEC in ready-to-eat raw materials is very difficult and need an integrated strategy on all the food production chain
- ☞ For the raw beef products, the main objective must be to reduce the contamination level at each step by hygienic or mixing measures
- ☞ For high risk populations, these preventive measures are actually insufficient in order to avoid problems and consumer information must be extended
- ☞ More efficient preventive strategies as irradiation or steam pasteurisation of carcasses must be studied for raw beef meat production.