

Update of the activities of CEN TC 463 WG 2 on Shiga toxin producing *Escherichia coli* (STEC)

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CEN/TC 275/WG 6 “Microbiology of the food chain” and all its TAGs have been disbanded in late 2019.

WG6 has been transformed to a new structure CEN/TC 463 “Microbiology of the food chain”. This new TC met on 25th of November 2019 , created new WGs and among them WG2 "Shiga toxin producing Escherichia coli (STEC)" to conduct the revision of CEN ISO/TS 13136:2012, convenor: Rosangela Tozzoli.

National standardization bodies nominated experts for the CEN/TC 463/ WG2 and the work on STEC is now being conducted under this structure.



Part 1



+ enrichment broth



Incubation



Real Time PCR for virulence genes



Positive to *stx* genes:

Streak enrichment culture onto solid media to isolate the STEC (up to 50 colonies tested)

Based on isolation results:
presence/absence of STEC in XX g

Part 2



STEC serogroup determination (top 5 + O45 and O121), virulotyping (including *stx* genes subtyping)

Draft EN ISO/PWI 13136-1

In April 2019 a draft of EN ISO/PWI 13136-1 was prepared by the EURL for *E. coli*, with the support of TAG 18 experts, sent to WG6 by the end of April 2019

During the preparation of the draft to be proposed to CEN TC275 WG6, the opportunity to include the detection of *eae* gene in Part 1 arose to be still pending:

The *eae* gene detection should not be included in Part 1, whereas indicated in the characterization scheme of the STEC isolates of Part 2?



Recommendation N 511 (July 2019): WG6 invited TAG 18 to discuss and prepare a document by end of 2019 explaining the advantages and disadvantages of retaining *eae* gene detection in EN ISO 13136-1 or moving to EN ISO 13136-2, including information about the impact of the *eae* gene detection in national and regional regulatory requirements. WG6 would then vote by correspondence on: a. Retaining *eae* detection in EN ISO 13136-1; b. Making *eae* detection optional in EN ISO 13136-1; c. Moving *eae* detection to EN ISO 13136-2.

Meeting of TAG 18 in November 2019

Thorough discussion among experts on the opportunity to keep *eae* gene detection in Part1, in Part 1 as Optionale, or move it in Part 2, several pros and drawbacks for each possibility were listed

...Part 1 is meant to detect and isolate all STEC, including the detection of the *eae* gene in Part 2 would better fit the field of application of the standard's section: STEC characterization...

...The significance of the presence of *eae* gene in the screening is not entirely clear and out of the scope of the ISO 13136 (Shiga toxin producing *Escherichia coli*), and the interpretation of the results could be less clear for risk managers when the detection of *eae* is maintained in Part 1...

... Some National regulations, like the one in place in France, foresee implementation of actions on the basis of the presence of *eae* gene ...

Preparation of a supporting document for the Consultation on the detection of *eae* gene in projects EN ISO 13136-1 &-2 on STEC (CEN TC463 WG2 experts) April 2020

Results:

CEN level

maintain in Part 1: 0
optional in Part 1: 3
move to Part 2: 3
abstain: 15

ISO level

maintain in Part 1: 1
optional in Part 1: 3
move to Part 2: 9
abstain: 22

Action 15/2020: Draft EN ISO/NP 13136-1 Microbiology of the food chain – Real-time polymerase chain reaction (PCR)-based method for the detection of food-borne pathogens – Part 1 Horizontal method for the detection and isolation of Shiga toxinproducing Escherichia coli (STEC)
CEN/TC 463 invites WG2 to prepare a draft EN ISO/NP 13136-1 by beginning of April 2021 moving the detection of eae gene into part 2.

Action 16/2020: Draft EN ISO/NP 13136 -2 Microbiology of the food chain – Real-time polymerase chain reaction (PCR)-based method for the detection of food-borne pathogens – Part 2: Horizontal method for the characterization of Shiga toxin-producing Escherichia coli (STEC)
CEN/TC 463 invites WG2 to prepare an outline for project EN ISO 13136-2 by December 2020.
CEN/TC 463 invites WG2 to discuss the possibility to include the characterization of single cells in enrichment broth.

Action 17/2020: Draft EN ISO/NP 16654:2001/AMD2 Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Escherichia coli O157 — Amendment 2: Inclusion of performance testing of the mTSB as enrichment broth
CEN/TC 463 invites WG2 to prepare a Draft EN ISO/NP 16654:2001/AMD2 by December 2020 to include the complete performance testing table for all the culture media used if data are available.

Amend the ISO 13136 Part 1 according to the Decision taken at CEN TC 463 meeting – Removing the detection of eae gene from Part 1

Prepare the outline of ISO 13136 Part 2 – An online meeting of WG2 members is being organized soon

Experts shared the data on the performance testing of the media used for the ISO 16654 – finalize the Second Amendment in the due time

Thank you for your attention!