

Sanitation of Meat and Poultry



Louisiana
Department of
Agriculture and
Forestry



Louisiana Department of Agriculture and Forestry MEAT INSPECTION DIVISION



MIKE STRAIN DVM, COMMISSIONER

AREA OFFICES

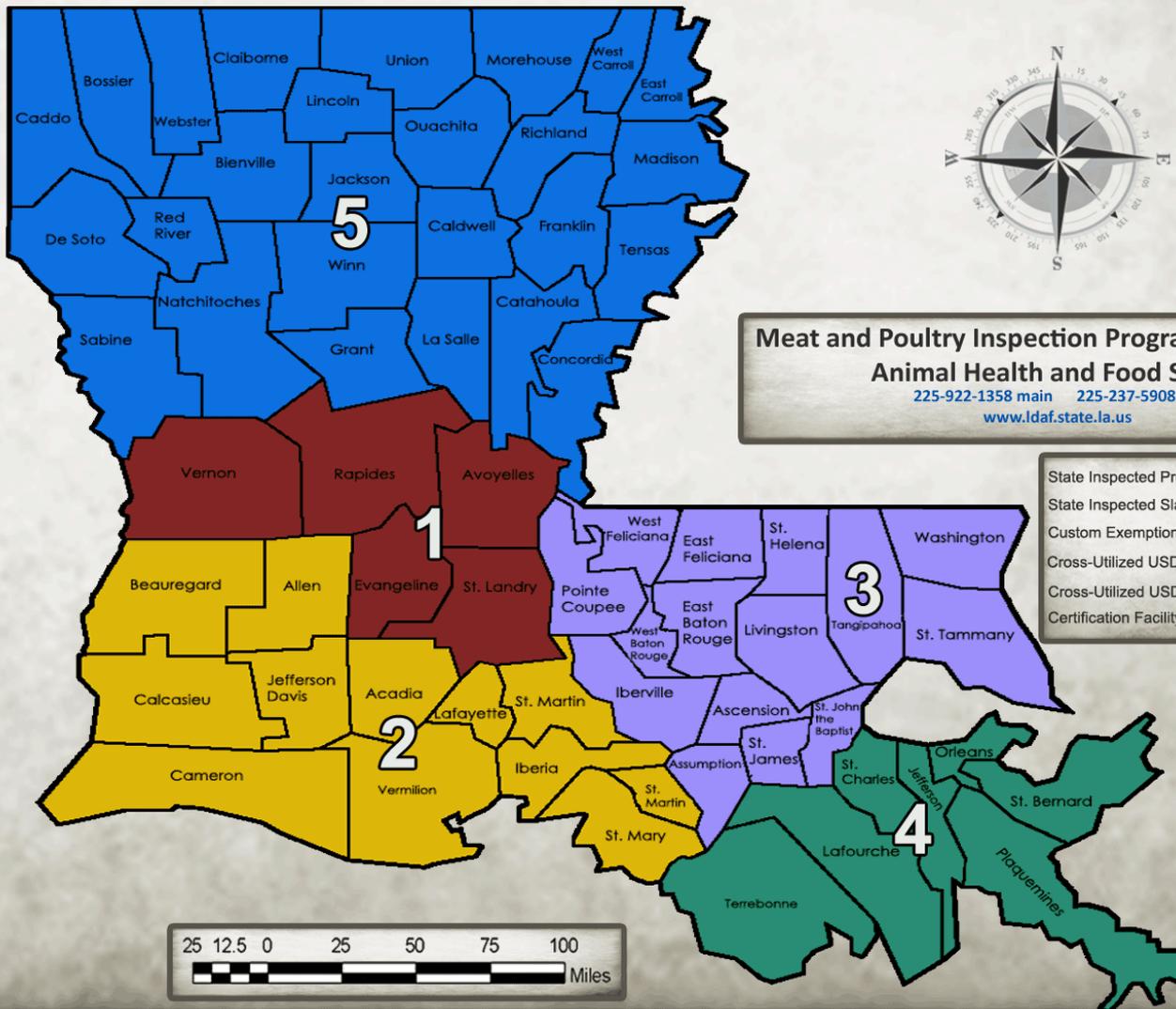
Headquarters
5825 Florida Boulevard
Ste. 4003
Baton Rouge, LA 70806
225-922-1358

Area 1 and 2
1638 Crestwell Lane
Opelousas, LA 70570
337-788-7529

Area 3
47076 N. Morrison Blvd.
Hammond, LA 70401
985-543-4026

Area 4
1100 Robert E. Lee Blvd.
Room 1034
New Orleans, LA
504-286-1125

Area 5
740 Covington Road
Haughton, LA 71037
318-949-3225



Meat and Poultry Inspection Program Area Offices
Animal Health and Food Safety
225-922-1358 main 225-237-5908 fax
www.ldaf.state.la.us



Basic Issues

- Safety of Livestock or Source Material
- Potable Water Source
- Refrigeration
- Sanitary Equipment
- Hygienic Personnel
- Environmental Contamination
- Food Grade Packaging



Programs

- Sanitation SOP
 - Facility
 - Equipment
 - Employees
 - Supplier
- HACCP
 - Step by step analysis
 - Identify key points
 - Set limits
 - Record findings
- Consumer protection
 - Ingredients
 - Weights
 - Claims



Sanitation

- Receiving it cleanly
- Store it cleanly
- Start off cleanly
- Make it cleanly
- Pack it cleanly
- Ship it cleanly
- Serve it cleanly



SSOP's

- Sanitation Standard Operating Procedures
 - Designed to prevent direct contamination of food contact surfaces
 - Can be amended to include non-food contact surfaces, facility maintenance, employee hygiene, etc.
 - Checked and recorded daily
- Pre-Op
 - Immaculate Inception
 - No animal/product enters processing area until this is completed
- Operational
 - Ongoing procedures to maintain cleanliness



Sanitizing

- Remove previous day's food residue each morning
- Soap helps breakup oily fatty biofilms
- Bleach
 - 200 ppm (parts per million) maximum
 - 1 tablespoon per gallon max
 - Rinse well after use, rough on metal surfaces
 - Kills gram negative bacteria, viruses
- Quat
 - Quaternary Ammonium
 - Opposite gram stain – kills gram positive bacteria, viruses
 - Perfect for Listeria or breaking resistance 1/month
- Hot water
 - At least 180°F (82°C) out of the nozzle for equipment
- Always follow manufacturers' instructions



Rinse
Soap
Scrub
Rinse
Sanitize

Handwashing

- Hot and soapy water
- 20 seconds
- Back of hands, Fingernails
- Up to the wrists
- Rinse
- Dry



HACCP

- Hazard Analysis – Critical Control Points
- Developed by NASA
- USDA adopted in 1996-2000
- Process Safety
- Highly adaptable
- Spreading to various industries



HACCP in brief



HACCP is applied by taking a number of straightforward steps:



Know your food product/s (and know what makes them safe to consume).



Look at how you produce food products from start to finish (by understanding the practical process and the production environment).



Identify potential hazards (and decide where they could occur in the preparation process).



Put in place preventative measures, i.e. controls (with defined safety limits).



Monitor the controls (check that safety limits have been achieved).



Write it all down and keep records (this is evidence of what you have done).



Review and confirm the HACCP system is working (check to see if everything is working as intended; if not, change it).

Consumer Protection

- Getting What You Expect
- Ingredients Statements
 - Allergens
 - Missing or Mislabeled
- Product Weight
 - Declared weights
 - Catch weights
- Label Claims
 - Organic
 - Certified Angus
 - Natural
 - Grass-fed
 - Origin
- Nutrition Facts



Source Selection

- History/Trusted
- Judge the visible conditions
- Agricultural/Chemical operations nearby
- Clean pens
- Cooler facilities
- Packaging methods
- Shipping conditions
- Safety guarantees
- Certifications/Inspections



Livestock

- Pen conditions
 - Water
 - no sharps or slips
 - Cleanliness
 - Adequate lighting
 - Identification Pen cards/Drive sheets
 - Covered “Suspect” pen
- Plant provides for identification and management of animals
- Observe animal conditions and actions
- Segregate animals suspected of serious disease
- Diagnosis by Veterinarian
- Passed/Suspect/Condemned
- Document if condemned



Food Risk

LOW

Sealed liquids

Fruits with thick peel

Hot Tea

Dried Salty foods

Fully cooked meats

Fully cooked beans

Fully cooked veggies



HIGH

Unsealed liquids

Leafy veggies

Cold drinks

Milk/Dairy

Locally packaged

Leftovers

Partially cooked or
uncooked meats/fish

Allergens



- Mislabeling
- Secondary ingredients
- Cross-contamination
- Product flow
- Employee practices
- Common names
 - Gluten = Wheat
 - Whey = Milk
 - Vegetable Oil = Soy
- Causes Anaphylaxis

BIG 8 recognized by
USDA as being
responsible for most
reactions

Wheat	Soybeans
Eggs	Milk
Tree Nuts (e.g., almonds, pecans, walnuts)	Peanuts
Shellfish (e.g., shrimp, crawfish, crab, lobster)	Fin Fish

Other Hazards

Physical

- Metal fragments
- Wood pieces
- Hard, sharp plastics
- Pests?



Chemical

- Condensation
 - Unexpected Allergens
 - Antibiotics
 - Growth hormones
 - Herbicides
 - Pesticides
 - Sanitizers
-



Symptoms of Foodborne Illness

- Nausea
- Vomiting
- Diarrhea
- Fever
- Abdominal cramping
- Dehydration



Seek medical attention if you experience any
of these symptoms.

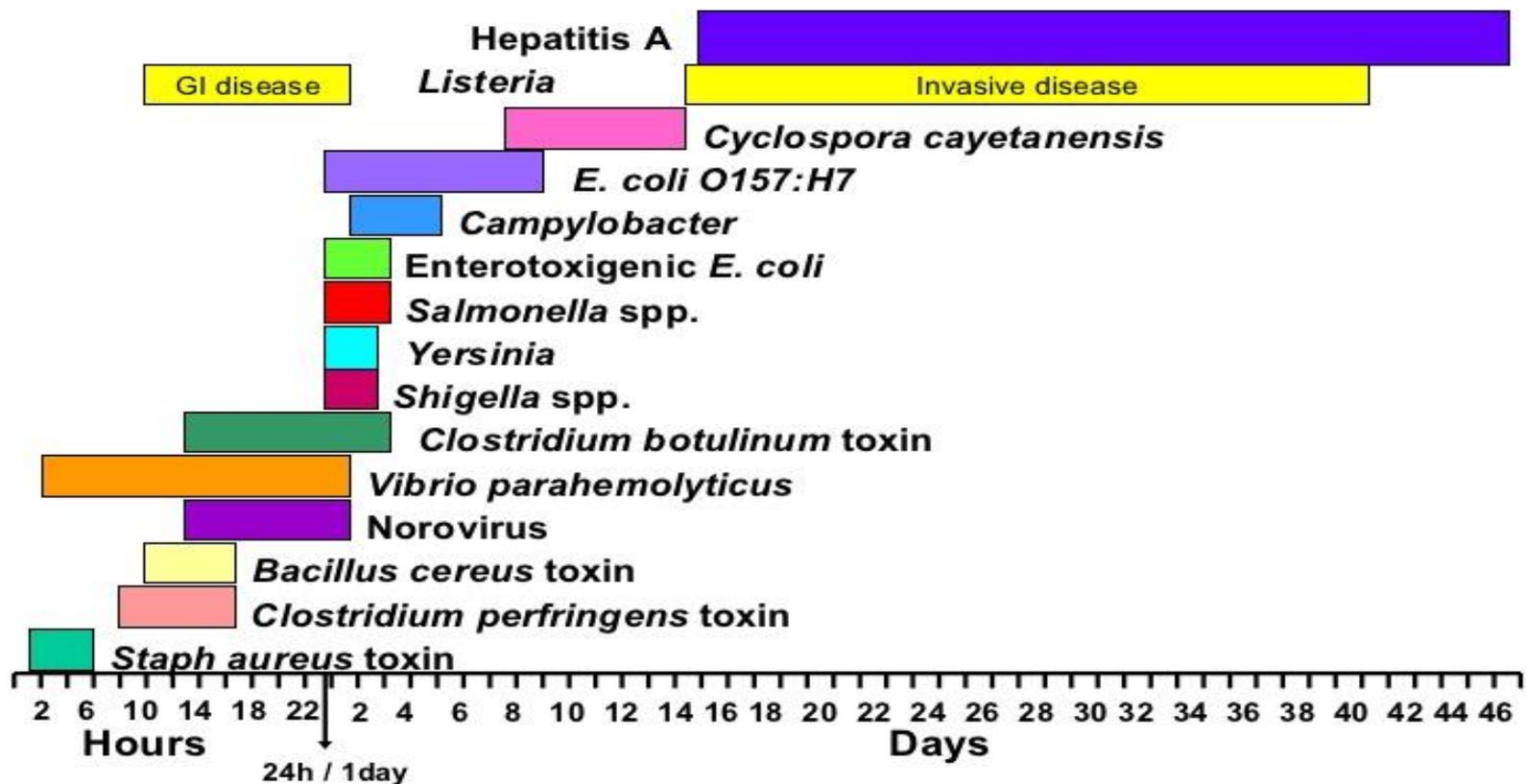
Primary Pathogens

- Salmonella
 - Indicator organism
 - Bleach sanitizer
- Campylobacter
 - Raw poultry
- E. coli
 - Beef digestive tract
- Sporeformers
 - *Clostridium botulinum* and *perfringens*
 - *Staphylococcus aureus*
 - Improper stabilization after cooking
- Listeria
 - From the environment after cooking, loves cold and wet
 - Needs ammonium sanitizer (Quat)



What made you sick?

Usual Incubation Periods for Selected Foodborne Pathogens





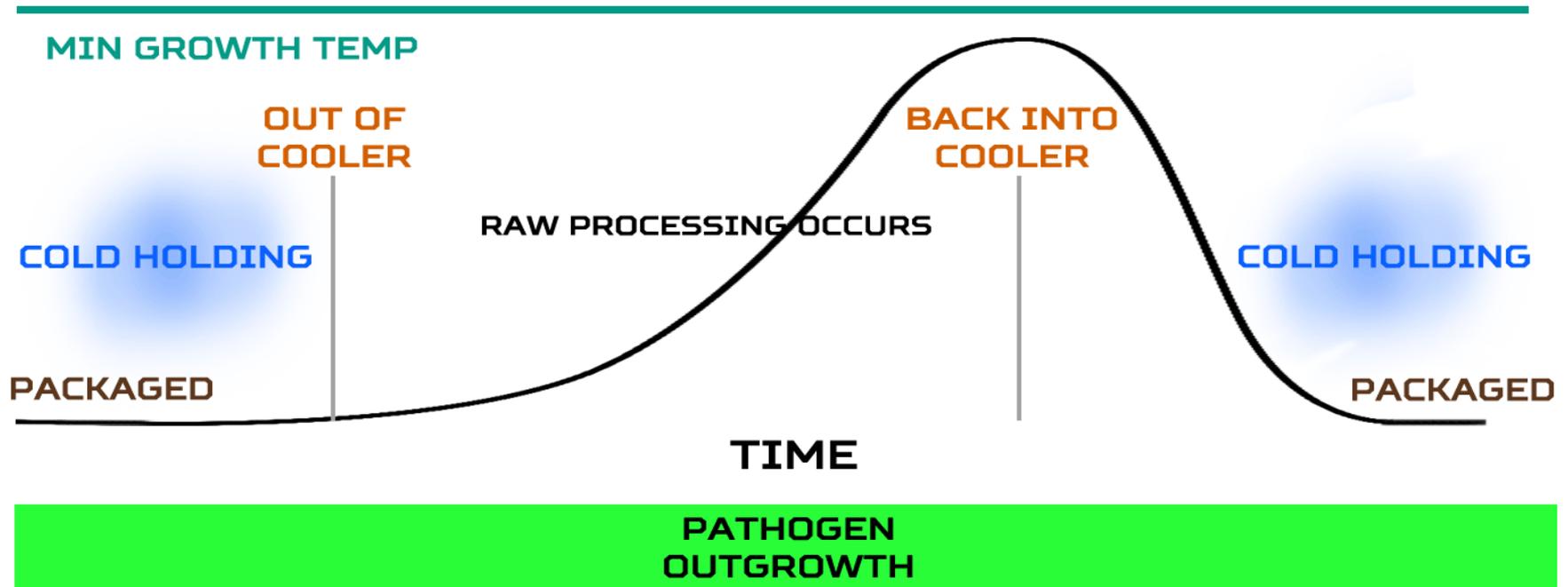
Pathogen Growth Inhibitors

- Cooking (consider the initial load of bacteria)
Meat 160°F (71°C)
Poultry 165°F (74°C)
- Hot Holding more than 140°F (60°C)
- Cold Holding less than 40°F (4°C)
- Freezing 28°F (-2°C)
- Drying Water Activity $A_w < 0.85$
- Salt Content Water Activity $A_w < 0.85$
- Acidity less than 4.6 pH

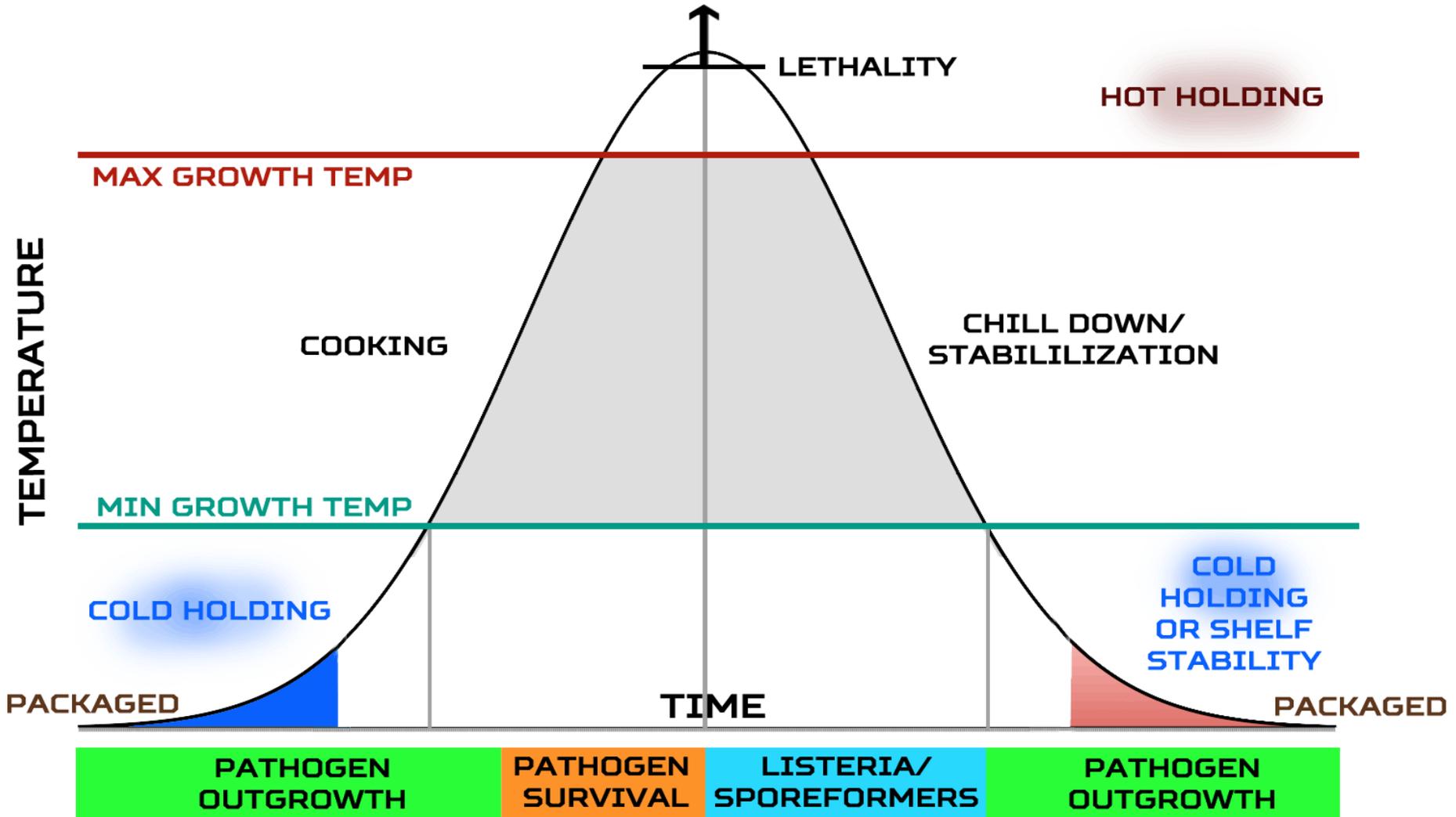
RAW PRODUCT TEMPERATURE CURVE

IN A WARMER PROCESSING ENVIRONMENT

TEMPERATURE



FULLY COOKED PRODUCT TEMPERATURE CURVE



Humane Handling

- Standard Inspection
 - Supplying food/water in pens
 - Holding pen animal safety
 - Minimize stress during movement
 - Insensible to pain
 - Bolt, gun, gas, electricity stunning
 - Limit suffering before and during
- Religious exemption
 - Inspectors do not regulate the kill step
 - Traditional religious rites



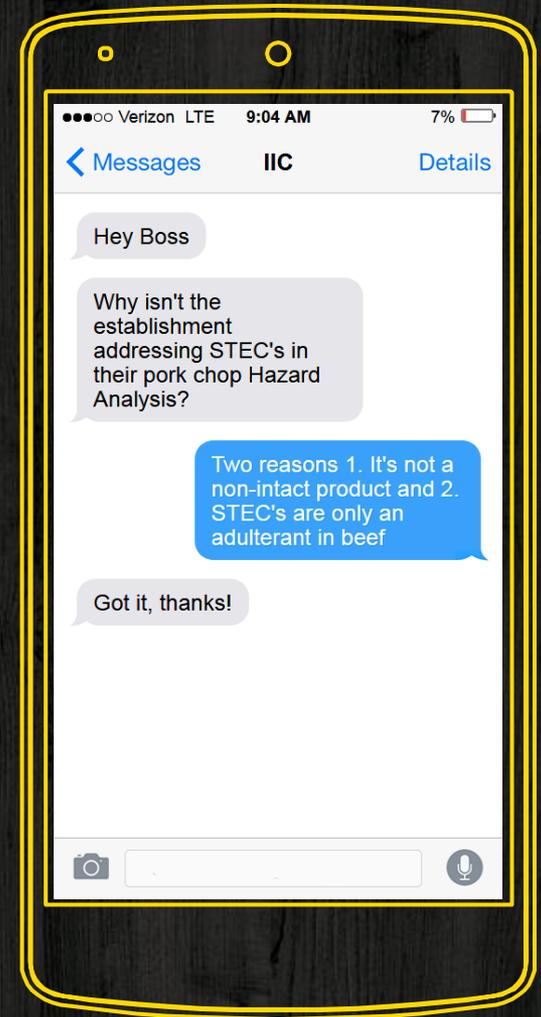
Inspection Findings

- Document findings for later use
- Think critically
- Short study can save time
- Take action when necessary
- Prevent recurrences when possible
- Remember the goal



Communication

- Discuss food safety strategies
- Research hazards
- Discover more effective methods
- Ask a more experienced team member
- Share with other team members
- Share photos/video if helpful





Recap

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Questions?

