

Disease-causing bacteria – what you need to know

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What are they?

Foodborne pathogens – disease-causing bacteria that can be found on food

***Listeria monocytogenes*, pathogenic *E. coli*, *Salmonella*, *Campylobacter* and others**

Heat treatments such as proper cooking and pasteurisation will inactivate them

Why are they a problem?

Product withdrawal/recall

Several well-known cheese brands—including [Sargento](#), [Meijer](#), [Santino](#), [Amish Classics](#), [Country Fresh](#), and [Guggisberg](#)—have issued recalls of Colby, pepper jack, shredded taco, and cheddar cheeses among concerns about *Listeria* contamination at a cheese factory in Indiana. No illnesses have yet been reported.

The recall prompted [Taylor Farms to recall](#) 6,630 pounds of chicken and pork salad

[Country Fresh is recalling](#) 2,552 cases of cooking and snacking products that contain Sargento-branded cheeses.

The products were shipped to retailers in Alabama, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia

More than 20 tons of veal recalled for rare Shiga toxin *E coli*

Public health issue

FDA investigating after two deaths linked to listeria in cheese

By Susan Scutti, CNN

Multistate Outbreak of Shiga toxin-producing *Escherichia coli* Infections

Linked to Flour

Number of cases in Ireland

In 2015 on IOI number of reported cases
(HPSC, 2016 & PHA, provisional data)

Campylobacter – 3772

Salmonella – 394

Listeria – 25

E.coli/VTEC- 787

What are the regulations?

Relevant regulations are 2073-2005

Specific for pathogenic bacteria

Place responsibility on the food business

Also relevant are No. 852/2004 and No. 853/2004

**Relate to hygiene of foods of animal origin
and to putting safe food on the market.**

Analyse food and processing environment samples

Responsibility of a food business owner

**Awareness of issues relating to disease-
causing bacteria in food**

**Analysis of the food and processing
environment**

An adequate hygiene plan implemented

Reporting to the authorities

Pathogens and food type

Pathogen	Most relevant food
Pathogenic <i>E. coli</i>	Dairy products, meat
<i>Listeria monocytogenes</i>	All food types
<i>Salmonella</i>	Meat - pork
<i>Campylobacter</i>	Poultry

Indicator bacteria

Not necessarily dangerous themselves, but indicate contamination

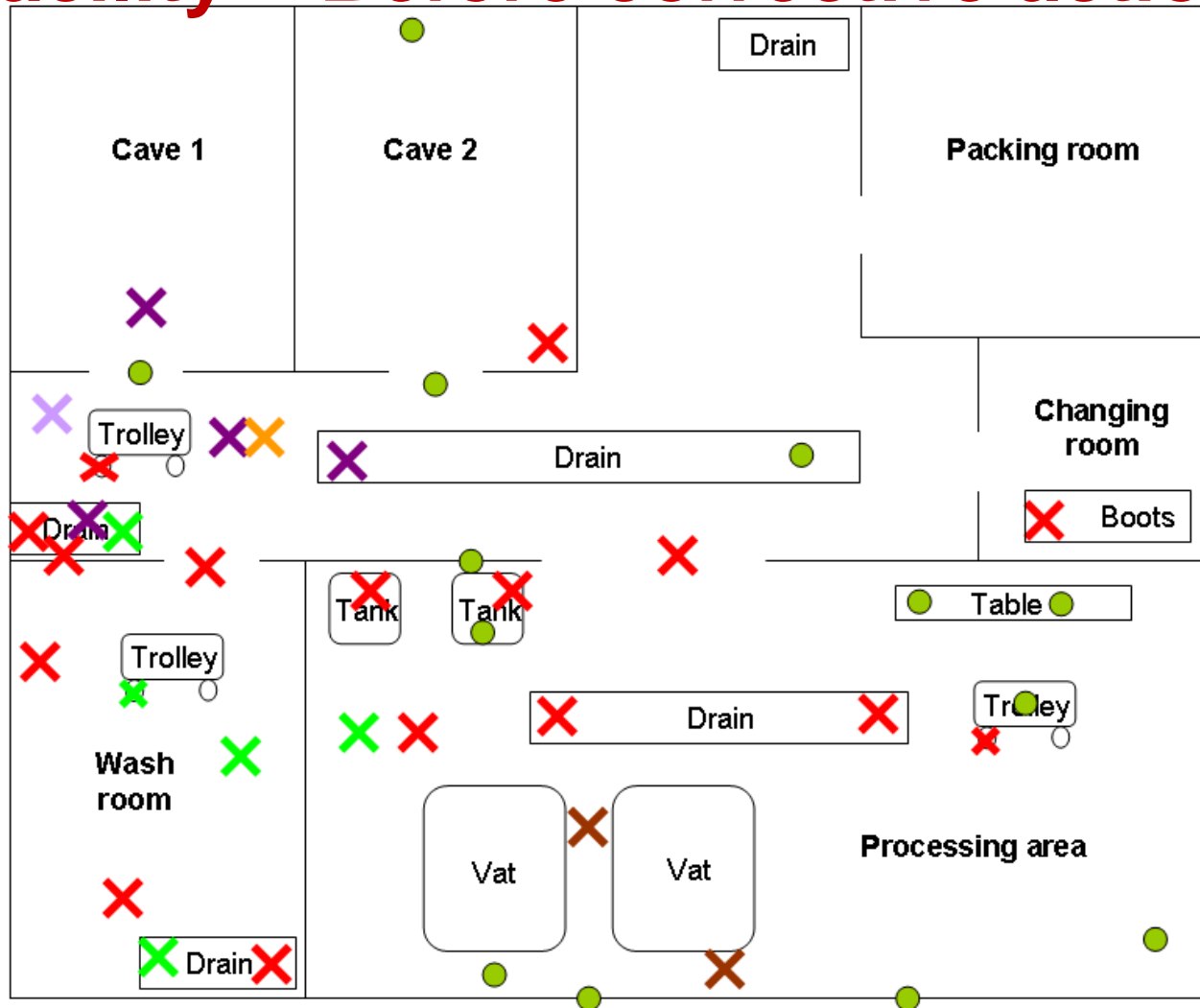
Easy to measure

Actions based on a positive result

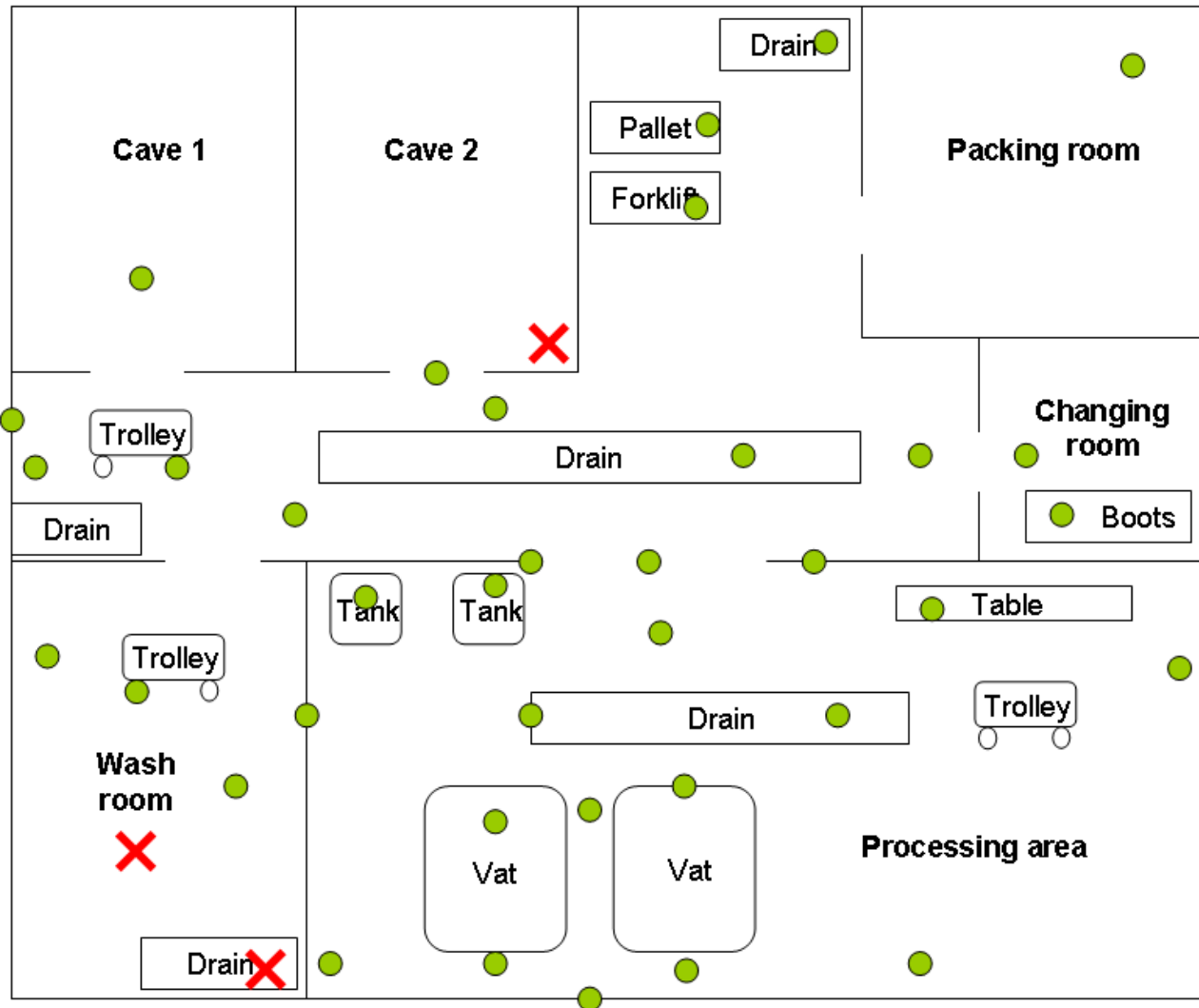
Coliform, *E. coli*, *Streptococci*, Enterobacteriaceae

Not useful – need for pathogen analysis!!

facility – Before corrective actions

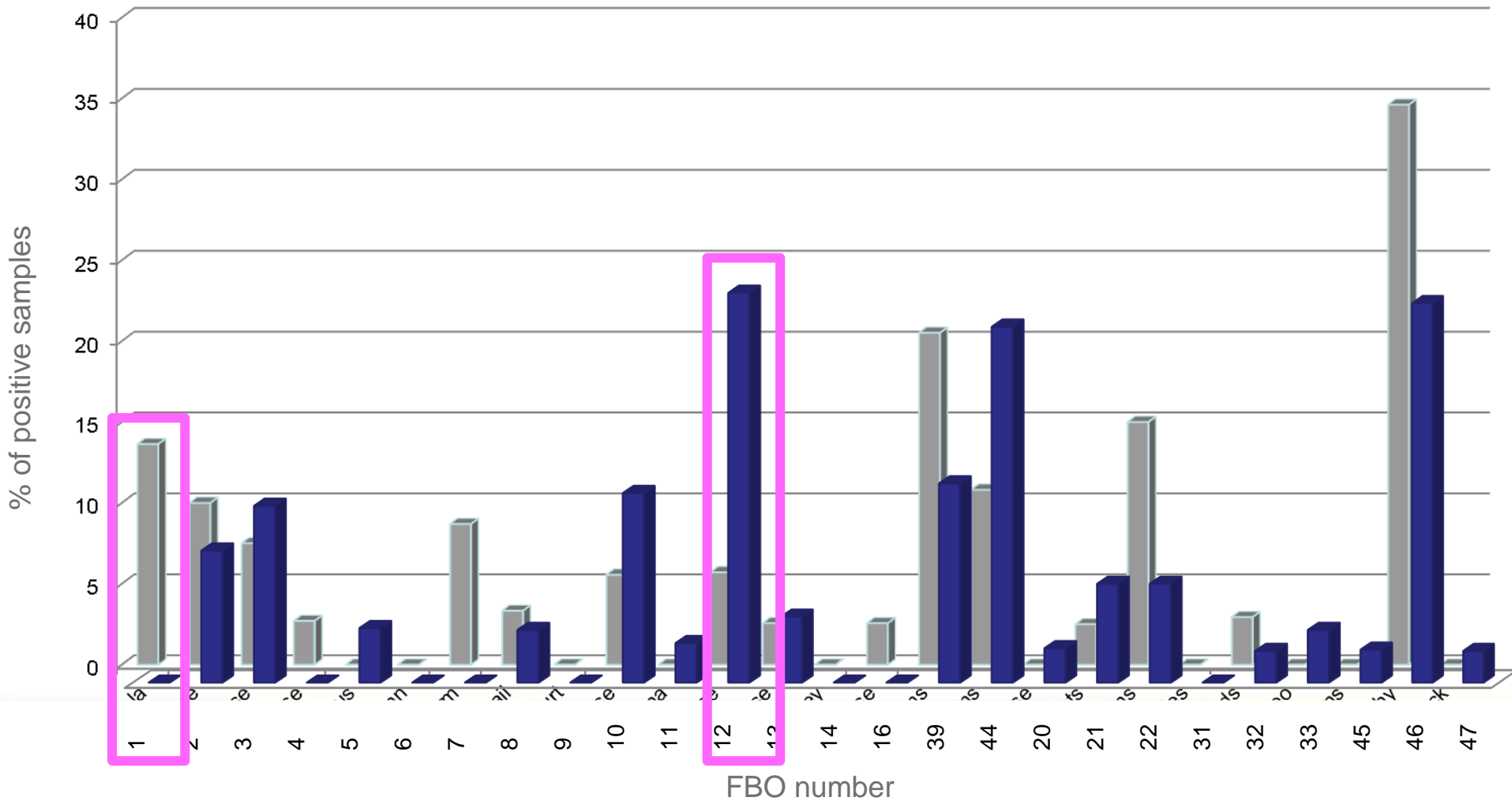


Example of a contaminated food processing facility – After corrective actions



L. monocytogenes occurrence over 2 years sampling

2013 2014



Detection of pathogenic *E. coli*

Move from traditional methods to molecular methods

Can detect lower numbers

Current discussion on the interpretation of the results for detection of genes by PCR

Salmonella

Low frequency of detection, apart from pork

Must undertake the analysis

Campylobacter

Greatest cause of disease outbreaks. Generally, self-limiting gastroenteritis

Ongoing research on reduction, but Campylobacter are on about 80% of poultry

Cooking will inactivate it, but care is needed to reduce the risk of cross-contamination

Guidelines to help in awareness and control of pathogens

Understand the nature of pathogen contamination and take it seriously

Choose the right sampling sites, frequency and analysis methodology

Establish critical control areas

Be especially vigilant during phases of construction

In cases of widespread contamination, critically review the floor sanitisation procedures

Carefully document your progress and efforts - map

Some day-to-day issues

- o **Good Hygiene & cleaning practices**
- o **Handwashing** – critical in preventing contamination of your food and your facility
- o **Clean drains** regularly & strictly follow manufacturer's guidelines when using cleaning agents in drains, flush with adequate amount of water.
- o **Clean the cleaning utensils:** Drain brushes, scrub pads, hoses, wet floor signs and other cleaning utensils may spread if they are not cleaned and sanitized after each use
- o **Don't use power washers** in your facility
- o **Shoes-** outside shoes carry bacteria- have separate work shoes that do not leave the facility and do not go outside where they can become contaminated
- o **Hair nets/beard covers** – hairs carry bacteria
- o **Don't wash raw Chicken or other poultry–** this will spread bacteria (*Campylobacter*) around and can cause cross contamination of your facility
- o **Store Food safely**
- o **Foamers and foggers** – only use when on production shut down – they can easily cross contaminate a facility

Thank you for your attention



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