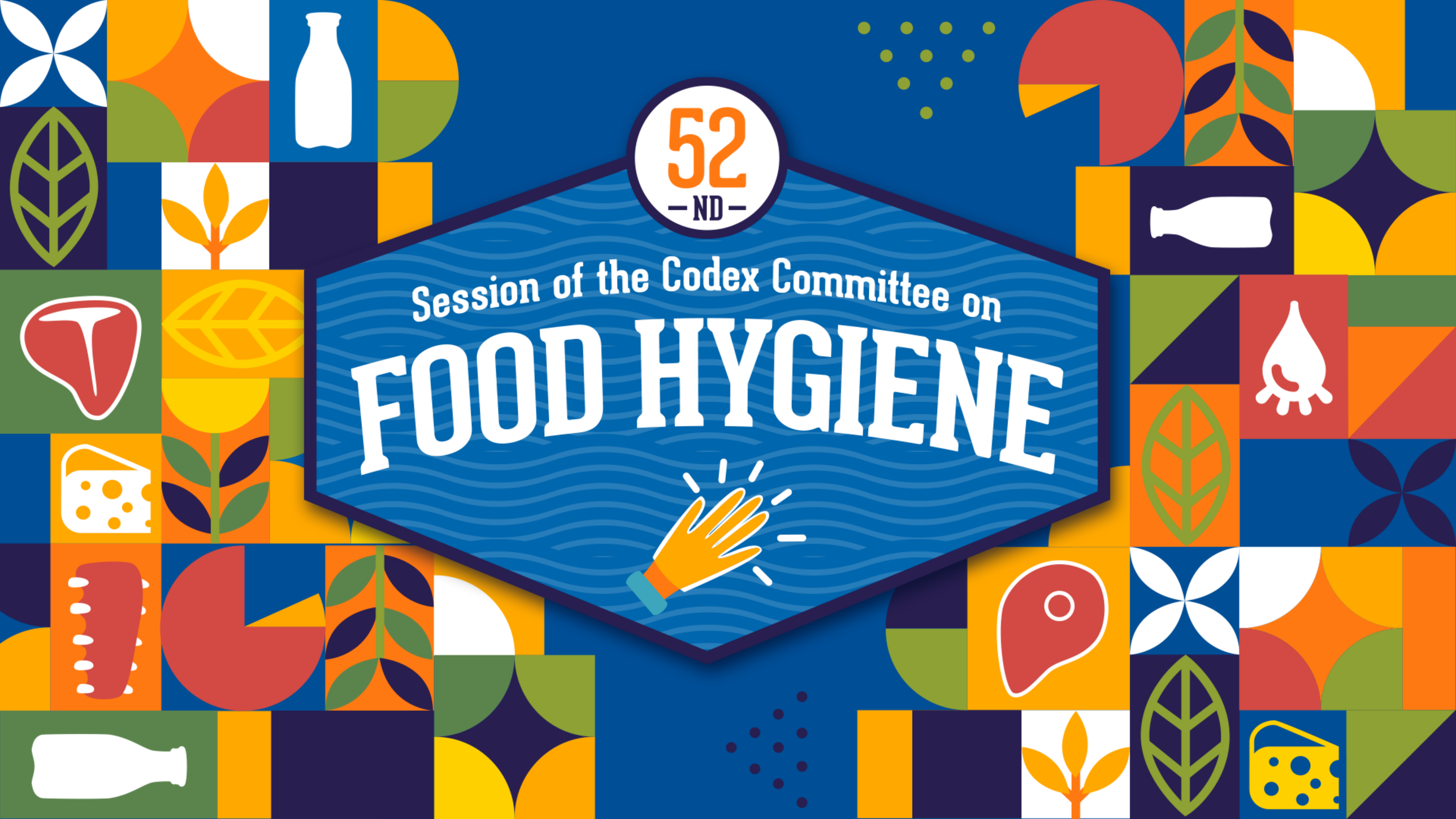
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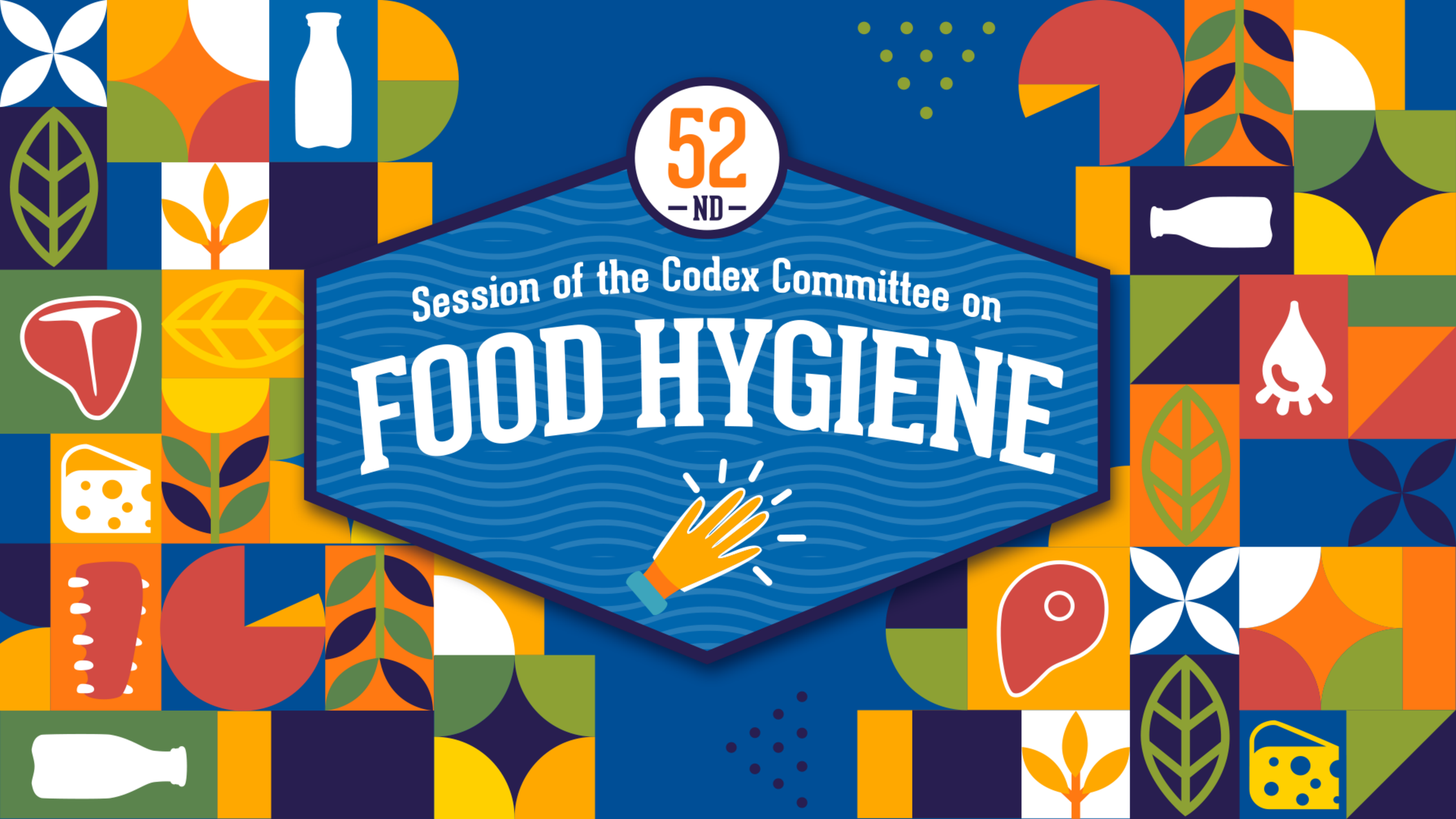
FOOD HYGIENE

CCFH52: Sunday 27th February

Working group on STEC: Presentations on the Annexes to the draft Guidelines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PROPOSED DRAFT GUIDELINES FOR THE CONTROL OF SHIGA TOXIN-PRODUCING *ESCHERICHIA COLI* (STEC) IN RAW BEEF, FRESH LEAFY VEGETABLES, RAW MILK AND RAW-MILK CHEESES, AND SPROUTS: Raw Beef Annex

Raw Beef Annex

- Comments and changes were mostly editorial aiming for:
  - clarification of the text
  - avoiding repetition within the same section among recommendations
  - improving English language ☺
- Words and phrases like “may”, “where feasible”, “when possible” were included to provide flexibility to the recommendations.
- Recommendations with no scientific basis were not considered, and others are pending the JEMRA report.

Issues for Discussion

Specific control measures vs GHP Processing practices

- **Comment**: Delete recommendations with limited evidence of having specific impact on STEC.
- Parag 45 – 47 (rodding), para. 57

<u>Considerations:</u>

- Difficult to get good enough research data specific to STEC to be able to make definitive statements about certain measures applied to control microbial pathogens.
- Practices are known to help prevent fecal contamination, therefore may have a positive impact.

Co-Chairs' Recommendations:

- To leave recommendations and change "specific control measures" from the sub section title to *"Specific Control measures and GHP´s for rodding"*.
- Add the following sentence: "Whether some of the measures recommended in this annex are specific control measures for STEC, others are good hygiene practices aiming to remove fecal contamination from carcasses and likely to have an impact on STEC"

Paragraph 17- Use of Direct-Fed Microbials

17. Use of probiotics or direct-fed microbials, involves feeding animals with viable microorganisms which are antagonistic toward pathogens, either by modifying environmental factors in the gut or producing antimicrobial compounds. There is evidence that specific direct-fed microbial treatments, such as Lactobacillus acidophilus (NP51) and Propionibacterium freudenreichii (NP24), can reduce STEC O157:H7 shedding by cattle (Wisener et al., 2015, Venegas-Vargas et al 2016). **The addition of viable microorganisms to feed should be assessed with respect to whether these microorganisms pose a risk for the transmission of antimicrobial resistance genes to pathogens in the gut.**

- Considerations: Some countries suggest to delete based on:
  - No evidence of antimicrobial resistance reported for use of common probiotics as food and feed. They usually inhibit adherence of pathogens to the GI epithelium and also activate the immune system.
  - It is unlikely that these types of probiotics would produce antimicrobials that would be used for the treatment of disease in animals or humans i.e. not an antibiotic.

Co-Chairs' recommendation: to delete what is in bold

4.1 GENERIC FLOW DIAGRAM FOR APPLICATION OF CONTROL MEASURES

Comment: Indicate/ Highlight the sections where contamination occurs (mild, moderate and heavy) and also sections to show where the sampling has to be made by color coding or any other means as appropriate.

Considerations:

- As established in paragraph 11, the flow chart is generic and processes may vary from country to country as may also the amount of contamination at each step and where each country determines to take samples.
- The purpose of the generic flowchart is illustrative to improve the understanding of the document.

Co-Chairs' recommendation: To maintain flowchart with no highlighted sections where contamination occurs.

4.1 GENERIC FLOW DIAGRAM FOR APPLICATION OF CONTROL MEASURES

Comment: to replace the flow diagram with the one included in *Guidelines for the Control of Nontyphoidal Salmonella spp. in Beef and Pork Meat* (CAC/GL 87-2016), annex I, 6.1. or just a cross-reference made.

Considerations:

- As established in paragraph 11, the flow chart is generic and for illustrative purposes only.
- The structure of this document differs from the *Guidelines for the Control of Nontyphoidal Salmonella spp. in Beef and Pork Meat* (CAC/GL 87-2016)
- Reference to other Codex guidelines may make the understanding and usability of this annex more difficult.
- **Co-Chairs recommendations**: To maintain the Annex 1 flowchart

Scope and definition

- **Comment:** This guidance applies to control of STEC in raw beef, including ~~cuts such as steaks~~ **non-intact products** such as raw ground/minced or tenderized beef.

Considerations:

- Raw beef definition: Skeletal muscle meat from slaughtered cattle, including primal cuts[1] , sub-primal cuts, and trimmings.

*[1] *A primal cut is a piece of meat on the bone initially separated from the carcass of an animal during butchering. Primal cuts are then divided into sub-primal cuts. These are basic sections from which steaks and other subdivisions are made.*

- Steaks may be a risk where they have been tenderised by needle or equivalent processes. The main risk beef products are those parts that are intended for grinding or tenderising.

Co-Chairs recommendations: To accept the change

Thank you!

Other issues?

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Fresh Leafy Vegetables Annex

- Changes were made to the Annex based on comments received; generally, changes were for clarification.
- A footnote was added to explain “soil amendments.”
- The definition of “Fresh leafy vegetables” was modified: Vegetables of a leafy nature <u>where the leaf is intended for consumption without cooking</u>…
- A sentence was added in the section on transit from the field about effective cleaning between loads.
- A bullet to thoroughly wash fresh leafy vegetables prior to use was added to measures for Retail and Foodservice.
- A footnote was added to the flow diagram to reemphasize that it is for illustrative purposes only and that steps may not occur in all operations and may not occur in the order presented in the flow diagram.

Issues for Discussion

Water for primary production

- **Comment**: Add “hygiene” before “indicator microorganism” in paragraph 15 on water testing
- **Co-Chairs’ Recommendation**: No change.
  - It is not necessary to specify whether an indicator microorganism is to determine hygienic status, process efficacy, or other purpose.
  - This would require consequential changes to qualify the term wherever it is used in the General Section and other annexes.

Water for primary production and for packing

- **Comment**: Considering the development of specific “Guidelines for the safe use and re-use of water in food production,” including an Annex on fresh produce, those guidelines/recommendations should not be duplicated here; paragraphs 14-16 [Water for Primary Production] and paragraph 26 [washing fresh leafy vegetables] should be replaced by a cross-reference to the guidelines on the use of water.
- **Co-Chairs’ Recommendation**: No change at this time.
  - Controls for water at primary production and preventing cross-contamination during washing are key STEC control measures.
  - Water guidelines are still in development and the fresh produce annex is not specific for STEC, so it is not clear whether there is any duplication.
  - A cross-reference can be added later if appropriate.

Temperature of 7°C or below

- **Comments:** Recommended deleting the specification of a temperature of 7°C or below, indicating it is not appropriate for fresh leafy vegetable from tropical areas since the specified temperature may lead to chilling injury for vegetables such as basil, coriander
- **Co-Chairs' Recommendation**:
  - Delete the specific temperature of 7°C where it appears and refer to "an appropriate temperature."
  - Add the following sentence at the end of paragraph 29 on Time and temperature control: "A temperature of 7°C or below will prevent growth of STEC and is appropriate for those fresh leafy vegetables that are not subject to cold injury."

Retail and Foodservice

- **Comments**: Keep the section; Include the detail related to retail and foodservice in Section 5: Control of Operation with a sub-section providing control measures specifically for retail and foodservice to follow General Principles of Food Hygiene (CXC 1-1969) [Note – in the updated GPFH – section 7 is Control of Operations]
- **Co-Chairs' Recommendation**: No change
  - Currently the "Retail and Foodservice" section is logically positioned after establishment-related activities and just prior to the "Consumer."

Flow Diagram Modifications

- **Comments**:
  - “Soil preparation” should be added before “Planting,” since this step is relevant to control of pathogenic microorganisms, and it is referred to in JEMRA report MRA37.
  - Instead of the boxes for “Irrigation,” “Fertilizing” and “Other chemical Applications” make these bullets in a box called “Growing” (since these activities don’t flow one direction).
  - Change the box from “Planting” to “Planting/sowing.”
  - Replace ‘cold storing’ with pack house or manufacturing (since cold storage is a subset of the activities that occur here)
- **Co-Chairs’ Recommendation**: Accept these but modify the ”cold storing” box box to say “Cold storing at warehouse, manufacturing or packing house.”

Flow Diagram Modifications

- **Comment**: Indicate/ Highlight the sections where contamination occurs (mild, moderate and heavy) and also sections to show where the sampling has to be made by color coding or any other means as appropriate.
- **Co-Chairs' Recommendation**: Do not include
  - Points of contamination can vary, as can the amount of contamination.
  - Sampling points can vary.

Thank you!

Other Issues?

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PROPOSED DRAFT GUIDELINES FOR THE CONTROL OF SHIGA TOXIN-PRODUCING *ESCHERICHIA COLI* (STEC) IN RAW BEEF, FRESH LEAFY VEGETABLES, RAW MILK AND RAW-MILK CHEESES, AND SPROUTS: Raw Milk and Raw Milk Cheeses Annex

Raw milk and Raw milk Cheeses Annex

- Revisions were made to the Annex based on comments received; mostly for clarification of the text.
- Revision of the definition for “Raw milk” was also made based on comments.

Raw milk –Milk (as defined in Codex General Standard for the Use of Dairy Terms (CXS 206-1999)) that is intended for direct consumption or a primary input for dairy products and which has not been heated beyond 40ºC or undergone any treatment that has an equivalent effect. This definition excludes processing techniques used for microbiological control (e.g. heat treatment above 40 °C microfiltration and bactofugation)

These modifications were also made in the general part.

Raw milk and Raw milk Cheeses Annex

- The paragraph 22 on acid treatment on the milking machine following or during disinfecting of the equipment was deleted because it was confusing

- Figure 2 has been modified because there was a mistake in one item of the diagram: “set raw milk” instead of “receive raw milk” in the box before “cutting/stirring.”

- Moved the definitions of validation, monitoring and verifications to the general part as they are used in all annexes.

Issues for Discussion

Control measures for STEC at the dairy farm

- **Comment**: clarify why control measures included in Annex I, 4.2 primary production, are not mentioned here (Diet ingredients, microbials, feed additives, vaccination, good management practices at primary production).
- **Co-Chairs' Recommendation** : Change was made
  - We want to insist on the fact that milking hygiene is the main measure to be applied in order to limit the contamination of milk.
  - A new paragraph 16bis was added:

Other control measures at primary production, such as diet ingredients, vaccination and additional good management practices (as described in the Raw Beef Annex) may be helpful in minimizing STEC shedding, and thus, contamination of raw milk, but more research on efficacy is needed.

Control during processing

- **Comment**: to modify paragraph 33:, testing ~~the~~ raw milk for the presence of STEC ~~can~~ is unlikely to be ~~established, as well as an audit program of milk suppliers~~ effective but needs to ~~assess their hygienic practices~~ be utilized in combination with other control measures starting at the farm and continuing through to the consumer.

- **Co-Chairs' Recommendation** : Specific change was not made **in that section**.
  - But we inserted a new paragraph 36 bis in section 9 "**Verification**":

Testing raw milk for the presence of STEC can be established, but since it is unlikely to be effective on its own because of low prevalence of STEC, it should be used in combination with other control measures including an audit program of milk suppliers to assess hygienic practices on the fam.

E. coli numeration and STEC testing

- **Comment**: in paragraph 36 to indicate: Periodic testing for ~~“high risk~~” STEC virulence genes may also be conducted for verification of hygienic practices (FAO/WHO, 2018).
- **Co-Chairs’ Recommendation** : Change was not made
  - The term "high risk STEC" has been already discussed, accepted and used in other annexes.
  - Confusing because we have never talked about gene detection in detail.
  - The point about virulence genes is captured by the footnote: “High risk STEC are generally isolates that present pathogenic virulence factors that are responsible for significant numbers of illness and/or that cause the most severe illnesses”.
  - We must keep in mind that such approaches may vary by country

Verification of control measures

- **Comment**: request to add in paragraph 42 Collection of filters from the milking machine at the time of milking, could constituted a sample library at the cheese factory for use in any possible investigation according to the results of the analyses of the cheeses, customer complaints, or during enhanced surveillance

- **Co-Chairs' Recommendation**: Change was not made as suggested as it was considered to be unpractical for farmers.
  - We added at the end of the paragraph:

  Milk filter samples can also be useful in investigating the source of contaminated cheese.

Thank you!

Other Issues?