



Canadian Food  
Inspection Agency

Agence canadienne  
d'inspection des aliments

## Canadian Food Inspection Agency



### **Our vision:**

To excel as a science-based regulator, trusted and respected by Canadians and the international community.

### **Our mission:**

Dedicated to safeguarding food, animals and plants, which enhances the health and well-being of Canada's people, environment and economy.

## ***CFIA Science Branch and Laboratories***

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# Outline

- 1) Introduction
- 2) Food microbiology testing capability
- 3) Triggers and issue communication during an investigation
- 4) Laboratory investigation – brief overview

# Who Are We?

## Science Branch - Laboratories

*We form part of the **science base** of the CFIA by contributing laboratory testing, method development, research, scientific advice and expertise to maintain **domestic and international confidence** in the programs and standards of the CFIA.*

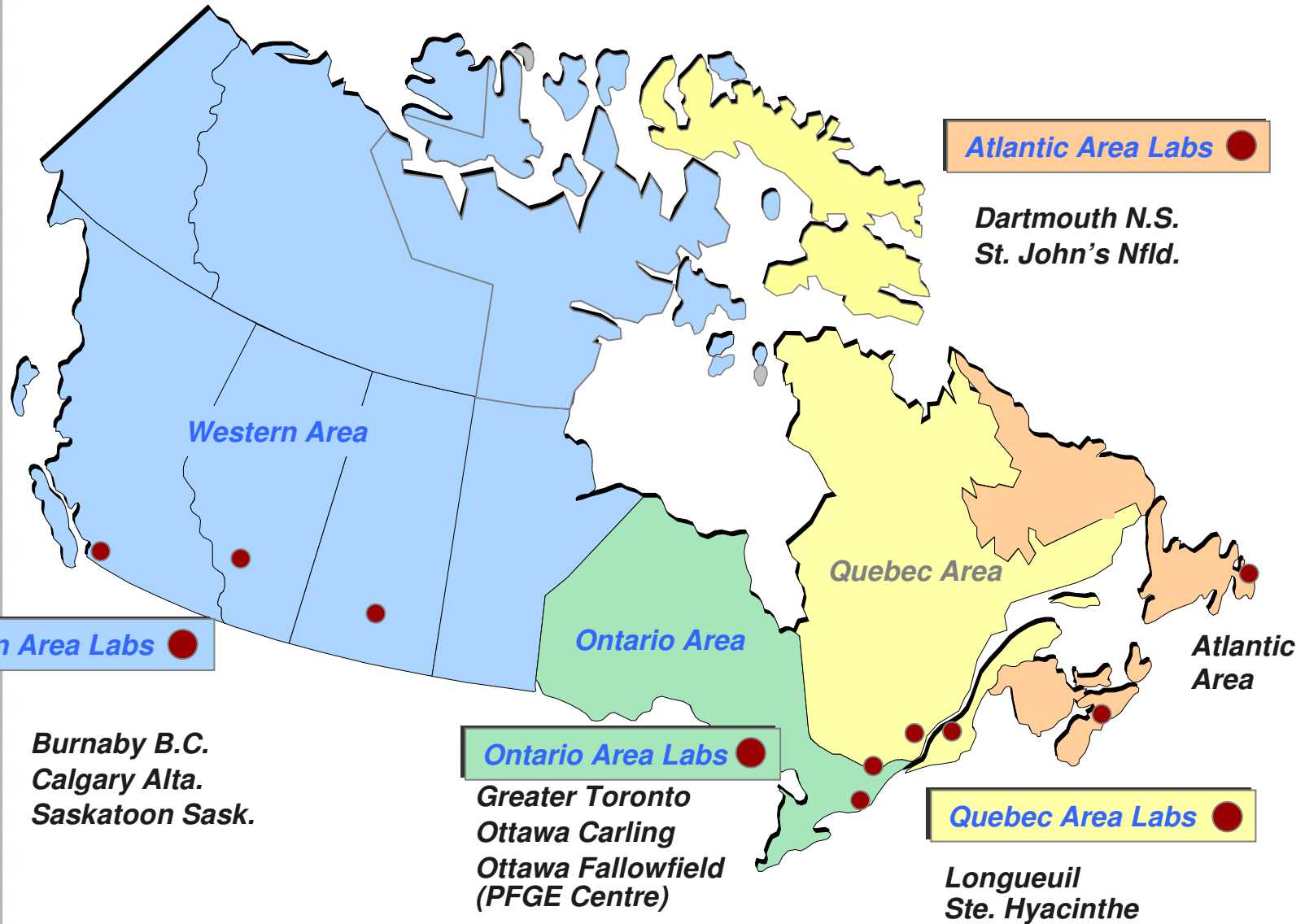
- Animal Health, Plant Health, Food Safety Science
- Food: safety, nutrition, authenticity and composition
- Testing: Routine monitoring, Directed, Surveys, Investigations & Complaint samples

CFIA Labs are accredited to ISO 17025 standards

- quality assurance and method validation are essential
- the methodology developed and used is for regulatory compliance



# Laboratories Directorate Food Laboratories



# Food Lab Programs - Sample Matrices

- Meat, Dairy, Eggs, Honey, Fish and Fish Products
  - Food of animal origin
- Fresh and Processed Fruits and Vegetables
- Maple and Maple Products
  - Food of plant origin
- Bread, sports nutrition, infant formula, special dietary use, bottled water, beverages, spices, chocolate, peanut butter, etc.
  - All other foods as defined by the Food and Drugs Act
- Processing environment samples

# Food Microbiology Laboratories – What we test for

- Indicator organisms
  - E. coli, coliforms, ACC, yeast, mold
- Safety parameters – Salt content, pH, Aw
- Food pathogens
  - Salmonella, Listeria, Shigella, E. coli O157:H7, Campylobacter, Vibrio, Staph aureus, SET, Cronobacter sakazakii, C. perfringens, B. cereus, etc.
- Container integrity / commercial sterility
- Virology, parasitology
- Extraneous material
- Molecular typing
  - PFGE (Salmonella, L. mono, E. coli O157, Shigella)
  - Ribotyping



# Lab Role in an Investigation or Outbreak

- **Issue Communication**

- The Area Recall Coordinator (ARC) or the Office of Food Safety and Recall (OFSR) usually the first contact
- Notification then proceeds to Area Operations, the Program, Food Safety Division and Food Safety Science Directorate (FSSD)
- FSSD coordinate with lab

# Lab Role in an Investigation or Outbreak

- **Information gathering**

- Suspect food source, symptoms, onset, duration, etc.
- What testing is requested
- Where to send samples
- When will samples be delivered
- How many samples are anticipated
- Who to inform of results

# Lab Role in an Investigation or Outbreak

## Ability to handle large volumes of samples can present challenges

- **Coordination of sample receipt & analysis**
  - Sample information provided
  - Dedicated sample receipt personnel
  - Sample “triage” may be required
  - Estimation of number of samples and arrival time prior to receipt
    - Reagents are prepared, media on hand, staff on stand-by
  - Rotation of resources
  - Sharing the work across all labs (if possible)

# Lab Role in an Investigation or Outbreak

- **Storage Space & Equipment Limitations**

- Refrigerated storage rental
- Clear policies in place on sample disposal
- Prioritization of samples

- **Communication**

- Communication of results and any questions from the lab occurs through one person in FSSD
- Creation of standardized investigation templates for sample tracking and ease of result communication
- FSSD communicates results to ARC, OFSR, Program, FSD and fields follow-up questions

# Follow-Up Activities

## After the reporting...

- Additional testing may be needed on the sample (e.g., enumeration, pH, etc.)
- Follow-up samples may be necessary
- Isolate(s) sent for PFGE analysis and serology (if needed)
  - All isolates typed (environmentals, food - whether distributed or not)

# Follow-Up Activities

## After the reporting (continued)...

- PFGE pattern / Serotype communicated to all parties
  - FSSD verify with Inspector, Program whether product in distribution
  - If possible someone consumed product, pattern posted to PulseNet discussion board
  - If applicable, link to recall notice posted with the pattern
- Strive for timely and effective communication of all results

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