BUREAU OF INDIAN STANDARDS
AGENDA

TITLE OF THE SECTIONAL COMMITTEE	NUMBER OF THE MEETING
FOOD MICROBIOLOGY SECTIONAL COMMITTEE, FAD 31	**FOURTH**

DATE AND DAY: 15 July 2024, Monday	**TIME: 1030 hrs**
VENUE:	Blue Room (Vimarsha) BIS, Manak Bhawan, 9, BSZ Marg New Delhi - 110002
CHAIRPERSON:	Dr. Kiran N. Bhilegaonkar Principal Scientist & Head Public Health Division ICAR-Indian Veterinary Research Institute Barielly (UP) - 243001
MEMBER SECRETARY:	Smt. Varsha Gupta Scientist-E/ Director Food & Agriculture Department Bureau of Indian Standards New Delhi - 110002

ITEM 0 WELCOME AND OPENING REMARKS

0.1 Welcome and Opening Remarks

0.2 Constitution of Resolution Drafting Committee

ITEM 1 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING

The minutes of the third meeting of 'Food Microbiology Sectional Committee', FAD 31 held on 28 Nov 2023, in hybrid mode, were circulated vide email as well as BIS portal on 01 Jan 2024. No comments have been received on the minutes.

The Committee may kindly CONFIRM the minutes as circulated

ITEM 2 SCOPE AND COMPOSITION OF FAD 31

2.1 SCOPE & PROGRAMME OF WORK OF THE COMMITTEE

2.1.1 The Committee at its 3rd meeting recommended FADC to withdraw following Indian Standard due to the reasons/justification mentioned therein:

IS No. & Title	Justification of withdrawal of Indian Standard
i) 5887 (Pt-1):1976 Methods for detection of bacteria responsible for food poisoning: Part 1 isolation, identification and enumeration of *E.*	Limitations of the method and availability of suitable alternate standard reference methods for *E. coli*, i.e., IS 16067 (Pt-1):2020/ISO 16649-1:2018, IS 16067 (Pt-

coli	2):2023/ISO 16649-2:2001, IS 16067 (Pt-3):2023/ISO 16649-3:2015 and IS 16424:2016/ ISO 7251:2005
ii) IS 16425:2016/ ISO 7937:2004 Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of *Clostridium perfringens* - Colony Count technique	Withdrawal of ISO 7937:2004 by ISO/TC 34/SC 9

The FADC considered the recommendation of the Committee and approved the withdrawal of these Indian Standards at its 29th meeting held on 27 May 2024.

The Committee may kindly NOTE

2.1.2 The scope and programme of work of the Food Microbiology Sectional Committee, FAD 31 are given below as **Annex 1**:

Annex 1_POW FAD 31.pdf

The Committee may kindly CONSIDER and DELIBERATE

2.2 COMPOSITION OF THE SECTIONAL COMMITTEE

2.2.1 The Committee recommended co-option of Hindustan Unilever Ltd. at its last meeting which was approved by FADC at its 29th meeting held on 27 May 2024.

2.2.2 The Committee also recommended withdrawal of following organizations, in view of the reasons/justification indicated in therein, which was approved by FADC at its 29th meeting held on 27 May 2024:

S. No.	Member Organization	Justification of withdrawal
1.	Central University of Hyderabad	Due to no response from them on repeated communications regarding their co-option in the Committee
2.	All India Food Processors' Association (AIFPA), New Delhi	Absence of these organizations in last two or more consecutive meetings along with non-participation in the Committee work and decided recommending FADC to withdraw their nomination
3.	Confederation of Indian Industry, New Delhi	

The Committee may kindly NOTE

2.2.3 FAD 31 secretariat is in receipt of a co-option request from Dr. Chandrashekhar G. Raut, Director-Interdisciplinary Research, & Lab Director, Dr. D.Y. Patil Medical College, Hospital & Research Centre, Sant Tukaram Nagar, Pimpri, Pune through email. His biodata and list of publications (enclosed separately alongwith the agenda) are placed below for reference of the Committee:

Dr. CG Raut Biodata Feb 2024 27032024

The Committee may kindly DELIBERATE and DECIDE

2.2.4 The updated composition of FAD 31 indicating the attendance of last three meetings of the member organizations is given under as **Annex 2**:

Annex 2_Composition_FAD

The Committee may kindly DELIBERATE and DECIDE

2.2.5 Composition of various panels functional under FAD 31 is given at **Annex 3** as under:

Annex 3_Panel Composition_FAD 3

The Committee may kindly DELIBERATE and DECIDE

ITEM 3 PUBLISHED DRAFT INDIAN STANDARD (FINALIZED SINCE LAST MEETING OF FAD 31)

The following Indian Standards finalized by FAD 31 during 3rd meeting of the Committee held on 28 Nov 2023 have now been published:

Sl. No.	Document No.	Title
1.	FAD 31 (23398) **IS 18564 (Part 1) : 2024/ ISO 10272-1 : 2017**	Microbiology of the food chain Horizontal method for detection and enumeration of *Campylobacter* spp Part 1 Detection method *(Adoption of ISO 10272-1 : 2017)*
2.	FAD 31 (23399) **IS 18564 (Part 2) : 2024/ ISO 10272-2 : 2017**	Microbiology of the food chain Horizontal method for detection and enumeration of *Campylobacter* spp Part 2 Colony-count technique *(Adoption of ISO 10272-2 : 2017)*
3.	FAD 31 (23400) **IS 18566 : 2024/ ISO 13722 : 2017**	Microbiology of the food chain Enumeration of *Brochothrix* spp Colony-count technique (Adoption of *ISO 13722 : 2017*)
4.	FAD 31 (23401) **IS 18567 : 2024/ ISO 17410 : 2019**	Microbiology of the food chain Horizontal method for the enumeration of psychrotrophic microorganisms *(Adoption of ISO 17410 : 2019)*
5.	FAD 31 (23402) **IS 18568 : 2024/ ISO 17468 : 2016**	Microbiology of the food chain Technical requirements and guidance on establishment or revision of a standardized reference method *(Adoption of ISO 17468 : 2016)*
6.	FAD 31 (23403) **IS 18569 : 2024/ ISO 18743 : 2015**	Microbiology of the food chain Detection of *Trichinella* larvae in meat by artificial digestion method *(Adoption of ISO 18743 : 2015)*
7.	FAD 31 (23393) **IS 5402 : Part 1: 2021/ ISO 4833 - 1:2013, Amendment – 1**	Microbiology of the food chain - Horizontal method for the enumeration of microorganisms- Part 1 Colony count at 30 ˚C by the pour plate technique

Sl. No.	Document No.	Title
		(*Adoption of Amendment No. 1 issued in Jan 2022 to ISO 4833-1 : 2013*)
8.	FAD 31 (23394) **IS 5402 : Part 2: 2021/ ISO 4833 - 2:2013, Amendment – 1**	Microbiology of the food chain- Horizontal method for the enumeration of microorganisms - Part 2 Colony count at 30 ˚C by the surface plating technique *(Adoption of Technical Corrigendum 1 issued in Feb 2015 and Amendment No. 1 issued in Jan 2022 to ISO 4833-2 : 2013)*
9.	FAD 31 (23395) **IS 5887 : Part 6: 2012/ ISO 7932 : 2004, Amendment – 1**	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of presumptive *Bacillus cereus* Part 6 Colony - count technique at 30 ˚C (*First Revision*) (*Adoption of Amendment No. 1 issued in March 2020 to ISO 7932 : 2004*)
10.	FAD 31 (23396) **IS 17383 : 2020/** ***ISO 11133 : 2014*****, Amendment – 2**	Microbiology of food animal feed and water - preparation production storage and performance testing of culture media (*Adoption of Amendment No. 2 issued in May 2020 to ISO 11133 : 2014*)
11.	FAD 31 (23397) **to IS 5887 (Part 5/Sec 1) : 2023/ ISO 21872-1 : 2017, Amendment No. 1**	Methods for detection of bacteria responsible for food poisoning Part 5 Horizontal method for the determination of *Vibrio* spp Section 1 Detection of potentially enteropathogenic *Vibrio parahaemolyticus*, *Vibrio cholerae* and *Vibrio vulnificus* (*Second Revision*) (*Adoption of Amendment No. 1 issued in Feb 2023 to ISO 21872-1 : 2017*)

The Committee may kindly NOTE

ITEM 4 FINALIZED DRAFT INDIAN STANDARDS UNDER PUBLICATION

As recommended by FAD 31/ Panel 4 (constituted to review the ISO related work) and approved by FAD 31 at its 3rd meeting, following draft Indian Standard was prepared and wide circulated on 27 Mach 2024 for comments of stakeholders by **26 May 2024**. Since no comments were received on the WC drafts, these were finalized and sent for publication with the approval of Chairperson, FAD 31, as per the decision of the Committee.

Sl. No.	Document No.	Title
1.	**FAD 31 (24400)** (*Revision of IS 5404:1984*)	Sampling transport storage and sample preparation of food samples for microbiological analysis
2.	**FAD 31 (24528)**	Water quality enumeration of culturable micro-organisms colony count by inoculation in a nutrient agar culture medium *(Adoption of ISO 6222 : 1999)*
3.	**FAD 31 (24529)**	Water quality requirements for the performance testing of membrane filters used for direct enumeration of microorganisms by culture methods *(Adoption of ISO 7704 : 2023)*

4.	**FAD 31 (24530)**	Water quality detection and enumeration of bacteriophages Part 1 Enumeration of F-specific RNA bacteriophages *(Adoption of ISO 10705-1 : 1995)*
5.	**FAD 31 (24531)**	Water quality detection and enumeration of bacteriophages Part 2 Enumeration of somatic coliphages *(Adoption of ISO 10705-2 : 2000)*
6.	**FAD 31 (24532)**	Water quality detection and enumeration of bacteriophages Part 4 Enumeration of bacteriophages infecting *Bacteroides fragilis* *(Adoption of ISO 10705-4 : 2001)*
7.	**FAD 31 (24533)**	Water quality detection and enumeration of bacteriophages Part 3 Validation of methods for concentration of bacteriophages from water *(Adoption of ISO 10705-3 : 2003)*
8.	**FAD 31 (24534)**	Water quality enumeration of *Legionella* *(Adoption of ISO 11731:2017*)
9.	**FAD 31 (24535)**	Water quality enumeration of *Clostridium perfringens* - Method using membrane filtration *(Adoption of ISO 14189 : 2013)*
10.	**FAD 31 (24536)**	Water quality requirements for establishing performance characteristics of quantitative microbiological methods *(Adoption of ISO 13843 : 2017)*

The Committee may kindly NOTE

ITEM 5 DRAFT INDIAN STANDARDS ISSUED FOR WIDE CIRCULATION

5.1 As recommended by FAD 31/ Panel 4 (constituted to review the ISO related work) and approved by FAD 31 at its previous meetings, following draft Indian Standards (adopting ISO Standards) have been prepared and wide circulated for 60 days for the comments of stakeholders, adopting ISO standards published by SC 9. These also include adoption of the amendments No. 1, 2023 issued to ISO 6888-1:2021, ISO 6888-2:2021, ISO 7251:2005 as amendments No. 1 to IS 5887 (Pt-8/Sec1):2023/ ISO 6888-1:2021 and IS 5887 (Pt-8/Sec2):2023/ ISO 6888-2:2021 and IS 16424:2016/ ISO 7251:2005, respectively.

Sl. No.	Doc No.	Title	WC Circulation Date	Last Date of Comments
1.	**FAD 31 (25878)**	Microbiology of the Food Chain — Horizontal Method for the Detection and Enumeration of Clostridium spp. — Part 3: Detection of Clostridium perfringens (*Adoption of ISO/TS 15213-3 : 2024*)	04.07.2024	01.09.2024
2.	**FAD 31 (25879)**	Microbiology of the Food Chain — Horizontal Method for the Detection and Enumeration of Clostridium spp. — Part 2: Enumeration of Clostridium perfringens by Colony-Count Technique	04.07.2024	01.09.2024

Sl. No.	Doc No.	Title	WC Circulation Date	Last Date of Comments
		(*Adoption of ISO 15213-2 : 2023*)		
3.	**FAD 31 (25880)**	Water Quality — Detection and Quantification of Legionella spp. and/or Legionella pneumophila by Concentration and Genic Amplification by Quantitative Polymerase Chain Reaction (qPCR) (*Adoption of ISO/TS 12869 : 2019*)	04.07.2024	01.09.2024
4.	**FAD 31 (25881)**	Water Quality — Isolation and Identification of Cryptosporidium oocysts and Giardia cysts from water (*Adoption of ISO 15553 : 2006*)	04.07.2024	01.09.2024
5.	**FAD 31 (25882)**	Water Quality — Detection and Enumeration of Pseudomonas aeruginosa — Method by Membrane Filtration (*Adoption of ISO 16266 : 2006*)	04.07.2024	01.09.2024
6.	**FAD 31 (25884)**	Water Quality — Detection and Enumeration of Pseudomonas aeruginosa — Most Probable Number Method (*Adoption of ISO 16266-2 : 2018*)	04.07.2024	01.09.2024
7.	**FAD 31 (25886)**	Microbiology of the Food Chain — Sampling Techniques for Microbiological Analysis of Food and Feed Samples (*Adoption of ISO/TS 17728 : 2015*)	04.07.2024	01.09.2024
8.	**FAD 31 (25887)**	Water Quality — Detection and Enumeration of Thermotolerant Campylobacter spp. (*Adoption of ISO 17995 : 2019*)	04.07.2024	01.09.2024
9.	**FAD 31 (25888)**	Water Quality — The Variability of Test Results and the Uncertainty of Measurement of Microbiological Enumeration Methods (*Adoption of ISO 29201 : 2012*)	04.07.2024	01.09.2024
10.	**FAD 31 (25899)** Amendment – 1 to IS 5887 (Part 8/Sec 1) : 2023/ISO 6888 - 1 : 2021	Methods for Detection of Bacteria Responsible for Food Poisoning - Part 8: Horizontal Method for the Enumeration of Coagulase-Positive Staphylococci (Staphylococcus aureus and Other Species) Sec 1: Method Using Baird-Parker Agar Medium (*first revision*) (*Adoption of Amendment No. 1 issued in Sep 2023 to ISO 6888 - 1 : 2021*)	04.07.2024	01.09.2024
11.	**FAD 31 (25901)** Amendment – 1 to IS 5887 (Part 8/Sec 2) : 2023/ISO 6888 - 2 : 2021	Methods for Detection of Bacteria Responsible for Food Poisoning Part 8: Horizontal Method for the Enumeration of Coagulase-Positive Staphylococci (Staphylococcus Aureus and Other Species) Sec 2: Method using Rabbit Plasma Fibrinogen Agar Medium (*first revision*)	04.07.2024	01.09.2024

Sl. No.	Doc No.	Title	WC Circulation Date	Last Date of Comments
		(*Adoption of Amendment No. 1 issued in Sep 2023 to ISO 6888 - 2 : 2021*)		
12.	**FAD 31 (25903)** Amendment – 1 to IS 16424 : 2016/ ISO 7251 : 2005	Microbiology of Food and Animal Feeding Stuffs — Horizontal Method for the Detection and Enumeration of Presumptive Escherichia coli — Most Probable Number Technique (*Adoption of Amendment No. 1 issued in Oct 2023 to ISO 7251 : 2005*)	04.07.2024	01.09.2024

5.2 The Committee at its last meeting accepted the recommendations of Panel 4 and decided to adopt ISO 6888-3 : 2003 suggesting BIS secretariat to prepare wide circulation draft and circulate for 60 days for comments. This is to apprise the Committee that ISO 6888-3 : 2003 has already been adopted by FAD 31 in 2016 and is available as IS 5887 (Part 8/Sec 3) : 2016/ ISO 6888-3 : 2003.

5.3 The Committee at its last meeting also noted the participation of FAD 31 in the development of draft ISO 21722 and suggested to adopt it when published. This is to apprise the Committee that the standard is at CD stage currently and will be taken up for adoption once published.

The Committee may kindly NOTE

ITEM 6 REVISIN OF INDIAN STANDARDS/ DRAFTS UNDER PREPARATION

6.1 Review and Revision of Indian Standards on Microbiological Media Ingredients
FAD 31/ Panel 3

The Committee constituted FAD 31/ Panel 3 (*Refer Annex 3*) for revision of 16 Indian Standard on Microbiological Media Ingredients including the Indian Standard on 'Methods of sampling and test for ingredients used in media for microbiological work' under FAD 31.

The panel completed review and revision of 6 Indian Standard under its scope [IS 6850:1973 (Agar), IS 7536:1975 (Soluble Starch), IS 7590:1975 (Gelatin), IS 7591:1975 (Malt Extract), IS 10972 : 1984 (E coli diagnostic sera), IS 11061 : 1984 (V cholera diagnostic sera)] and these were published in 2023 after completing the wide circulation and finalization stage.

Further, the panel discussed on IS 7004 : 1973 (Yeast Extract), 7127 : 1973 (Tryptone), IS 7203 : 1973 (Casein hydrolysate) and IS 7127 : 1973 (Tryptone) in the meeting conducted in Nov 2023 and completed discussion on WC drafts. The Committee considered the work done by Panel 3 at its last meeting and decided for wide circulation of drafts of IS 7004:1973 (Yeast Extract), IS 7127:1973 (Tryptone) and IS 7203:1973 (Casein hydrolysate), once prepared by BIS Secretariat, for 60 days for comments of stakeholder. The WC drafts are under preparation. The Committee also considered the recommendation of the panel to publish IS 6853 : 1973 (Peptone) in two parts, i.e., **Part 1 covering requirements for Peptone sourced from animals and Part 2 for Peptone sourced from plants.**

Remaining 6 Indian Standards under its scope are due for review by the panel which may be discussed at its next meeting for revision.

The Committee may kindly DELIBERATE and DECIDE

6.2 Revision of IS 14595:1998 Food Hygiene, Microbiological criteria – Principles for establishment and application
FAD 31/ Panel 2

The Committee at its 3rd meeting revised the composition of FAD 31/ Panel 2 (*Refer Annex 3*) for taking up revision of IS 14595:1998 which is based on the Codex Standard Principles for the establishment and application of microbiological criteria for foods CAC/RCP-22 (1997) and is identical to it. The codex guidelines have been revised in 2013 and renamed as 'Principles and Guidelines for the Establishment and Application of Microbiological Criteria related to Foods'. Copies of IS 14595:1998 and current Codex Guidelines on the subject were shared with the panel members for study and examination and the comments/inputs received from both of them (Dr. S. B. Barbuddhe and Smt. Sonam Bansal) are placed below as **Annex 4** and **Annex 5**:

Annex 4_Comments from Nestle on IS 14

Annex 5_Comments from Dr Barbuddhe

The Committee may kindly DELIBERATE and DECIDE

6.3 Review and Revision of IS 5887 (Part 2) : 1976 - Methods for detection of bacteria responsible for food poisoning: Part 2 Isolation, identification and enumeration of *Staphylococcus aureus* and faecal streptococci

The Committee at its previous meetings reviewed IS 5887 (Part 2) and discussed on exploring the possibility of revising the standard or replace the standard with an ISO standard, if available. The Committee noted that FAD 31 has already adopted ISO 6888-1 & 2 : 2021 and ISO 6888-3 : 2003 as IS 5887 (Part 8/Sec 1 & 2) : 2023 and IS 5887 (Part 8/Sec 3) : 2016, respectively, for enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species). The Committee also recommended to the concerned technical Committee(s) to replace IS 5887 (Part 2) with the suitable section of IS 5887 (Part 8) for detection of *Staphylococcus aureus* in the product standard(s) developed by them.

The Committee also noted that no standard is available for detection of streptococci in food products with ISO/TC 34/SC 9, as of now, however, ISO/CD 21722 is under development by SC 9 on 'Microbiology of the food chain — Horizontal method for enumeration of enterococci'. It has also been observed that ISO/TC 147/SC 4 has published following standards for detection and enumeration of intestinal enterococci in water:

i) ISO 7899-1:1988 on Water quality — Detection and enumeration of intestinal enterococci — Part 1: Miniaturized method (Most Probable Number) for surface and waste water

ii) ISO 7899-2:2000 — Water quality — Detection and enumeration of intestinal enterococci — Part 2: Membrane filtration method

While having discussion on the agenda during the 2nd meeting of the Committee, Dr. Diwas Pradhan, NDRI, Karnal, opined to explore the possibility of working on faecal enterococci in his laboratory. The Committee suggested BIS secretariat to share all the relevant Indian Standards and ISO Standards with Dr. Pradhan for examination and study to explore the possibility on developing an indigenous standard on enterococci. Copies of IS 5887 (Part 2) and documents circulated by ISO/TC 34/SC 9 for the ballot on ISO/NP 21722, copy of Form 4/ISO 21722 (ed1) and ISO/CD 21722 were shared with Dr. Diwas Pradhan. In response, the following comments/inputs were received from him placed below as **Annex 6**:

Annex 6_Response_Dr Prad

The Committee may kindly DELIBERATE and DECIDE

6.4 The Committee, at its last meeting, suggested BIS secretariat to recommend the Sectional Committees, having referred IS 5887 (P-2): 1976 in their product standards for detection of *S. aureus,* to replace this standard with IS 5887 (P-8/S-1):2023/ ISO 6888-1:2021 or IS 5887 (P-8/S-2):2023/ ISO 6888-2:2021, suitably. However, the reason for the same was not recorded by the Committee during the last meeting (except that the method is old). Hence, the reason(s) of replacing IS 5887 (P-2): 1976 with the referred standards may be discussed which may be shared with the Sectional Committees, having referred IS 5887 (P-2): 1976 for detection of *S. aureus* in their product standards.

The Committee may kindly DELIBERATE and DECIDE

ITEM 7 COMMENTS RECEIVED ON PUBLISHED STANDARDS

7.1 IS 5887 (Part 5/Sec 1) : 2023/ ISO 21872-1 : 2017 Methods for detection of bacteria responsible for food poisoning Part 5: Horizontal method for the determination of *Vibrio* spp Section 1: Detection of potentially enteropathogenic *Vibrio parahaemolyticus, Vibrio cholera* and *Vibrio vulnificus* (*second revision*)

a) Patna Branch Laboratory (PBL) of BIS has conducted a Manak Manthan programme (*a regular programme organized by Certification Branch Offices/ Laboratories of BIS to discuss the WC drafts issued/new standards published by the standards formulation departments with the stakeholders, including licensees and laboratories*) a few months ago on IS 5887 (Part 5/Sec 1) : 2023/ ISO 21872-1 : 2017. This standard is referred for detection of *Vibrio cholera* and *V. parahaemolyticus* in the Indian Standard for Packaged Drinking Water (IS 14543:2024). As per the requirement of IS 14543 : 2024, *Vibrio cholera* and *V. parahaemolyticus* shall be absent in 250 ml sample when tested in accordance with the method given in IS 5887 (Part 5/Sec 1). Packaged Drinking Water is under Mandatory Certification of BIS and its laboratories have huge inflow of samples of Packaged Drinking Water, drawn for the implementation of the BIS certification scheme, on routine basis. During the referred Manak Manthan programme, which was also attended by the Member Secretary of FAD 31 and Sh Angshuman Saha, as external expert, BIS laboratories expressed some difficulties in the implementation of the method given in IS 5887 (Part 5/Sec 1) : 2023 viz-a-viz requirement of testing of *Vibrio cholera* and *V. parahaemolyticus* in Packaged Drinking Water (IS 14543 : 2024). After the Manak Manthan programme, the PBL communicated with the other BIS laboratories also regarding the issues in the implementation of IS 5887 (Part 5/Sec 1) : 2023 and provided their consolidated comments alongwith a research article which are placed below as **Annex 7** and **Annex 8**, respectively.

The laboratories' comments were circulated to the members of FAD 31 for their inputs/views for deliberation in the Committee. We have received inputs from Ms. Sonam Bansal, Nestle India Ltd. She mentioned that as per IS 5887 (Part 5/Sec 1) 2023, the method has been validated for test portions of up to 25 g or 25 ml, whereas, as per cl 5.2.9 (including note) of IS 14543:2024, recommends that *Vibrio cholera* and *V. parahaemolyticus* shall be absent in 250 ml sample when tested by membrane filtration technique. For analysis of 250 ml water by filtration method, it requires the Validation / verification of method as per ISO 16140 (all parts). Copies of IS 5887 (Part 5/Sec 1) : 2023 and IS 14543:2024 are enclosed separately alongwith the agenda for reference of the members.

Annex 7_Comments_BIS Lat

Annex 8_Research Article.pdf

The Committee may kindly DELIBERATE and DECIDE

b) Comments have also been received from Sh Abhijit Singh, BIS, Eastern Regional Laboratory, Kolkata on the referred standard which are placed below as **Annex 9**:

Annex 9_Comments from Abhijit Singh o

The Committee may kindly DELIBERATE and DECIDE

ITEM 8 REVIEW OF INDIAN STANDARDS

8.1 As per the provisions of the BIS rules and regulations every Indian Standard within five years of its publication/ earlier reaffirmation is to be reviewed by the concerned Sectional Committee under the following guidelines:

i) The Standard may be reaffirmed in the present form.
ii) The standard may be reaffirmed with minor changes by issuing of an amendment.
iii) The Standard may be reaffirmed while simultaneously taking up for revision.
iv) The Standard may be withdrawn.

Under this criterion, the following Indian Standards are due for review as per the details mentioned in the table below:

Sl No.	IS No.	TITLE	Due Date
1.	IS 16067 (Part 1) : 2020/ ISO 16649-1 : 2018	Microbiology of the food chain — Horizontal method for the enumeration of beta-glucuronidase-positive *Escherichia coli* Part 1 Colony-count technique at 44°C using membranes and 5-bromo-4-chloro-3-indolyl beta-D-glucuronide (*First Revision*)	March, 2025
2.	IS 10232 : 2020/ ISO 6887-1:2017	Microbiology of the food chain — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — General rules for the preparation of initial suspension and decimal dilutions (*Second Revision*)	March, 2025
3.	IS 14988 (Part 1) : 2020 ISO 11290-1:2017	Microbiology of the food chain — Horizontal method for detection and enumeration of *Listeria monocytogenes* and of *Listeria* spp. Part 1 Detection method (First Revision)	March, 2025
4.	IS 14988 (Part 2) : 2020 ISO 11290-2:2017	Microbiology of the food chain — Horizontal method for detection and enumeration of *Listeria monocytogenes* and of *Listeria* spp. Part 2 Enumeration method (*First Revision*)	March, 2025
5.	IS 17385 : 2020 ISO 22117:2019	Microbiology of the food chain - Specific requirements and guidance for proficiency testing by interlaboratory comparison	March, 2025
6.	IS 17383 : 2020 ISO 11133:2014	Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media	March, 2025
7.	IS 17447 : 2020 ISO 6887-4 : 2017	Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Specific rules for the preparation of miscellaneous products	March, 2025

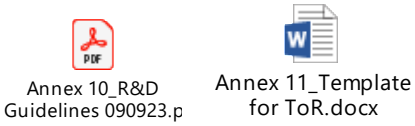
8.	IS 17448 : 2020 ISO 6887-3 : 2017	Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Specific rules for the preparation of fish and fishery products	March, 2025
9.	IS 5887 (Part 3/Sec 1) : 2020 ISO 6579-1 : 2017	Methods for detection of bacteria responsible for food poisoning Part 3 Horizontal method for the detection, enumeration and serotyping of *Salmonella* Section 1 Detection of *Salmonella* spp. (Third Revision)	March, 2025

The Committee may kindly DELIBERATE and DECIDE

ITEM 9 NEW SUBJECTS

9.1 a) Provision of R & D Projects Under BIS Funds

The Committee at its previous meetings was apprised about the availability of revised '*Guidelines for Research & Development Projects for Formulation and Review of Standards'* to support sectional Committees of BIS by providing funds upto Rs. 10 Lakh for each project to obtain latest empirical data/technical inputs to revise/formulate Indian Standards so that these are most up-to-date reflecting the state-of-the-art and are at par with international standards and practices. As per the revised guidelines, the subjects of the research & development projects shall be identified by the Sectional Committee concerned based on the need and scope of the Committee, along with the preparation of their Terms of References (ToRs). Copy of guideline and format of ToR were shared with the members which is again placed below for reference as **Annex 10** and **Annex 11**, respectively:



The Committee appreciated the initiative taken by BIS in this regard and encouraged members to propose projects on the subjects currently under deliberation, as well as on new subjects which are required to be taken up by the Committee as per its scope. In response, several ToRs are received from the members which are placed under the next agenda item.

The Committee may kindly NOTE

b) Proposal Received on R&D Project on Various Subjects

S. No.	Subject of the R&D Project	Proposer	ToR file
1.	Development of method for detection of *Shigella* species in milk and milk products By ICAR-NDRI, Karnal	Dr. Raghu H V, ICAR-NDRI, Karnal	Annex 12_Project proposal on Shigell
2.	Validation of lateral flow assay for rapid detection of *Listeria monocytogenes* in enriched foods	Dr. S. B. Barbuddhe, ICAR-NMRI, Hyderabad	Annex 13_Listeria LFA.docx

3.	Validation of method of bacterial enrichment process for detection of *Salmonella spp*. in foodstuff by culture		Annex 14_Salmonella corre
4.	PCR based method for confirmation of Salmonella enterica serovars Typhi, Typhimurium and Enteritidis in poultry meat	Dr. Kiran Bhilegaonkar, ICAR-IVRI, Bareilly	Annex 15_ToR_Salmonella :
5.	Validation of multiplex PCR test method for detection of *Enterococci species* (*E. faecalis* and *E. faecium*) in freshwater and seawater	Dr. Pankaj Kishore, ICA-CIFT, Kochi	Annex 16_ToR-Enterococci-
6.	Validation of method of test for simultaneous detection and differentiation of *Vibrio cholerae* and *V. parahaemolyticus* from *Vibrio species* using Multiplex PCR		Annex 17_vibrio-terms of re

The Committee at its last meeting took note of the proposal received from Dr. Raghu H V and decided to constitute a working group comprising of following members to examine the R&D proposal of ICAR-NDRI, Karnal and prepare detailed Terms of References (ToR), by the end of Jan 2024, however, it was decided to conduct the meeting once other R&D projects were also received for discussion:

i) Dr Kiran Bhilegaokar
ii) Dr S. B. Barbuddhe
iii) Sh Angshuman Saha
iv) Dr Pankaj Kishore
v) Dr Diwas Pradhan
vi) Dr Raghu HV

The Committee may kindly DELIBERATE and DECIDE

9.2 Brainstorming on Antimicrobial Resistance (AMR) in Food Products (FAD 31/WG 01)

The Committee at its last meeting discussed to initiate the work on **'Antimicrobial Resistance in Food Products'** in the Committee and decided to constitute a Working Group with title **'Brainstorming on AMR in Food Productss'** with the following composition:

1. Dr S B Barbudhe
2. Dr Kiran Bhilegaonkar
3. Dr Pankaj Kishore
4. Dr Diwas Pradhan
5. Dr Zunjar B Dubal
6. Dr Neetu Taneja
7. Dr Abhilash

It was decided that the Working group (FAD 31/WG 01) will provide its recommendation before next meeting of the Committee.

The Working Group conducted its first meeting on 08 July 2024 where a detailed deliberation took place on the subject. The WG noted the status of development of the work done by AHG 5 on 'Brainstorming on antimicrobial resistance' under ISO/TC 34/SC 9 including submission of New Work Item Proposal (NWIP) to ISO with the title 'Microbiology of the Food Chain - Detection of bacterial antimicrobial resistant genes in whole genome sequence data - Part I - Resistance Determinants'. The WG highlighted the challenge of obtaining standard

reference strains and the importance of having a common method for all laboratories in India and suggested for the need to establish a uniform testing protocol for AMR and to create easily accessible standards for laboratories. The need was also discussed for standardization in molecular methods for testing of antimicrobial resistance (AMR). The availability of national and international documents on the subject was also discussed by the WG. The conclusion and recommendations of the WG are given below for the consideration of the Committee:

Recommendations of FAD 31/ WG 01

A full day seminar may be organized on the subject comprises of experts on AMR from various sectors, such as, veterinary, fisheries etc. wherein talks may be planned on following topics:

a) Good Aquaculture and Good Animal Husbandry Practices for the containment of AMR;
b) Available phenotypic methods for detection of AMR, eg. The methods available with CLSI and ISO etc.;
c) Beneficial bacteria, eg. Lactic Acid bacteria as mediator of AMR and the guidelines/standards available in this regard;
d) Molecular approaches on AMR including PCR, RT-PCR, WGS and proteomic, enzymatic biosensor approaches etc.

Subsequent to each talk, a 15-minute deliberation will take place to explore the potential development of Indian Standards in the area discussed.

After the seminar, based on the outcome of the discussion, the members of WG, under the leadership of the Convenor, may prepare a plan for development of Indian Standard on the subject. To start with, the standards on Good Aquaculture and Good Animal Husbandry Practices for the containment of AMR may be taken up for development in next 6 months.

The Committee may kindly CONSIDER, DELIBERATE and DECIDE

ITEM 10 OTHER TECHNICAL ISSUESS

10.1 Communication received from IIT, Jodhpur for development of Indian Standard for detection of coliforms in water on a paper strip dip based method developed by them

FAD 31 received a communication on 23 April 2024 from Dr Meenu Chhabra, IIT, Jodhpur, stating that in a project, sponsored through Jal Jeevan Mission, their lab has developed a paper strip dip based method to test coliforms in water and they seek creation of a new standard/test for coliform test in water sharing the copy of the manuscript of the method which is placed below:

Annex 18_Paper
Strip dip test_manus

In order to assess and evaluate the suitability of the methods in terms of its workability, robustness and fitness for purpose, FAD 31 secretariat sought some clarification from Dr Meenu Chhabra regarding the availability of necessary data and technical information to present to the Committee for deliberation, which were responded back by her, as follows:

1. Query: Is the referred test applicable to wastewater/ polluted water/ drinking water??? The Indian Standards published by Food and Agriculture Department of BIS on Drinking water/ Packaged drinking water/ Natural mineral water have requirements to test microbiological contaminants and their limit has been set as 'Absent' for all. Hence, it is important to understand the use of the method.

Answer: The method is to test bacterial presence in drinking water. The test however, can test/quantify bacterial count in wastewater also.

2. Query: Is this method published?

Answer: No, we are yet to communicate but we have filed a patent on the same.

3. Query: Whether validation studies have been done for the method. If so, kindly share the details in this regard also?

Answer: Yes, for validation samples have been sent to NABL Bhubhneshwer and their feedback is awaited. Once received, we will share the same.

Subsequently, the matter was followed up by the official from Jal Jeevan Mission with FAD, BIS to understand the process and requirement for developing an Indian Standard on the method. They were apprised that the matter would be presented to the Food Microbiological Sectional Committee, FAD 31 after receiving the requisite details, for deliberation and taking decision. A meeting was conducted with them, through VC, where, the following information was also shared with them by Head FAD, for better clarity:

a) The Indian Standard on Drinking water, IS 10500 : 2012 'Drinking water — Specification' is the standard referred by various implementing authorities for potable/ drinking water for ascertaining the safety and quality of potable/drinking water. IS 10500 provides the limits for various chemical and microbiological parameters. In regard to the subject under discussion, the limit for *E. coli* and Coliforms is "Not detectable in 100 ml sample".

b) BIS had published another Indian Standard last year, IS 18283 : 2023 'Portable Field Testing Kit for Onsite Testing of Drinking Water — Specification" based on the request received from the Jal Shakti Ministry. This standard also refers IS 10500 : 2012 for the limits and provides the method of tests for microbiological parameters and requires that for microbiological parameters, manufacturer shall provide Limit of Detection (LoD) and it shall not be less than 1 cfu/100 ml in any case.

Copies of IS 10500 : 2012 and IS 18283 : 2023 are enclosed with the agenda separately, for reference of the members.

The following response has now been received from Dr Meenu Chhabra:

The kit has been validated as per the IS 18283 : 2023. The third party validation of our kit is done by this method only. Copy of validation report provide in placed below. The limit is zero CFU detected in any 100 ml water sample. Our test can detect as low as 10 CFU/ml within five minutes. Therefore, to apply the kit drinking water sample can be concentrated 1000 times using standard concentration techniques. PLEASE NOTE ALL MICROBIOLOGICAL ENUMERATION PROCEDURES REQUIRES SAMPLE CONCENTRATION. We have demonstrated our results without sample concentration on various tap waters and drinking water samples.

Annex
19_Evaluation of Ba

The Committee may kindly DELIBERATE and RECOMMEND

10.2 Discussion on making available all reference cultures with MTCC, as per the ISO standards for food and water samples, to the Indian stakeholders

During the 1st meeting of FAD 31, Sh. Angshuman Saha requested Dr. Suresh Korpole to take initiative to make available all reference cultures with MTCC, as per the requirement of ISO standards for food and water samples, to the Indian stakeholders. Dr. Korpole assured to discuss the matter in his institute. The Committee suggested Sh. Angshuman Saha to provide the list of cultures to IMTECH, Chandigarh. Sh. Angshuman Saha shared the list of WDCM cultures referred in ISO standards of Food and Water microbiology with Dr Suresh Korpole. In response, Dr Suresh Korpole provided a list of equivalent strains available at MTCC. He suggested to discuss on introducing MTCC strains into BIS standards. FAD 31/ Panel 4 recommended the Committee to communicate the list of WDCM cultures and their equivalent MTCC cultures to IMTECH Chandigarh for flashing on their website for ease of stakeholders, specially laboratories, to identify the equivalent MTCC cultures of WDCM cultures referred in ISO standards. It will facilitate them to purchase such MTCC cultures from MTCC, directly.

The Committee at its 3rd meeting appreciated the initiative taken by FAD 31/ Panel 4 to finalize the and requested BIS secretariat to communicate to IMTECH, Chandigarh sharing the list of WDCM cultures and their equivalent MTCC cultures along with the background of the subject requesting to host the list on the website of IMTECH Chandigarh for the benefits of the stakeholders as mentioned by the panel. The Committee suggested that the list of cultures available at website of MTCC may be displayed with the title 'List of cultures as per IS/ISO standards for food microbiology by Bureau of Indian Standards'. Also, the list must contain IS numbers along with ISO numbers. FAD 31 suggested to communicate to IMTECH, Chandigarh in this regard with updated list of IS numbers and requested Dr. Suresh Korpole to coordinate it.

Accordingly, FAD 31 secretariat updated the list including IS number against the ISO number alongwith updating the latest versions of ISO standards, wherever applicable. The list was shared with Dr Suresh Korpole for uploading on the website of IMTECH, Chandigarh with the request to displayed it under the title 'List of cultures as per IS/ISO standards for food microbiology by Bureau of Indian Standards'. The confirmation has been received from IMTECH Chandigarh that revised list has been uploaded on the website and can be assessed using following link:

https://mtccindia.res.in/files/document/MTCC_Bureau_of_Indian_Standards_(BIS)-2.pdf

The Committee, during its 3rd meeting, also suggested to explore contacting with NCL Pune, NCCS, Pune and PGIMER, Chandigarh to have similar coordination regarding the NCIM cultures, MCC cultures and fungal cultures respectively, as has been done with IMTECH, Chandigarh. However, action is yet to be initiated in this regard.

The Committee may kindly DELIBERATE and RECOMMEND

ITEM 11 INTERNATIONAL ACTIVITIES

11.1 BIS (India) is a 'P' (Participating) member in the ISO sub-committees **ISO/TC 34/SC 9 'Microbiology'** (of *Food Products*) and ISO/TC 147/SC 4 **'Microbiology'** (of *Water Quality*) and has been casting ISO ballots under them with the inputs received from the Committee Members.

BIS has voting rights on this sub-committee and is obligated to vote on all the ballots circulated under this sub-committee. The ballots received from ISO are circulated to committee members along with a last date of comments. Members are required to review the ballots and provide approval/disapproval/abstention to BIS along with justification for timely voting on these ballots.

11.2 The scope and program of work of ISO/TC 34/SC 9 is placed as **Annex 20** below:

Annex
20_PoW_TC_34_SC_9

11.3 The scope and program of work of ISO/TC 147/SC 4 is placed as **Annex 21** below:

Annex
21_PoW_TC_147_SC_

The Committee may kindly NOTE and CONSIDER

11.4 Status of the Work Done by FAD 31/ Panel 4

11.4.1 The panel conducted two meetings (6th meeting on 04.04.2024 and 7th meeting on 31.05.2024) since last meeting of FAD 31. The ballots issued by ISO/TC 34/SC 9 and ISO/TC 147/SC 4 have been voted as per the recommendations of the panel, with the approval of Chairperson, FAD 31. The panel comprises of all the members who are nominated as experts from BIS (India) in various Ad'Hoc group (ADH)/ working groups (WG) under ISO/TC 34/SC 9. *Annex 3* may be referred for the composition of the panel and details of the members nominated in AHGs/WGs of SC 9 is given in the table below:

Sl. No.	ISO/TC/SC/WG No. and Title	Name of Indian Expert and Organization Represented
1.	ISO/TC 34/SC 9/AHG 2 'SC9 Public website'	Sh Angshuman Saha, EIC, New Delhi
2.	ISO/TC 34/SC 9/AHG 4 'Collaboration on interlaboratory studies for standardized reference methods'	Smt Varsha Gupta, BIS, New Delhi
3.	ISO/TC 34/SC 9/AHG 5 'Brainstorming on antimicrobial resistance'	Dr Madhusudan Rao, ICAR-CIFT, Kochi
4.	ISO/TC 34/SC 9/AHG 6 'Commercial sterility testing'	Dr Pankaj Kishore, ICAR-CIFT, Kochi
5.	ISO/TC 34/SC 9/WG 2 'Statistics'	Sh Angshuman Saha, EIC, New Delhi
6.	ISO/TC 34/SC 9/WG 3 'Method validation'	Sh Angshuman Saha, EIC, New Delhi
7.	ISO/TC 34/SC 9/WG 5 'Food microbiology - Culture media (JWG between ISO/TC 34/SC 9 and ISO/TC 147/SC 4)'	i) Sh Angshuman Saha, EIC, New Delhi ii) Dr Rahul Warke, HiMedia Labs Pvt. Ltd, Mumbai iii) Smt Kumud Kushwaha, Merck Life Sciences Private Limited, Mumbai
8.	ISO/TC 34/SC 9/WG 6 'Food-borne parasites'	Dr Chethan Kumar HB, ICAR – National Institute of Veterinary Epidemiology and Disease Informatics (NIVEDI), Bangalore
9.	ISO/TC 34/SC 9/WG 8 'Preparation of test samples, initial suspension and decimal dilutions'	Dr Pankaj Kishore, ICAR-CIFT, Kochi
10.	ISO/TC 34/SC 9/WG 11 'Food and feed cultures'	Dr Jitender Singh, NDDB, Anand
11.	ISO/TC 34/SC 9/WG 13 'Coagulase positive staphylococci'	Dr Z B Dubal, IACR-IVRI, Barielly

12.	ISO/TC 34/SC 9/WG 16 'Yeasts and moulds'	Sh Angshuman Saha, EIC, New Delhi
13.	ISO/TC 34/SC 9/WG 18 'Detection and enumeration of Escherichia coli'	Sh Angshuman Saha, EIC, New Delhi
14.	ISO/TC 34/SC 9/WG 19 'Guidelines for conducting challenge tests'	Dr M Suman Kumar
15.	ISO/TC 34/SC 9/WG 21 'Enumeration of Enterococci'	Dr Rahul Kolhe
16.	ISO/TC 34/SC 9/WG 23 'Sulfite reducing clostridia and C. perfringens'	Sh Angshuman Saha, EIC, New Delhi
17.	ISO/TC 34/SC 9/WG 27 'Vibrio spp.'	Sh Angshuman Saha, EIC, New Delhi (Co-Convenor)
18.	ISO/TC 34/SC 9/WG 30 'Qualitative determination of staphylococcal enterotoxins'	Dr Pankaj Kishore
19.	ISO/TC 34/SC 9/WG 32 'Listeria monocytogenes and Listeria spp.'	Sh Angshuman Saha, EIC, New Delhi
20.	ISO/TC 34/SC 9/WG 33 'Detection of Cronobacter'	Dr Raghu H V, ICAR-NDRI, Karnal
21.	ISO/TC 34/SC 9/WG 34 'Enterobacteriaceae'	Sh Angshuman Saha, EIC, New Delhi
22.	ISO/TC 34/SC 9/WG 35 'Sampling techniques'	Sh Angshuman Saha, EIC, New Delhi
23.	ISO/TC 34/SC 9/WG 36 'General requirements relating to LAMP-based methods'	Dr Vinay Joshi, Lala Lajpat Rai University of Veterinary and Animal Sciences (LUVAS), Hisar

11.4.2 During the 6th meeting of the panel, held on 04.04.2024, Smt. Varsha Gupta, Member Secretary, FAD 31, delivered a presentation on the overview of ISO related work including participation in the international meetings, roles & responsibilities of experts, with the aim to impart better clarity to the newly nominated experts in various WGs/AHG of ISO/TC 34/SC 9 in this regard. Sh Angshuman Saha shared his experience working with SC 9 and its working groups and provided valuable key insights and suggestions to assist members in efficiently progressing with ISO-related endeavors. He also suggested the member to have a look into '**ISO Code of Conduct for the technical work**' copy of which was provided to the members. The members were apprised to keep the BIS secretariat informed on the important development including the meetings scheduled under their working/ad'hoc groups and information on the meetings attended by them. It was decided to develop a Google Sheet to mention the dates of upcoming meetings of working/ad'hoc groups of SC 9 in which experts are nominated from FAD 31 as well as their confirmation/excuse on the participation in the meeting.

*The members were also informed to prepare a **report of the meetings of the concerned working/ad'hoc groups**, they are nominated in, mentioning the comments/inputs/feedback provided by them during the meeting and important discussion held including the output of the meeting (specifically the benefit accrued to BIS and recommendations, if any) which is required to be presented by them during the meeting of Food Microbiology Sectional Committee, FAD 31.*

11.4.3 During the 7th meeting of the panel, held on 31.05.2024, Sh Angshuman Saha informed the secretariat that while purchasing the ISO adopted India Standards, online, through BIS website, it provides provision of

mentioning IS number only (even for the ISO adopted Indian Standards). The laboratories are always not aware of the Indian Standards number in case of ISO adopted standards. Hence, he requested the secretariat to take up the matter with BIS authorities to provide suitable provision on BIS website under sale of standards link.

The Committee may kindly CONSIDER, DELIBERATE AND DECIDE

11.5 Report of 43rd Plenary meeting of ISO/TC 34/SC9

The 43rd plenary meeting of ISO/TC 34/SC9 was held from 11-14 June 2024, in hybrid mode, at Saint Luis, Missouri, USA. Following Indian delegation was nominated to attend the above ISO meeting, through online mode:

1. Smt Varsha Gupta, Member Secretary, FAD 31 – Head of the Delegation
2. Sh. Angshuman Saha, Export Inspection Council of India, New Delhi

The report of the Indian delegation, along with their recommendations, is enclosed as **Annex 22** below for consideration of the committee:

Annex 22_Report of 43rd Plenary meetin

The Committee may kindly CONSIDER AND DECIDE

ITEM 12 TIME AND PLACE FOR THE NEXT MEETING

The annual meeting calendar serves as a roadmap for the committee members, allowing them to plan their participation and engagement in the standardization process. This enables the committee members to effectively plan and contribute to the standardization activities according to the established schedule.

Tentative plan for the Committee meetings of FAD 31 is given below:

Sectional Committee	Planned frequency (Months)	Next Meeting	Next to Next Meeting
Food Microbiology Sectional Committee, FAD 31	6	January 2025	July 2025

The Committee may kindly DELIBERATE and DECIDE

ITEM 13 ANY OTHER BUSINESS