

**BUREAU OF INDIAN STANDARDS**

**MINUTES**

<b>Name of the Committee</b>	<b>No. of Meeting</b>	<b>Date</b>	<b>Time</b>	<b>Venue</b>
Soil Quality and Fertilizers Sectional Committee, FAD 07	23 <sup>rd</sup> Meeting	15 October 2024 (Tuesday)	1100 h	Hybrid Meeting

**CHAIRPERSON:**

**Dr. Suresh Kumar Chaudhari**  
Deputy Director General  
(Natural Resource Management)  
New Delhi - 110012

**MEMBER SECRETARY:**

Sh. Kuldeep Mittal  
Scientist-B/ Assistant Director  
Food and Agriculture Department  
Bureau of Indian Standards, New  
Delhi

**ATTENDANCE** – See Annex I (page 7)

**ITEM 0 GENERAL**

**0.1 Welcome by Head, Food and Agriculture Department**

Shri Kuldeep Mittal, Member Secretary, FAD 7 extended a warm welcome to the Chairman and members to the 23<sup>rd</sup> meeting of the Soil Quality and Fertilizers Sectional Committee, FAD 7. He thanked the Chairman, Dr. Suresh Kumar Chaudhari for his continuous and efficient guidance towards contribution to the national standardization work. Member Secretary also thanked all the members for their valuable inputs and cooperation and urged members to actively deliberate on the various issues in the agenda.

**0.2 Opening Remark by the Chairperson**

Dr. Suresh Kumar Chaudhari, Chairman, FAD 7 extended a warm welcome to the members of the Committee to its 23<sup>rd</sup> meeting. In his opening remarks, the Chairperson emphasized active participation of all members in the work of the committee and urged them to deliberate on the various issues in the agenda in a pro-active and fruitful manner and respond within the stipulated time so that meaningful decisions could be taken and various draft standards finalized.

**ITEM 1 CONFIRMATION OF THE MINUTES OF 22<sup>nd</sup> MEETING**

**1.1** The Committee confirmed the minutes of 22<sup>nd</sup> meeting of FAD 7 as circulated without any modification.

**ITEM 2 SCOPE, ACTIVITIES AND COMPOSITION OF THE SECTIONAL COMMITTEE**

**2.1** The Committee noted the program of work of FAD 7 provided under Annex I of the agenda.

**2.2** The Committee noted the composition of FAD 7 provided under Annex II of the agenda.

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**2.3** The Committee noted the composition of the panels under FAD 7. The committee also directed the BIS Secretariat to co-opt a representative from the Fertilizers Association of India, New Delhi on FAD 7/Panel II and FAD 7/Panel III. The updated composition of the panels under FAD 7 is as under:

<b>Sl. No.</b>	<b>Panel of FAD 7</b>	<b>Composition</b>
<b>1.</b>	Panel I: Soil Health Card	1) Dr. S. P. Datta (Convenor) - Indian Institute of Soil Science, Bhopal 2) Dr. Tarunedu Singh - Indian Farmers Fertilizer Cooperative, New Delhi 3) Director - CFQCTI, Faridabad 4) Dr. P. Balasubhramanium - TNU, Coimbatore 5) Dr. Kabita Debnath Das – Fertilizer Association of India New Delhi 6) Dr. Rahul Mirchandani- Indian Micro Fertilizers Manufacturers Association 7) Dr. Gagnesh Sharma, National Centre of Organic and Natural Farming, Ghaziabad 8) Dr. Alok Srivastava, ICAR – National Bureau of Agriculturally Important Microorganisms, Kushmaur
<b>2.</b>	Panel-II: Formulation of Indian Standards on Nano Fertilizers	1) Dr. P. Balasubhramanium – TNU, Coimbatore (CONVENOR) 2) Representative from PAU, Ludhiana 3) Dr. Tapan Adhakari, IISS, Bhopal 4) Dr. Tarunedu Singh - Indian Farmers Fertilizer Cooperative, New Delhi 5) Shri Ankit Kumar – Insecticides India Limited. 6) Dr. Shyam Babu, Central Fertilizers Quality Control and Training Institute, Faridabad 7) Dr. Amit Rastogi, Coromandel International Limited 8) Dr. K. Subramaniam, Former Director, TNU, Coimbatore 9) Dr. Kabita Debnath Das – Fertilizer Association of India
<b>3.</b>	Panel-III Review of Test Method and code of practices	1) Shri Shyam Babu – (Convener) - Central Fertilizers Quality Control and Training Institute, Faridabad 2) Shri Sanjay Srivastava - IISS, Bhopal 3) Dr. P. Balasubramanium – TNAU 4) Dr. A. K. Rai - ICAR-CSSRI, Karnal 5) Shri Debasish Dutta – IARI, New Delhi 6) Dr. Kabita Debnath Das – Fertilizer Association of India

**ITEM 3 FINALIZATION OF DRFAT INDIAN STANDARDS**

**3.1** The Committee deliberated on agenda item 3.1 in detail and decided as under:

- a) The Committee finalized the following documents for publication without any modification:

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<b>Sl. No.</b>	<b>Doc. No.</b>	<b>IS Title</b>
1.	FAD 07(25166)WC	Specification for agricultural liming materials as soil amendments: Part 1 hydrated lime and burnt lime ( <i>second revision of IS 5409 (Part 1)</i> )
2.	FAD 07(25167)WC	Specification for agricultural liming materials as soil amendments: Part 2 limestone and dolomite ( <i>second revision of IS 5409 (Part 2)</i> )
3.	FAD 07(25180)WC	Specification for triple superphosphate ( <i>second revision of IS 1013</i> )
4.	FAD 07(25723)WC	Specification for by-product gypsum ( <i>first revision of IS 10170</i> )
5.	FAD 07(26645)WC	Zinc sulphate monohydrate, agricultural grade - Specification (first revision of IS 15848)

- b) The Committee finalized the following documents for publication with some modification given as under:

<b>Sl. No.</b>	<b>Doc. No.</b>	<b>IS Title</b>	<b>Comments</b>
1.	FAD 07(24970)WC	Fertilizer physical mixtures - Specification (First Revision of IS 7863)	The Committee decided to align the tolerance limit given at <b>Cl 3.3</b> of the document with FCO and finalized the document for publication.
2.	FAD 07(24971)WC	Granulated fertilizer mixtures - Specification (First Revision of IS 9024)	The Committee decided to align the tolerance limit given at <b>Cl 3.5</b> of the document with FCO and finalized the document for publication.

- c) The Committee discussed the comments received on 3 documents provided under agenda item 3.1 and decided as under:

<b>Sl. No.</b>	<b>Doc. No.</b>	<b>IS Title</b>	<b>Comments</b>
1.	FAD 07(25329)WC	Specification for castorseed cake for purposes for fertilizer ( <i>first revision of IS 3029</i> )	The committee decided not to accept the comments received from Dr. Gagnesh Sharma and finalized the document for publication.
2.	FAD 07(25295)WC	Specification for neem cake for manuring ( <i>first revision of IS 8558</i> )	The Committee deliberated on the comments received from Coimbatore Branch Office of BIS. The decision of the committee given at <b>Annex II</b> .

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3.	FAD 07(25184)WC	Terminology related to soil reclamation ( <i>first revision of IS 12410</i> )	The Committee requested Dr. A. K. Rai from CSSRI Karnal to examine the document and provide the comments within 1 month of circulation of the minutes. The comments received from Dr. Rai will be discussed in the next committee meeting.
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**ITEM 4 DOCUMENT FOR WIDE CIRCULATION**

**4.1 Doc: FAD 07(26533)P Draft Indian Standard on Flue Gas Desulphurized Gypsum for Agriculture Use – Specification**

The committee noted the information given under agenda item 4.1 and decided to issue the above document in wide circulation for a period of 60 days for public comments.

**ITEM 5 NEW WORK ITEM PROPOSAL**

**5.1** The committee did not accept the proposal received from Dr. Mahesh G. Shetty provided under agenda item 5.1.

**ITEM 6 COMMENTS ON INDIAN STANDARDS**

**6.1** The Committee deliberated on the comments received from M/s Siesto Systems Private Limited on the Indian Standards related to bio-fertilizers as given under agenda item 6.1. The Committee was agreed upon the submission and decided to make the following changes in Indian Standards related to carrier-based bio-fertilizer in line with Fertilizers Control Order:

Sl No.	IS No.	IS Title	Decision of the Committee
1.	IS 14806 : 2021	Azospirillum inoculants — Specification ( <i>first revision</i> )	The Committee decided to replace the <b>CI 4.1</b> of IS 14806 with following:  When tested by the method prescribed in Annex A of this standard, ASI shall contain minimum $5 \times 10^7$ CFU viable Azospirillum cells per gram of powder, granules or carrier material or per gram gelatin bases capsule content.
2.	IS 9138 : 2020	Azotobacter inoculants Spp. — Specification	The Committee decided to replace the <b>CI 4.2</b> of IS 9138 with following:  Azotobacter spp. inoculants (AI) shall contain a minimum CFU $5 \times 10^7$ viable Azotobacter cells per gram of powder, granules or carrier material or per gram gelatin bases capsule content during the entire period of shelf-life from the date of manufacture. The number shall be

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			counted by the plate count method as given in Annex B.
3.	IS 17672 : 2021	Potash mobilizing bacterial inoculant (KMBI) — Specification	The Committee decided to replace the <b>CI 4.2</b> of IS 17672 with following:  When tested by the method prescribed in Annex A of this standard, KMBI shall contain minimum $5 \times 10^7$ viable potassium mobilizing bacterial cells per gram of powder, granules or carrier material or per gram gelatin bases capsule content during the entire period of shelf-life from the date of manufacture, as specified on the packet.
4.	IS 8268 : 2020	Rhizobium inoculants – Specification ( <i>third revision</i> )	The Committee decided to replace the <b>CI 4.2</b> of IS 8268 with following:  Rhizobium inoculants (RI) shall contain a minimum of $5 \times 10^7$ viable Rhizobium cells per gram of powder, granules or carrier material or per gram gelatin bases capsule content till 6 months expiry period from the date of manufacture. The number shall be counted by the plate count method as given in Annex A.
5.	IS 18363 : 2023	Zinc solubilizing bacterial inoculant (ZnSBI) — Specification	The Committee decided to replace the <b>CI 4.2</b> of IS 18363 with following:  When tested by the method prescribed in Annex A, ZnSBI shall contain a minimum of $5 \times 10^7$ viable zinc solubilizing bacterial cells per gram of powder, granules or carrier material or per gram gelatin bases capsule content during the entire period of shelf life, as specified on the packet.

The Committee directed the BIS Secretariat to issue the draft amendments to above Indian Standards incorporating the changes mentioned above in wide circulation for a period of 60 days for public comments.

**ITEM 7 PANELWISE PROGRESS REPORT**

**7.1** The committee noted the information provided under agenda item 7.1.

**7.2** The Committee deliberated on agenda item 7.2 and requested Dr. Tapan Adhikari and Dr. Sharmila to submit the drafts as mentioned in agenda within 15 days.

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7.3 The panel deliberated on agenda item 7.3 in detail and decided as under:

**7.3.1 IS 14684 : 1999 Determination of nitrogen and nitrogenous compounds in soils**

The Committee approved the recommendation of the panel and decided to add new paragraph for estimation of nitrite nitrogen at the end of **CI 5** of IS 14684. The committee decided to incorporate the method submitted by Dr. A. K. Rai for estimation of nitrite nitrogen as provided under Annex IV of the agenda.

Also, on the recommendation of the panel, the Committee decided to incorporate the method for determination of available nitrogen by alkaline  $\text{KMnO}_4$  and decided to incorporate the method submitted by Dr. Sanjay Srivastava from IISS, Bhopal as provided under Annex VI of the agenda.

The Committee directed the BIS Secretariat to issue the draft revision of above document in wide circulation for a period of 60 days for public comments.

**7.3.2 IS 14685 : 1999 Determination of total sulphur and sulphur compounds in soils**

The committee approved the recommendation of the panel and decided to replace the method used for 'Determination of sulphate and Extractable sulphur by lithium Chloride' with 'Determination of sulphate and Extractable sulphur by calcium chloride'. The Committee decided to incorporate the method submitted by Dr. A. K. Rai as provided under Annex VII of the agenda.

The Committee directed the BIS Secretariat to issue the draft revision of above document in wide circulation for a period of 60 days for public comments.

**7.3.3 IS 5985 : 1985 Code of practice for handling and storage of bagged fertilizers (First Revision)**

The Committee reviewed the comments submitted by the Fertilizers Association of India, as presented in Annex VIII of the agenda. It was noted that the comments were not in the appropriate format for inclusion in the Indian Standard, and some were repeated. Therefore, the Committee requested the Fertilizers Association of India to resubmit the comments in the correct format to ensure their proper inclusion in the document.

**7.3.4 IS 6092 (Part 6) : 1985 Methods of sampling and test for fertilizers: Part 6 determination of moisture and impurities (First Revision)**

The Committee decided to issue the draft revision of above document in latest style and format of Indian Standards in wide circulation for a period of 60 days for public comments.

**ITEM 8      DATE AND TIME FOR NEXT MEETING**

The Committee decided to conduct its next meeting on 24<sup>th</sup> January 2025 tentatively in consultation with the Chairperson, FAD 7.

**ANNEX I**  
**ATTENDANCE**

<b>Sl. No.</b>	<b>Organization</b>	<b>Name</b>	<b>Email</b>
1.	Natural Resource Management, New Delhi	Dr. Suresh Kumar Chaudhari ( <i>Chairperson</i> )	<a href="mailto:ddg.nrm@icar.gov.in">ddg.nrm@icar.gov.in</a>
2.	Central Fertilizers Quality Control And Training Institute, Faridabad	Shri Shyam Babu	<a href="mailto:shyamdebbera@gmail.com">shyamdebbera@gmail.com</a>
3.	ICAR - Central Soil Salinity Research Institute, Karnal	Dr. A. K. Rai	<a href="mailto:ak.ra@icar.gov.in">ak.ra@icar.gov.in</a>
4.	ICAR - National Bureau Of Agriculturally Important Microorganisms, Kushmaur	Dr. Hillol Chakdar	<a href="mailto:hillol.chakdar@gmail.com">hillol.chakdar@gmail.com</a>
		Dr. Alok Kumar Srivastava	<a href="mailto:aloksrivastava@gmail.com">aloksrivastava@gmail.com</a>
5.	ICAR - National Bureau Of Soil Survey And Land Use Planning, Nagpur	Dr. Hrittick Biswas	<a href="mailto:hrittick.biswas@icar.gov.in">hrittick.biswas@icar.gov.in</a>
			<a href="mailto:nitin.patil@icar.org.in">nitin.patil@icar.org.in</a>
6.	Indian Farmers Fertilizer Cooperative, New Delhi	Dr. Tarunendu Singh	<a href="mailto:tarunendu@iffco.in">tarunendu@iffco.in</a>
7.	Indian Institute of Soil Science, Bhopal	Dr. S P Datta	<a href="mailto:director.iiss@icar.gov.in">director.iiss@icar.gov.in</a>
8.	Indian Micro Fertilizers Manufacturers Association, Pune	Dr. R. K. Tewatia	<a href="mailto:rkt2129@gmail.com">rkt2129@gmail.com</a>
9.	Institute of Agricultural Sciences, Banaras Hindu University, Varanasi	Dr. Amitav Rakshit	<a href="mailto:amitavar@bhu.ac.in">amitavar@bhu.ac.in</a>
10.	International Zinc Association, New Delhi	Dr. Soumitra Das	<a href="mailto:sdas@zinc.org">sdas@zinc.org</a>
11.	Multiplex Bio-Tech Private Limited, Bengaluru	Dr. Mahesh G. Shetty	<a href="mailto:mgshetty@multiplexgroup.com">mgshetty@multiplexgroup.com</a>
12.	Tamil Nadu Agricultural University, Coimbatore	Prof. P. Balasubramaniam	<a href="mailto:balutnau@gmail.com">balutnau@gmail.com</a>
13.	The Fertiliser Association of India, New Delhi	Dr. Kabita Debnath Das	<a href="mailto:ags@faidelhi.org">ags@faidelhi.org</a>

**ANNEX II**

<b>Sl. No.</b>	<b>Clause No.</b>	<b>Comment</b>	<b>Propose change</b>	<b>Decision of the Committee</b>
1.	First Page, Foreword – 3rd paragraph	Comments/ Suggestions: “In this revision, the standard has been brought out in the latest style” to be modified as “...brought out on considering the latest developments in the Fertilizer Control Order 1985” Justification: Provides more justification and relevance for revision	“In this revision, the standard has been brought out on considering the latest developments in the Fertilizer Control Order 1985”	Accepted
2.	Page No.1, Cl.3.1- Description	Comments/ Suggestions: “The material shall be of uniform texture, clean and free from adulterants” to be modified as “...extraneous matter” Justification: The term adulterant indicates substances that are deliberately added to reduce the quality of the product, here the intention is to ensure neem cake free from extraneous matter.	“The material shall be of uniform texture, clean and free from extraneous matter”	Accepted
3.	Page No.1, Cl.3.2- Description	Comments/ Suggestions: “The material shall pass wholly through 2.36 mm IS sieve of which not less than 70 percent shall pass through 850 microns IS sieve” should be deleted. Justification: Manufacturers these days are producing neem cakes in the form of powder, flakes and pellets. Hence mere mention of sieve sizes will restrict manufacturer to adopt to varied consumer requirements.	“ The neem cake is available in the form of powder, flake, and pellets”	Accepted
4.	Page No.1, Table 1 Sl.No. (ii)– Requirements for neem cake for manuring	Comments/ Suggestions: • “Water insoluble organic nitrogen” to be modified as “Total Nitrogen” • The requirement of Min.2.5 to be modified as 1.5 Justification: In line with “The fertilizer (Control) Order, 1985”	“Total nitrogen, percentage by mass, on moisture-free basis” • The requirement of Total nitrogen, Min 1.5	Accepted
5.	Page No.1, Table 1	Comments/ Suggestions: “The requirement for Total ash of	Total ash, percent by mass, Max. 15	Accepted

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	Sl.No. (iii)– Requirements for neem cake for manuring	Max. 13 to be modified as 15” Justification: In line with “The Fertilizer (Control) Order, 1985”		
6.	Page No.1, Table 1 Sl.No. (iv)– Requirements for neem cake for manuring	Comments/ Suggestions: “Acid insoluble ash, percent by mass, on moisture-free basis” to be deleted Justification: The requirement is more relevant in food and feed materials, not so significant w.r.t fertilizers.		Accepted
7.	Page No.1, Table 1- Requirements for neem cake for manuring	Comments/ Suggestions: Parameter to be included in accordance with “The Fertilizer (Control) Order, 1985” Justification: In line with “The Fertilizer (Control) Order, 1985”-	Requirement for pH needs to be incorporated.	The committee decided not to accept the comment as the pH is not a mandatory parameter for neem cake.
8.	Page No.1, Table 1- Requirements for neem cake for manuring	Comments/ Suggestions: “Conductivity” parameter to be included in accordance with “The Fertilizer (Control) Order, 1985” Justification: The requirement shall be included in line with “The fertilizer (Control) Order, 1985”and the limits were mentioned as per the manufacturers suggestion that “the neem cake being a natural product obtained without addition of any substances, naturally it possess conductivity in the range of 5-7 ds/cm, however if the consumers are instructed to use it with dilution the soil quality will not get affected.	The requirement for conductivity (ds/cm) i) <4.0 for direct usage ii) <8.0 for dilute applications	The committee decided not to accept the comment.
9.	Page No. 3, ANNEX A- Determination of Moisture, Cl.A-2- Procedure	Comments/ Suggestions: “Weigh accurately about 5 g of the prepared sample in a tared aluminum dish” – in this requirement “petri dish” shall also be included Justification: Petri dish can also be used for the determination of moisture content.	“Weigh accurately about 5 g of the prepared sample in a tared aluminum dish/petri dish”	The Committee decided not to accept the comment as the recovery of the material form petri dish is quite difficult.

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10.	Page No. 3, ANNEX A- Determination of Moisture, Cl.A-2- Procedure	Comments/ Suggestions: “With cover removed, place the dish and cover in an air-oven maintained at (135±2°C)” to be modified as ‘hot air oven’ at (102±0.5°C) Justification: Hot air-oven is commonly used in the laboratory and are now capable to maintain temperatures in 0.5 °C tolerance.	“With cover removed, place the dish and cover in an hot air oven maintained at (102 ± 0.5°C)”	Accepted
11.	Page No. 3, ANNEX B- Determination of Water Insoluble Organic Nitrogen	Comments/ Suggestions: The title “Determination of Water Insoluble Organic Nitrogen” to be modified as “Total Nitrogen” Justification: Reference: “The fertilizer (Control) Order, 1985”, Schedule- II, Part-B	“Determination of Total Nitrogen”	Accepted
12.	Page No. 5, ANNEX C- Determination of Total Ash	Comments/ Suggestions: “Ignite with flame of a Meker burner for about one hour” is to be deleted “Ignite the dish again in the muffle furnace for 30 min, cool and weigh. Repeat this process until the difference in mass between two successive weighing is less than 1ms. Note the lowest mass” is to be deleted. The muffle furnace tolerance temperature (550 ± 20°C) to be modified Justification: Muffle furnace these days possess greater efficiency and are having better temperature control, hence this may be removed.	The muffle furnace temperature at (550 ± 10°C)	Accepted
13.	Page No. 5, ANNEX D- Determination of Acid Insoluble Ash	Comments/ Suggestions: Annex D to be deleted Justification: The requirement is more relevant in food and feed materials, not so significant w.r.t fertilizers.	Annex D to be deleted	Accepted