

BUREAU OF INDIAN STANDARDS
MINUTES

Name of the Committee	No. of Meeting	Date	Time	Venue
Agricultural Machinery and Equipment Sectional Committee, FAD 11	24 th	23 June 2023 (Friday) & 6 July 2023 (Thursday)	10:30am & 3:30 PM	Hybrid Mode Lal C Verma Hall, Bureau of Indian Standards, HQ, New Delhi & Virtual Mode

CHAIRPERSON:

Dr. C R Mehta
(Chairperson, FAD 11)
Director,
ICAR–Central Institute of Agricultural Engineering,
Bhopal

MEMBER SECRETARY:

Vikrant Chauhan
(Member Secretary, FAD 11)
Scientist-B / Assistant Director
Food & Agriculture Department,
Bureau of Indian Standards, New Delhi

ITEM 0 GENERAL**0.1 Welcome**

Shri Vikrant Chauhan, Scientist-B/ Assistant Director, Food and Agriculture Department, BIS welcomed Dr. C R Mehta, Chairperson, FAD 11 and members of FAD 11 to the 24th meeting of the committee. Shri Vikrant apprised the committee members regarding actions taken since the 23rd meeting of the committee and the publication of various new Indian Standards. Requesting for support from the committee, Shri Vikrant urged for fruitful and conclusive deliberation on the issues raised in the agenda.

Smt. Suneeti Toteja, Head, Food and Agriculture Department (FAD), BIS extended a warm welcome to Chairperson, FAD 11 and all the members of the committee. Smt. Toteja apprised the members, that being an important technical committee having around 230 standards, it is important to revise the Pre-2000 standards while simultaneously focusing on new subjects for standard formulation. Head, FAD also apprised the committee regarding the interaction of Top Management of BIS with Chairpersons of all the technical committees of BIS under 15 Division Councils and process reforms taken up by BIS, to be implemented in due course of time. Head, FAD requested all the members for active participation and contribution at ISO level by voting/commenting on different ballots and nominating our experts in different WGs under ISO committees.

0.2 Opening Remarks by the Chairman

Dr. CR Mehta, Director, ICAR-Central Institute of Agricultural Engineering, Bhopal and Chairperson, Agricultural Machinery and Equipment Sectional Committee, FAD 11 in his opening remarks extended a warm welcome to the members of the Committee to 24th meeting. He urged the committee members to actively participate in the meeting and have a fruitful, to the point discussion to reach a consensus on revision/formulation of the Indian Standards. Addressing to points mentioned by Smt Toteja, Dr. Mehta also requested members of committee to actively contribute at international level by providing comments on different under development standards being circulated. Dr. Mehta requested all members of different SAUs in the committee to also interact with their counterparts in other SAUs for taking inputs on standards under development. Dr. Mehta apprised the committee about the new subjects such as automation/sensors used in agricultural machinery which could be

taken up for standardisation in future. At last, Dr Mehta requested members, with a positive framework of mind to give their expert inputs corresponding to different agenda points.

0.3 Presentation on 'Process Reforms in Standardization Activity of BIS and Future Roadmap' by the Member Secretary



Annex A_Reforms in
BIS.pptx

The Member Secretary FAD 11 gave a presentation (attached at Annex A) on the above subject. The process reforms by BIS were highly appreciated by the committee and members were requested to identify potential collaboration for promotion of Indian Standards between the committee and BIS. After due deliberation following decision were made by the committee:

- a. The proposed annual action plan for the year 2023-24 prepared by Member Secretary, FAD 11 was approved by the committee with modifications. (*also see 3*)
- b. The annual meeting calendar proposed by Member Secretary, FAD 11 was approved as follows:
 - a. 4th week of June 2023 (already completed)
 - b. 4th week of October 2023 (Physical)
 - c. 4th week of February 2023
 - d. 4th week of June 2024
- c. The committee decided to conduct a wider stakeholder consultation for identification of the need/areas for research projects to be taken up for inclusion of empirical data and insights which can support the standardization activity under FAD 11. (*also see 8.2*)
- d. In order to carry out necessary activities pertaining to international participation, the committee decided to formulate dedicated Mirror Working Groups in corresponding to the seven ISO/TC 23 Sub-Committees in which FAD 11 has a P-membership. Further, the Chairperson, FAD 11 requested the committee members to go through the SoPs pertaining to international participation in great details to avoid any confusion.
- e. The committee requested all the members to go through different actions points mentioned in the presentation regarding identification of international events/subscription of important scientific journal/creation of Pool of Experts and provide their feedback to BIS Secretariat within a period of 30 days.

ITEM 1 CONFIRMATION OF THE MINUTES OF THE TWENTY THIRD MEETING

1.1 The committee confirmed the minutes of the 23rd meeting of Agricultural Machinery and Equipment Sectional Committee, FAD 11 held on 23 January 2023 (through virtual mode) as circulated vide our email dated 03 March 2023, without any change.

ITEM 2 SCOPE, ACTIVITIES AND COMPOSITION OF THE SECTIONAL COMMITTEE

2.1 Scope & Program of Work of the Committee

2.1.1 The committee noted the scope of Agricultural Machinery and Equipment Sectional Committee, FAD 11 as mentioned in 2.1.1 of the agenda.

2.1.2 The committee noted the program of work of FAD 11 as enclosed in Annex 1 of the agenda.

2.2 Review of the Composition of the Technical Committees

Smt. Suneeti Toteja, Head, Food and Agriculture Department, BIS briefed the committee members about the different tasks (as mentioned in 2.3 of the agenda) appearing on the dashboard of Hon'ble Minister,

Ministry of Consumers Affairs, Food and Public Distribution, New Delhi and the required action to be taken on part of BIS and the concerned technical committees.

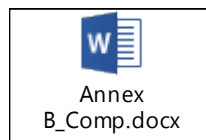
The committee noted the points made by Head, FAD and after due deliberation took the following decisions:-

1. The committee noted that there is no member in personal capacity for more than 5 years.
2. The committee recommended to withdraw the nomination of Captain Tractors Private Limited, Rajkot due to lack of participation over the past more than four years.
3. The committee decided to retain the membership of AMMA-India, Pune, John Deere India Pvt. Ltd, Pune, KAMCO, Athani and ASPEE Agro Equipment Pvt. Ltd., Mumbai Group due to their active participation and contribution in the work of FAD 11. However, committee requested ASPEE group and KAMCO to review their nominations to include new members representing their organisation. *[marked in red color in Annex B]*
4. The committee noted that, members from several organizations were not attending the meeting on a regular basis. The committee requested BIS Secretariat to write a polite reminder letter to organization who have not attended the last two meetings. In case the organization is found absent in third meeting as well, their membership would be withdrawn. *[marked in green color in Annex B]*.

2.3 Composition of the Sectional Committee

2.3.1 The committee noted the newly co-opted organizations given in 2.2.1 of the agenda as members of Agricultural Machinery and Equipment Sectional Committee, FAD 11.

2.3.2 The committee deliberated on the composition of Agricultural Machinery and Equipment Sectional Committee, FAD 11 and the decisions regarding modification of composition taken in the view of necessary participation from organizations and change in designations/ organizations of the members. The updated composition of the committee is enclosed at Annex B.



2.4 Composition of Panels Under the Committee

The committee noted the composition of the different panels under FAD 11 and after due deliberation decided to reconstitute several panels and disband panels which have completed their task. The decision of the committee is tabulated below :

S.No.	Panel of FAD 11	Old Composition	Decision of the committee
1.	Panel- I: Panel for Discussion on Half-Track Sugarcane Harvester	a) Dr. Mukesh Jain, (Convenor), NRFMTTI, Hisar b) Shri KP Singh, CLAAS, Chandigarh c) Shri Santosh Rao, CNH, Pune d) Shri Sujit Hinge, CNH, Pune e) Shri Santosh Sudhakar, John Deere, Pune f) Shri Chandrashekhar Deshmukh, John Deere, Pune	During the meeting, Dr. Mukesh Jain informed the committee that, the panel has already dropped the subject for preparation of IS on Half Track Sugarcane Harvester. Therefore, after due deliberation the committee decided to disband Panel I.

		<p>g) Shri Ashok Kumar, Kubota, Faridabad</p> <p>h) Shri Jaydeep Desai, M&M, Mumbai</p> <p>i) Shri Vishwa, Shaktiman, Gujarat</p>	
2.	Panel- II: To review IS 4358 (Specification for Sickles) and of NWIP on Scythe Panel	<p>a) Dr. Uady R. Badegaonkar, (Convenor) CIAE, Bhopal</p> <p>b) Dr. Surendra Singh, AMMA-India, Pune</p> <p>c) Shri Anant Chaturvedi, Alternative Farmtechvt. Ltd., Kanpur</p>	The committee noted that Indian Standard on Scythes — Specification has already published, therefore, after due deliberation the committee decided to disband Panel II.
3.	Panel- III: To review Standards on Gardening & Forestry Tools & Agricultural Implements Panel	<p>a) Dr. Surendra Singh, (Convenor) AMMA-India, Pune</p> <p>b) Shri Chandrashekhar Deshmukh, John Deere, Pune</p> <p>c) Dr. Dilip Jat, CIAE, Bhopal</p> <p>d) Shri Gurchintan Sinhg, Falcon Garden Tools, Ludhiana</p>	<p>The committee after due deliberation decided to change the name of the Panel and add some new members to the Panel.</p> <p>Panel III : To Formulate and Review Indian Standards on Gardening & Forestry Tools & Agricultural Implements</p> <p>Composition of panel :</p> <p>a) Dr. Surendra Singh, (Convenor) AMMA-India, Pune</p> <p>b) Shri Chandrashekhar Deshmukh, John Deere, Pune</p> <p>c) Dr. Dilip Jat, CIAE, Bhopal</p> <p>d) Shri Gurchintan Sinhg, Falcon Garden Tools, Ludhiana</p> <p>e) Dr. Sachin Madhukar Nalawade, MPKV, Rahuri</p> <p>f) Representative from ASPEE Group</p> <p>The committee was apprised to fact that nowadays engine and battery operated gardening and forestry tools are available in market. Therefore, the committee requested Panel 3 to also work upon new subjects for standardisation.</p>
4.	Panel- IV: To review NWIP Super-SMS Performance Test Method Panel	<p>a) Dr. Mukesh Jain, (Convenor), NRFMTTI, Hisar</p> <p>b) Shri KP Singh, CLAAS, Chandigarh</p> <p>c) Shri Santosh Sudhakar, John Deere, Pune</p>	Noting that, the draft submitted by Panel on SMS for Combine Harvester — Performance test method is already circulated as P-draft among the committee members, the committee decided to disband Panel IV.

		<p>d) Shri Jaydeep Desai, M&M, Mumbai</p> <p>e) Dr. Rajesh Goyal, PAU, Ludhiana</p>	
5.	Panel-V: To Review and formulate new Standard on Tractor and Power Tillers	<p>a) Dr. CR Mehta, (Convenor) CIAE, Bhopal</p> <p>b) Shri Himanshu Mishra, CNH, Pune</p> <p>c) Director, CFMTTI, Budni</p> <p>d) Shri Chakradhar CHimote, CFMTTI, Budni</p> <p>e) Shri Nitin Jangra, Escorts Kubota, Faridabad</p> <p>f) Shri Mohit Kumar, ITL, Hoshiarpur</p> <p>g) Shri Mansingh Jagdale, John Deere</p> <p>h) Shri Pradeep Shinde, M&M, Mumbai</p> <p>i) Shri Hemant Divekar, TMA, New Delhi</p> <p>j) Shri Philip Koshy , TMA</p> <p>k) Shri RP Vasudevan, TMA, New Delhi</p> <p>l) Shri Krishna K Tiwari, TMA, New Delhi</p> <p>m) Shri Vivek Gupta, TI Clean Mobility, Chennai</p> <p>n) Shri SO Tyagi, TI Clean Mobility, Chennai</p>	<p>The committee decided to keep standards related tractors and power tillers under different panels. Therefore, the committee decided to change the name of the Panel 5 and reconstitute the Panel accordingly.</p> <p>Panel-V: To Formulate and Review Indian Standards on Tractors.</p> <p>a) Dr. CR Mehta, (Convenor) CIAE, Bhopal</p> <p>b) Shri Himanshu Mishra, CNH, Pune</p> <p>c) Director, CFMTTI, Budni</p> <p>d) Shri Chakradhar Chimote, CFMTTI, Budni</p> <p>e) Shri Nitin Jangra, Escorts Kubota, Faridabad</p> <p>f) Shri Mohit Kumar, ITL, Hoshiarpur</p> <p>g) Shri Mansingh Jagdale, John Deere</p> <p>h) Shri Pradeep Shinde, M&M, Mumbai</p> <p>i) Shri Hemant Divekar, TMA</p> <p>j) Shri Philip Koshy , TMA (Alternate I)</p> <p>k) Shri Krishna K Tiwari, TMA (Alternate II)</p> <p>l) Shri Vivek Gupta, TI Clean Mobility, Chennai</p> <p>m) Shri SO Tyagi, TI Clean Mobility, Chennai</p>
6.	Panel- VI: Panel on Agricultural mechanization related to Cotton productivity	<p>a) A representative from CIAE, Bhopal</p> <p>b) Shri Gursahib Singh, PAU (Convenor)</p> <p>c) A representative from AMMA-India</p> <p>d) Shri Santosh Rao</p> <p>e) Shri Chandrashkhar Deshmukh</p> <p><i>(Please refer MOM of 22nd Meeting of FAD 11 held on 11 August 2022)</i></p>	<p>The committee after due deliberation decided to make a working group (WG 2) for the subject rather than a panel, because the scope of the group is limited and composition is also updated.</p> <p>WG 2- Panel to formulate Indian Standards on Cotton Farming Mechanisation</p> <p>Composition of WG 2</p>

			<p>a) Shri Chandrashkhar Deshmukh, John Deere, Convenor</p> <p>b) Dr. Ashutosh Pandiwar, CIAE, Bhopal</p> <p>c) Dr. Anoop Kumar Dixit, PAU, Ludhiana</p> <p>d) Shri Santosh Rao, CNH</p> <p>e) Shri Parag, Shaktiman</p> <p>f) Dr. VG Arude, CIRCOT</p>
7.	New Panel on Power Tillers		<p>The committee after due deliberation decided to create a new panel to formulate and revise Indian standards on Power Tillers :</p> <p>Panel VI : To Formulate and Review Indian Standards on Power Tillers</p> <p>Composition of panel :</p> <ol style="list-style-type: none"> 1. Director, SRFMTTI as Convenor 2. One member from PTAI 3. Shri AR Ganesh Kumar, VST Tillers Tractors Ltd, Bangalore 4. Representative from KAMCO, Kerala 5. Representative from Kirloskar, Pune 6. Representative from Shrachi
8.	Panel- VII: Panel to Formulate Indian Standards on Drone Seeder and Drone Sprayer	<p>a) Dr. R. Kavitha, (Convenor), TNAU, Coimbatore</p> <p>b) Dr. Satya Prakash Kumar, CIAE, Bhopal</p> <p>c) Shri Sourabh Srivastava, Iotech World, Gurgaon</p> <p>d) Shri Chandrashekhar Deshmukh, John Deere, Pune</p> <p>e) Dr. A. Surendra Kumar, TNAU, Coimbatore</p> <p>f) Dr. AP Mohan Kumar, TNAU, Coimbatore</p>	<p>The committee noted the composition of the FAD 11/ Panel 7. Further, upon request the committee included Dr. SM Nalawade, MPKV, Rahuri and Representative from ASPEE Group into the panel.</p>

2.5 New/Revised Indian Standards Published

2.5.1 The committee noted the list of newly published Indian Standards as given in 2.5.1 of the agenda. As all the standards were ISO adoptions, the committee requested BIS secretariat to circulate the soft copies of Indian Standards among the committee members.

2.6 Withdrawal of Indian Standards

2.6.1 The committee noted the list of Indian standards provided in 2.6.1 of the agenda approved by Food and Agriculture Division council in its 27th meeting dated 1 March 2023 for withdrawal.

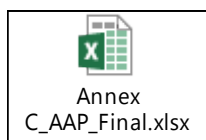
All the above mentioned Indian Standards were withdrawn in May 2023 except IS 5135 (Part 1) 1994. (*see 8.5 S.No. 6*)

ITEM 3 FINALISATION OF ANNUAL ACTION PLAN FOR 2023-24 AND MEETING CALENDAR

In its 24th meeting of FAD 11, the committee reviewed the proposed Annual Action Plan for the year 2023-24 (enclosed at Annex 3 of the agenda) and after due deliberation approved the same for implementation with certain modifications in the timeline for completion of new projects.

Further, the committee requested the conveners of the various panels and working groups for implementation of Annual Action Plan sticking to the allocated time-frame.

The final approved Annual Action Plan for 2023 is enclosed at Annex C.



3.1 Proposed Annual Calendar for Technical Committee Meetings:

The FAD 11 committee approved annual meeting calendar proposed by Member Secretary, FAD 11 as follows:

- a. 4th week of June 2023 (already completed)
- b. 4th week of October 2023
- c. 4th week of February 2024
- d. 4th week of June 2024

Further, the committee directed, conveners of different Panels and working groups to schedule meetings and discussion as per priority to complete the allocated task in given timeline.

ITEM 4 FINALISATION OF DRAFT STANDARDS

4.1 Draft Amendment No. 1 to IS 13539: 2018 Power Tiller — Recommendations on selected performance and other characteristics (*second revision*)

The committee noted that during wide circulation no comments were received on the draft Amendment No. 1 to IS 13539 [FAD 11(22073)]. Therefore, the committee after due deliberation decided to send the draft amendment for publication.

The committee also noted that the standard is due for review as per BIS's 5 yearly review policy and has been allocated to Shri A.R. Ganesh Kumar for review by FAD 11/P5. The committee requested, Shri Ganesh to submit his feedback within a period of 1 month.

ITEM 5 APPROVAL OF DRAFT STANDARDS FOR WIDE CIRCULATION

5.1 Revision of Indian Standards on Standards on Gardening & Forestry Tool and Agricultural Implements

The committee noted the revised draft revision of Indian Standards on several gardening and forestry tools (as listed in 5.1 of the agenda) which were discussed by FAD 11/P 3 during its 2nd meeting on 1 and 2 April 2023 at Falcon Tools Pvt. Ltd., Ludhiana for raw material specification. The committee appreciated the work done by the panel and after due deliberation decided to send the draft revision into wider circulation for a period of 60 days for commenting.

The committee also noted that draft revision of IS 3094 “Specification for dah, jungle cutting (first revision)” has already completed its wide circulation stage and no comments received. However, as modification were made in the raw material specifications, the committee decided to send again the draft revision into wider circulation for a period of 60 days for commenting.

5.2 Draft Revision for SP 44- Handbook of Agricultural Machinery and Terminology

The committee noted the information provided in 5.2 of the agenda regarding comments received from Mahindra and Mahindra and MPKV, Rahuri and PAU, Ludhiana on P-draft **[FAD 11 (22323) P] of SP 44 which was circulated among the committee members. The committee requested** Dr. Surendra Singh, AMMA-India to incorporate all the necessary comments in the draft.

Further, the committee after due deliberation decided to circulate the draft revision into wider circulation for a period of 60 days for commenting.

5.3 Merger of IS 17045: 2018 “Rotary tiller (Rotavator) - Tractor driven - Test procedure and recommendations on selected performance characteristics” and IS 6690: 1981 Specification for blades for rotavator for power tillers (first revision)

The committee noted the information provided in 5.3 of the agenda regarding comments received from PAU, Ludhiana and AMMA-India on P-draft **[FAD 11 (22463) P], merger of IS 17425 and IS 6690 which was circulated among the committee members. The committee requested** Dr. Surendra Singh, AMMA-India to incorporate all the necessary comments in the draft.

Further, the committee after due deliberation decided to circulate the merged draft into wider circulation for a period of 60 days for commenting.

5.4 Draft Tractor Drawn Laser Land Leveller — Specification and Test Code

The committee noted that, raw material requirement for soil cutting blade and hardness requirement which is very much essential during testing of the machine is missing in the draft standard enclosed at Annex 10 of the agenda.

Therefore, the committee after due deliberation requested Shri Chandrashekhar Deshmukh, John Deere to provide the required information within a period of 1 month. Upon incorporation, the draft will be sent into wider circulation for a period of 60 days for commenting.

5.5 Draft Indian Standard – Straw management system (SMS) for combine harvesters — Performance test method

The committee noted the information provided in 5.5 of the agenda regarding comments received from Mahindra and Mahindra and PAU, Ludhiana on P-draft **[FAD 11 (22325) P] of Straw Management System which was circulated among the committee members. The committee requested** Dr. Surendra Singh, AMMA-India to incorporate all the necessary comments in the draft.

Further, the committee after due deliberation decided to circulate the draft revision into wider circulation for a period of 60 days for commenting.

ITEM 6 NEW SUBJECTS FOR STANDARDIZATION**6.2 Draft Indian Standard – Round Baler Machine**

In its 24th meeting of FAD 11, the committee noted that draft standard [FAD 11 (22476) C] which is an identical adoption of ISO 11450:1999 (Equipment for harvesting and conservation — Round balers — Terminology and commercial specifications) was sent into wide circulation for a period of 30 days. As no comments were received during WC, the committee decided to send the document for publication.

Further, the committee also noted that, Part 2 of the draft standard on Test method for Round Baler Machine, is ready to be sent into wide circulation for period of 30 days and requested BIS Secretariat to expedite the process. In case no comments are received, the committee authorized BIS Secretariat to send the document for publication after the approval of chairperson, FAD 11.

6.3 Draft Indian Standard – Square Baler Machine

The FAD 11 committee noted the draft (*see* Annex 13 of the agenda) on square baler machine submitted by Shri Sujit Hinge, CNH India. The committee after due deliberation decided to create a working group (WG 4) to review the above-mentioned draft. The composition of the WG is as follows:

1. Dr. Surendra Singh, AMMA-India (Project Leader)
2. Shri Sujit Hinje, CNH
3. Shri Chandrashekhar Deshmukh, John Deere
4. Shri KP Singh, CLAAS
5. Shri Parag, Shaktiman

The committee requested the WG to modify the draft on square baler aligning to draft test code developed for round baler machine and submit the draft by 31 August 2023. The draft upon receipt will be circulated as P draft among the committee members for commenting.

6.4 Draft Indian Standard on Drone Seeder and Drone Sprayer

The committee noted the information provided in 6.4 of the agenda regarding ongoing work related to the development of standard on Drone Seeder and Sprayer under FAD 11/P 7. Dr. R Kavitha, Convenor of FAD 17/P7 apprised the committee about the draft prepared on Drone seeder, which will be taken up in the panel in its next meeting.

Dr. SM Nalawade, Head, FMPE Dept., MPKV, Rahuri apprised the committee that, researchers at their department have prepared some SOPs for spraying chemicals on different types of crops using drone sprayer and requested the committee to be a part of FAD 11/P 7 for contribution in preparation of standard on Drone Seeder and Sprayer.

Further, Shri Jatin Patel, ASPEE group apprised the committee that they have also worked on a project with Dapoli University where drones were used for orchard spraying. Shri Jatin also requested participation in FAD 11/Panel 7.

Dr. Rajaram Tripathi, AIFA also requested to the FAD 11/P 7 panel, that practical problems faced by farmers while using drone sprayer and drone seeder should also be considered while creating standard. Noting this, the committee requested FAD 11/P7 to take inputs of farmers through AIFA as well while drafting the standard on above subject.

The committee approved the request of Dr. Nalawade and Shri Jatin Patel to be a part of the panel. Further, the committee requested the panel to expedite the work and stick to the timeline decided for completion of project.

The committee also noted the information provided in 6.4.3 of the agenda regarding **IS 17799: 2022- Unmanned Aerial Vehicles (UAV)—Drones for Agricultural Purposes under TED Dept., BIS** which includes guidelines for drone and spraying system and does not cover all the technical aspects related to spraying system attached to drone. The committee after due deliberation decided to initially come up with a draft and depending upon the technical content, the committee in future may request TED Dept to shift IS 17799 to self or propose for withdrawal of the standard if any duplication would be there.

After due deliberation and understanding the importance of subject, the committee finalized the project completion timeline as mentioned below and requested the Panel to expedite and complete its task within the timeline.

Project Timeline:

Subject	Total Time	P-Draft	WC	Finalisation	Publication
Drone Seeder	12 Months	September 2023	February 2023	May-24	July-24
Drone Sprayer	12 Months	September 2023	February 2023	May-24	July-24

6.5 Draft Indian Standard on Electric Tractor

The committee noted the information provided in 6.5 of the agenda regarding development of the standard on Electric tractor and progress made. The committee after due deliberation suggested that, development of the test code and testing of Electric Tractors should go parallel and requested CFMTTI, Budni to test the Electric Tractors submitted for testing and generate some test data which could be very useful for the drafting the test code.

Comment received from Shri Chakradhar V. Chimote, CFMTTI Bundi on Minutes of 24th FAD 11 Meeting circulated on 25 July 2023 is as follows :-

*“With reference to the **item No. 6.5 of MoM** attached with your e-mail, dated 25.07.2023 on the subject cited above and requested this institute to "test electric tractors submitted for testing and generate some test data which could be very useful for drafting the test code". In this connection, I am directed to convey that there is no provision available of generating the data for drafting the test code as per our mandate and therefore it would be very appropriate if the electric tractor manufacturers may generate the data required for drafting this test code and submit the same to the BIS/Panel Convener.*

Further, it is also clarified that commercial testing of electric tractors is not permissible in absence of the test codes. The institute is ready to conduct confidential testing of electric tractors if submitted by the manufacturers and the confidential report shall only be released. The test results reported in the confidential test report cannot be shared to anybody except the applicant.”

During the meeting it was also deliberated that, initial focus should be on development of standard on Test Code for Electric Tractor based on which initial testing of Electric Tractors can be done. Later on, when sufficient data are generated, Minimum Performance Standards will be developed.

The committee noted the identified experts (given below) in the field of Electric Automobiles and requested BIS Secretariat to make a communication to include them in the WG on Electric Tractor (**WG 1**).

- a) Automotive Research Association of India, Pune
 - Shri A.A. Deshpande, Dy Director

- Shri Abhijit Mulay, AED
- b) International Centre of Automotive Technology, Manesar
 - Shri Vikas Sadan
 - Shri Deepak Joshi

After due deliberation and understanding the importance of subject, the committee finalized the project completion timeline as mentioned below and requested the WG to expedite and complete its task within the timeline.

Project Timeline:

Subject	Total Time	P-Draft	WC	Finalisation	Publication
Electric Tractor-Test Code	12 Months	September 2023	February 2023	May-24	July-24

6.6 Draft Indian Standard – Electrostatic Sprayer

The committee noted information provided at 6.5 of agenda and the draft enclosed at Annex 14 of the agenda submitted by Shri Bikram Jyoti and Shri Deshmukh on Electrostatic Sprayer.

The committee accepted the proposal of **WG 3** for adoption of of **ISO 25358:2018** “Crop protection equipment — Droplet-size spectra from atomizers — Measurement and classification” which specifies procedures for classifying droplet size spectra that can be refereed in the electrostatic sprayer standard and after due deliberation decided to send the draft into wide circulation for period of 30 days.

After due deliberation and understanding the importance of subject, the committee finalized the project completion timeline as mentioned below and requested the **WG 3** to expedite and complete its task within the timeline.

Project Timeline:

Subject	Total Time	P-Draft	WC	Finalisation	Publication
Electrostatic Sprayer	12 Months	September 2023	February 2023	May-24	July-24

The committee requested the WG to submit the draft with necessary modifications as suggested by FAD 11: 01 Sub-committee within a period of 1 months, which upon receipt will be circulated among the members of Sub-committee for review. The draft, then will be circulated as P-draft along the committee members for a period of 21 days for commenting.

6.7 Draft Standard on High Clearance E-Sprayer - Specifications and Test Methods

The committee noted the information provided in 6.6 of the agenda and after due deliberation decided that to drop the subject as of now based on the inputs received from FAD 11: 01 Sub-Committee. Dr. Mukesh Jain, Director, NRFMTTI apprised the committee that, these kinds of sprayers mounted Electric based Prime Movers are being tested and the applicant along with machine submits test reports for batteries and motors certified by third party lab.

Following up with the recommendation of FAD 11: 01 Sub-committee, the committee decided to take up the subject again if required, once NRFMTTI releases the test report for the above machine.

7 NEW WORK ITEM PROPOSAL

7.1 Pneumatic Planter for Cotton Seeds

The committee after due deliberation decided to develop standard on Pneumatic Planters for different types of seeds (small and large) rather than just limiting to cotton seeds. Further, the committee allocated the work to WG 2 “Panel to formulate Indian Standards on Cotton farming Mechanisation” (see 2.4 S.No. 6)

7.2 Telematic Technology in the Agricultural Machinery

The committee noted the requested received from Shri Sujit Hinge, CNH Industrial (India) Pvt. Ltd., for development of standard on the telematic technology in the agricultural machinery to define its test procedure & technical requirements.

Further, Shri Hemant Divekar, Chairman, Technical Committee-TMA, apprised the committee regarding their discussion with Ministry of Agriculture about geotagging of Agricultural Machinery which is being sold to farmers through subsidy scheme. Shri Hemant apprised the committee, that the matter is yet to be discussed at TMA and after discussion it would be put up to FAD 11 committee for standardisation.

Further, the committee was apprised to the fact that, ISO standards are also available relating to the above subject which can also be referred. Those are

1. **ISO 12188-1:2010** — Tractors and machinery for agriculture and forestry — Test procedures for positioning and guidance systems in agriculture — Part 1: Dynamic testing of satellite-based positioning devices
2. **ISO 12188-2:2012** — Tractors and machinery for agriculture and forestry — Test procedures for positioning and guidance systems in agriculture — Part 2: Testing of satellite-based auto-guidance systems during straight and level travel

The committee requested to BIS Secretariat to circulate the above two ISO standards among the members of TMA.

ITEM 8 REVIEW OF INDIAN STANDARDS

8.1 The committee in its 24th meeting of FAD 11 noted that, there are 122 Indian Standards due for review under 5 yearly review policy.

8.2 Research projects to be taken up for inclusion of empirical data and insights

In its 24th meeting of FAD 11, the committee noted the information provided under 8.2 of the agenda and requested the members of the committee for identification of the need/areas for Research projects to be taken up for inclusion of empirical data and insights which can support the standardization activity under FAD 11.

The committee observed that Research Project can be taken up for generating data for performance requirements of the Electrostatic Sprayer which is a very new subject undertaken by committee for standardization and limited research work is available.

8.3 Provision for archiving of Indian Standards

The committee noted the information provided under 8.3 of the agenda and requested all the panels to identify such Indian Standards under their respective scope to be considered for archiving.

8.4 Revision of Pre-2000 Indian Standards on Tractors and Power Tillers

In its 24th meeting of FAD 11 held on 6th July 2023 in continuation to the meeting held on 23rd June, the committee took the following decision regarding standards on tractors & power tillers which were allocated to FAD 11/P5 (discussed in its 3rd meeting) for review and other standards which were due for review as per BIS's 5 yearly review policy.

8.4.1 Review Of Indian Standards Pertaining to Tractors And Power Tillers allocated to FAD 11/P 5

S. No.	IS to be reviewed	Decision of the Committee, FAD 11 (24 th Meeting held on 6 th July)
1.	IS 11442 : 1996 Agricultural tractors – Operator's field of vision -test procedures	Noting that no comments were received on the circulated P-draft [FAD11(22346)P], the committee decided to send the draft revision of IS 11442 into wide circulation for a period of 60 days for commenting.
2.	IS 11082: 1984 Technical requirements of agricultural tractors for wet land cultivation	Noting that no comments were received on the circulated P-draft [FAD11(22336)P], the committee decided to send the draft revision of IS 11082 into wide circulation for a period of 60 days for commenting.
3.	IS 12180 (Part 1) : 2000/ISO 5131: 1996 Tractors and Machinery for Agriculture and Forestry - Noise Measurement - Method of test : Part 1 Noise at the Operator's Position - Survey Method (First Revision)	The FAD 11/Panel 5 in its 3 rd meeting held on 30 May discussed on the fact that IS 12180 Part 1 and Part 2 talk about the method of test for noise measurement and does not include any tolerance limits for noise measurement. Further, it was highlighted by TMA that subject 1dB deduction from the final test results is applicable only for By Stander level procedure & being followed in CMVR via AIS 115 Part 2, clause 6.3.1. Similar provision is allowed worldwide type approval framework in European countries (EEC Directive - 74/151/EEC) & other automotive standards also.
4.	IS 12180 (Part 2) : 2000/ISO 7216: 1992 Tractors and Machinery for Agriculture and Forestry - Noise Measurement - Method of Test : Part 2 Noise Emitted When in Motion (First Revision)	As per current practice, for the commercial testing, IS 12180 Part 1 and Part 2 are used and for CMVR testing AIS 115 Part 1 and Part 2 are used. However, in Commercial testing Minimum performance applicable is as per CMVR rules. The panel noting the above two points and after due deliberation decided to keep IS 12180 (both parts) and AIS 115 (both parts) separate and to revise IS 12180 Part 1 and Part 2 by adopting ISO 5131: 2015 and ISO 7216: 2015 respectively. Observing all the above points, the committee in its 24 th meeting after due deliberation decided to revise IS 12180 (Part 1) & (Part 2) by adopting latest edition of ISO 5131 and 7216 and send the drafts into wide circulation for a period of 30 days. Further, the committee decided to convert AIS 115 (Part 1) & (Part 2) to separate Indian Standards and requested Shri Mohit Kumar to submit the draft before the next committee meeting.
5.	IS 9864 : 1981 Guidelines for Stocking Spare Parts of Agricultural Tractors	The committing noting that, the standard is not being used any more, after due deliberation decided for withdrawal of the standard.
6.	IS 11822 : 1986 Methods of test for Spark Arrester of Agricultural Tractors	The panel in its 3 rd meeting held on 22 may was apprised to the fact that, in a few agricultural tractors, spark arresters are used, such as when tractors supplied to airport authority of India, etc. (<i>Not for agricultural purpose</i>). Therefore, the panel proposed not to withdraw the standard and reaffirm as it is.

		Noting the recommendation of the panel, the committee decided to revise the standard in latest style and send into wide circulation for a period of 30 days.
7.	IS 6840 : 2013 Preventive Maintenance of Agricultural Wheeled Tractors - Code of Practice (First Revision)	The committee on recommendation of FAD 11/P 5 decided to send draft revision of IS 6840 (incorporating comments given by PAU) into wide circulation for a period of 60 days for commenting.
8.	IS 9164 : 1979 Guide for Estimating Cost of Farm Machinery Operation	<ol style="list-style-type: none"> 1. The committee noted the queries raised regarding the useful life of tractors, formulas used for the calculation of repair and maintenance cost of Agri Machines and justification provided by CFMTTI, Budni 2. However, during deliberation it was found that, all the references given by CFMTTI, Budni took it reference from IS 9164 itself. 3. Further, the committee was apprised to fact the equations mentioned for calculation of repair and maintenance of different agricultural machinery as mentioned in 4.3.1 of IS 9164 were taken from Donald Hunt Book "Farm Power and Machinery Management". 4. The committee agreed to the fact that a detailed study/research is needed to validate the formulas as given in 4.3.1 of IS 9164. 5. The committee also noted, nowadays to make calculations easy, repair and maintenance cost is taken as 5 % of the total cost of the machine. Therefore, after due deliberation the committee decided to keep the formulas as it is and given an option in the standard to take repair and maintenance cost as 5 % of the total cost of the machine.
9.	IS 12362 (Part 1) : 2007/ISO 6489-1: 2001 Agricultural Vehicles - Mechanical Connections Between Towed and Towing Vehicles : Part 1 Dimensions of Hitch - Hooks (Second Revision)	Noting that no comments were received on the circulated P-draft, the committee decided to send the draft revision of IS 12362 (Part 1) into wide circulation for a period of 60 days for commenting.
10.	IS 12953 : 1990 Drawbar for Agricultural Tractors - Link Type – Specification	Noting that no comments were received on the circulated P-draft, the committee decided to send the draft revision of IS 12953 into wide circulation for a period of 60 days for commenting.
11.	IS 11859 : 2004 Agricultural Tractors - Turning and Clearance Diameters - Methods of Test (First Revision)	Noting that no comments were received during wide circulation of draft revision of IS 11859 (identical adoption of IS 789-3), the committee after due deliberation the committee decided to send draft revision of IS 11859 for publication.
12.	IS 12239 (Part 1) : 2018/ISO 4254-1: 2013 Guide for Safety and Comfort of Operator of Agricultural Tractors and Power Tillers Part 1 General Requirements (Second Revision)	<ol style="list-style-type: none"> 1. The committee after due deliberation decided to adopt the amendment No. 1 issued to ISO 4254-1 : 2013 and change the title of IS 12239 (Part 1) in parallel to title of ISO 4254-1. 2. The committee requested members to share their feedback on circulated ISO 4254 series (other than Part 1 and Part 6) on the possibility of adoption (identical/modified/take assistance) of the ISO standards within a period on 30 days. 3. The committee requested Shri Mohit Kumar, IITL to submit their comments/feedback by 15 August 2023 on adoption of ISO 26322 -1 & 2 or creation of an indigenous standard which will either supersed IS 12239 (Part 2) or would be brought up as a new standard. 4. The committee noted that ISO 12100 : 2010 Safety of machinery — General principles for design — Risk assessment and risk reduction referred in ISO 26322 is already adopted under TED Dept. of BIS as IS 16819 : 2018. The committee requested BIS Secretarait to circulate the standard among the panel members.

13.	IS 12224: 1987 Method of Test for Hydraulic Power and Lifting Capacity of Agricultural Tractors.	As recommended by FAD 11/P 5, the committee after due deliberation decided to send the draft revision of IS 12224 submitted by Shri Mishra (excluding terms related to Electric Tractor) to wide circulation for a period of 60 days for commenting.
14.	IS 10743 : 1983 Method for Determination of Centre of Gravity of Agricultural Tractors	As recommended by FAD 11/P 5, the committee after due deliberation decided to send the draft revision of IS 10743 (major part taken from ISO 789-6 and additional test as mention in Clause 8, 8.0 to 8.9 of IS 10743: 1983) to wide circulation for a period of 60 days for commenting.
15.	IS 15925 : 2012/ISO 11449 : 1994 Walk - Behind Powered Rotary Tillers - Definitions, Safety Requirements and Test Procedures	The committee NOTED that IS 15925 is an identical adoption of latest edition of ISO standard i.e., ISO 11449 which was reviewed in 2022. Therefore, the standard needs no review as of now
16.	IS 6690 : 1981 Specification for Blades for Rotavator for Power Tillers (First Revision)	See 5.3
17.	IS 13064 : 1991 Power Tillers – Installation and Preventive: Maintenance – Guidelines	On recommendation of FAD 11/P5, the committee after due deliberation decided to send the draft revision of IS 13064 with necessary editorial changes into wide circulation for a period of 60 days for commenting.
18.	IS 9935 : 2002 Power Tiller - Test Code (Second Revision)	In its, 3 rd meeting of FAD 11/P5, The panel noted the test code for power tiller is very old and need to be aligned with IS 13539: 2018 Power Tiller – Recommendations on Selected Performance and Other Characteristics (<i>Second Revision</i>) and requested Shri Ganesh Kumar to review the standard and submit the draft revision within a period of 1 month. In its 24 th meeting of FAD 11, the committee requested Shri Ganesh Kumar, PTAI to submit the draft revision or comments on IS 9935 by 15 August 2023 , which upon receipt will be wide circulated for a period of 60 days for commenting.
19.	IS 11858 : 1986 Specification for Handle Grip for Power Tiller	On recommendation of FAD 11/P5, the committee after due deliberation decided to send the draft revision of IS 11858 with necessary editorial changes to wide circulation for a period of 60 days for commenting.

8.4.2 Revision of Standards Related to POWER TILLERS

The committee decided to reaffirm all the Indian Standards pertaining to agricultural tractors which were due for review as per BISs 5 yearly review policy and simultaneously taking them up for review as per the decision of the committee tabulated below:

S. No.	IS No./Title	Decision of the Committee, FAD 11 (24 th Meeting held on 6 th July)
1.	IS 10282 : 1982 Specification for Cage Wheel for Power Tillers	The committee noted that, revised draft received from AMMA-India is already approved to be sent into wide circulation. The draft is under Process at BIS Secretariat.
2.	IS 10747 : 1983 Dimensions of Hitch for Power Tillers	The committee requested Shri Ganesh Kumar, PTAI to submit the draft revision or comments on IS 10747 by 15 August 2023, which upon receipt will be wide circulated for a period of 60 days for commenting.
3.	IS 13539 : 2018 Power Tiller – Recommendations on Selected Performance and Other Characteristics (<i>Second Revision</i>)	The committee requested Shri Ganesh Kumar, PTAI to submit the draft revision or comments on IS 10747 by 15 August 2023, which upon receipt will be reviewed by the newly constituted Panel Panel on Power Tillers.
PRE-2000 and Post -2000		

4.	IS 11905 : 1986 Specification for Shaft Assembly for Rotavator for Power Tiller	On recommendation of FAD 11/P 5, the committee after due deliberation decided to send the draft revision of IS 11905 with necessary editorial changes to wide circulation for a period of 60 days for commenting.
5.	IS 10806 : 2003 Trailers for Power Tillers - Specification <i>First Revision</i>	The standard was last reviewed in 2021 and is Post 2000, therefore no action required as of now.

8.4.3 Revision of standards related to AGRICULTURAL TRACTORS:

The committee decided to reaffirm all the Indian Standards pertaining to agricultural tractors which were due for review as per BISs 5 yearly review policy and simultaneously taking them up for review as per the decision of the committee tabulated below:

S.No.	IS No.	Allocated to/Decision Taken
To be Reviewed Under 5 Yearly Review Policy/PRE-2000		
1.	IS 9939 : 1981 Glossary of Terms Relating to Agricultural Tractors and Power Tillers	Shri Mohit Kumar, TMA
2.	IS 10740 : 1983 Recommendation for Operating Requirement for Power Take – Off Driven Implements	Shri Mohit Kumar, TMA apprised the committee that the standard was published in 1983 taking assistance from SAEJ 721 : 1980 which later on got withdrawn. As the standard is now not being referred and other standards are already available for reference, therefore the committee decided to withdraw the IS 10740.
3.	IS 10273 : 1987 Guidelines for Declaration of Power and Specific Fuel Consumption and Labelling of Agricultural Tractors <i>First Revision</i>	Shri Mohit Kumar, TMA
4.	IS 12062 : 1987 Method for Measurement of Exhaust Smoke Emitted by Agricultural Tractors	Shri Mohit Kumar, TMA
5.	IS 9980 : 1988 Guidelines for Field Performance and Haulage Tests of Power Tillers <i>First Revision</i>	SRFMTTI, Anantpur
6.	IS 12363 : 1988 Recommendation on Track Width of Agricultural Tractors	The standard was published in 1988 taking assistance from ISO 4004 : 1983. Noting that ISO standard has not been revised. The committee decided to revise the standard in latest style with necessary editorial changes and send into wide circulation for a period of 60 days.
7.	IS 10274 : 1993 Agricultural Wheeled Tractors Maximum Travel Speed – Method of Determination <i>First Revision</i>	Shri Mohit Kumar, TMA
8.	IS 11081 : 1993 Agricultural Tractors - Half Cage Wheel - Specification <i>First Revision</i>	Shri Mansingh Jagdale, John Deere
9.	IS 13642 : 1993 Agricultural Tractors – Silencers Technical Requirements	The requirement for silencers is already covered in AIS 115 Part 1 & 2. Therefore, the committee decided to reaffirm the standard as of now and whenever, the AIS 115 would be converted to Indian Standard, IS 13642 would be withdrawn.
10.	IS 12061 : 1994 Agricultural Tractors – Braking Performance - Method of Test <i>First Revision</i>	Shri Mohit Kumar, ITL and Shri KP Singh, CLAAS
11.	IS 6847 : 1995 Code of Practice for Installation of Agricultural Wheeled Tractor <i>First Revision</i>	Shri Mohit Kumar apprised the committee, that the standard is sometime being referred to develop product manual by Tractor manufacturers. Noting, that the standard is not much needed and revision is not necessary at the moment, the committee decided to archive the standard.
12.	IS 14683 : 1999 Agricultural Tractors and Machinery - Lighting Devices for Travel on Public Roads	AIS 030 standard is available which has a reference of IS 14683, the committee requested Shri Mohit Kumar the technical content of standard and share his feedback. As per feedback of Shri Mohit Kumar, the standard either will be withdrawn or archived.

13. IS 9253 : 2013 Agricultural wheeled tractors - Field performance and haulage tests - Guidelines <i>Third Revision</i>	CFMTTI, Budni
14. IS 12226 : 1995 Agricultural Tractors - Power Tests for Drawbar - Test Procedure <i>First Revision</i>	<p>In preparation of this standard assistance was derived from ISO 789-9 : 1990 Agricultural tractors — Test procedures — Part 9: Power tests for drawbar and ISO 789-9 got revised in 2018.</p> <p>ISO 789-9 was circulated among the members of FAD 11/P 5 and comments were received from <i>CFMTTI, Budni to keep current standard only as per testing procedure being followed.</i></p> <p>Therefore, the committee after due deliberation requested TMA and CFMTTI to rediscussed IS 12226, along with ISO 789-9 and submit their feedback on possibility of adoption of ISO 789-9 by 15 August 2023.</p>
15. IS 12036 : 1995 Agricultural Tractors – Test Procedures – Power tests for Power Take Off <i>First Revision</i>	<p>In preparation of this standard assistance was derived from ISO 789-1 : 1990 Agricultural tractors — Test procedures — Part 1: Power tests for Power Take off and ISO 789-1 got revised in 2018.</p> <p>ISO 789-1 was circulated among the members of FAD 11/P 5 and comments were received from <i>CFMTTI, Budni to keep current standard only as per testing procedure being followed.</i></p> <p>Therefore, the committee after due deliberation requested TMA and CFMTTI to rediscussed IS 12036, along with ISO 789-1 and submit their feedback on possibility of adoption of ISO 789-1 by 15 August 2023.</p>
16. IS 12239 (Part 2) :1999 Tractors and Machinery for Agriculture and Forestry - Technical Means for Ensuring Safety Part 2 Tractors <i>First Revision</i>	<p>The committee noted that IS 12230 (Part 3) was based on ISO 4252: 1992 “Agricultural tractors — Operator's workplace, access and exit — Dimensions” and ISO 4254-3 : 1992 “Tractors and machinery for agriculture and forestry — Technical means for ensuring safety — Part 3: Tractors”. and was technically equivalent to ISO 4252: 1992.</p> <p>However, ISO 4252 got revised in 2007 and ISO 4254-3: 1992 is withdrawn and replaced by ISO 26322 -1 and ISO 26322-2.</p> <p><i>The committee after due deliberation decided to revise IS 12239 (Part 2) taking assistance from ISO ISO 26322 -1 and ISO 26322-2 and also taking content from ISO 4252 : 2007.</i></p>
17. IS 12239 (Part 3) :1988 Guide for Safety and Comfort of Operator of Agricultural Tractors and Power Tillers Part 3 Requirements Relating to Power Tillers	Allocated to SRFMTTI, Anantpur for review.
18. IS 16952 (Part 1) : 2018/ISO 3776-1 : 2006 Tractors and Machinery for Agriculture - Seat Belts Part 1 Anchorage Location Requirements	These Indian Standards were due for review for review. As all these Indian Standards are identical adoption of latest edition of ISO standards, the committee after due deliberation, decided to
19. IS 16952 (Part 2) : 2018/ISO 3776-2: 2013 Tractors and Machinery for Agriculture - Seat Belts Part 2 Anchorage Strength Requirements	REAFFIRM all the standards
20. IS 16952 (Part 3) :2018/ISO 3776-3 : 2015 Tractors and Machinery for Agriculture - Seat Belts Part 3 Requirements for Assemblies	

21. IS 11821 (Part 2) :2018/ISO 5700: 2013 Method of Tests and Acceptance Conditions for Protective Structures of Agricultural Tractors Part 2 Static Test <i>Second Revision</i>	
22. IS 11821 (Part 1): 2019/ISO 3463: 2006 Tractors for Agriculture and Forestry - Roll – Over Protective Structures ROPS Part 1 Dynamic Test Method and Acceptance Conditions <i>Second Revision</i>	
23. IS 17231 : 2019/ISO 730 : 2009 Agricultural Wheeled Tractors - Rear - Mounted Three – Point Linkage - Categories 1N 1 2N 2 3N 3 4N and 4	
PRE-2000	
24. IS 12180 : 1987 Method for Noise Measurement of Agricultural Tractors	Noting that IS 12180 (Part 1) and IS 12180 (Part 2) are already available which talk about the method of noise measurement, the committee after due deliberation decided to withdraw the IS 12180
25. IS/ISO 789-8: 1991/ISO 789 : PART 8 : 1991 Agricultural Tractors – Test Procedures Part 8 Engine Air Cleaner	The Committee noted that IS is identical adoption of ISO 789-9 under single numbering and was reviewed in 2021. Further, ISO standard was also reviewed in 2023 and current version remains. No action required.
26. IS 8265 : 1996 Agricultural Tractors - Guards for Power Take - Off PTO Drive - Shafts <i>Second Revision</i>	The committee noted that IS 8265 covers strength and wear tests for guards for PTO and was based on ISO 5674-1 : 1992 and ISO 5674-2 : 1992. ISO 5674-1,2 got revised in 2004 and merged as ISO 5674. ISO 5674 is under revision (DIS Stage). The committee requested BIS Secretariat to circulate the ISO/DIS 5674 among the committee members for review.
POST-2000	
27. IS 8213 : 2000 Agricultural Tractor Trailer -Specification <i>Third Revision</i>	These Indian Standard were recently published/recently reviewed. Therefore, the committee took no action.
28. IS 14980 (Part 2) :2001/ISO 8759-2: 1998 Agricultural Wheeled Tractors - Front - Mounted Equipment Part 2 Stationary Equipment Connections	
29. IS 17408 (Part 1) :2020/ISO 16231-1: 2013 Self - Propelled Agricultural Machinery - Assessment of Stability Part 1 Principles	
30. IS 17409 (Part 2) :2020/ISO 16231-2: 2015 Self - Propelled Agricultural Machinery - Assessment of Stability Part 2 Determination of Static Stability and Test Procedures	
31. IS 12343 : 2021 Agricultural tractors – Operators seat technical requirements	
32. IS 8133 : 2021 Guidelines for Actuating Forces, Location and Operation of Operator Controls on Agricultural Tractors and Self-propelled Machinery (Second Revision)	Under process at BIS Secretariat. Some amendments to be sent into wide circulation as decided in the 23 rd meeting of FAD 11. <i>(Please see 10.2 of MOM of FAD 11 23rd Meeting held on 23 January 2023).</i>
	The committee requested BIS Secretariat to expedite the process.

8.5 Revision of Pre-2000 Indian Standards on Plant Protection Equipment

In its 24th meeting of FAD 11 held on 6th July 2023 in continuation to the meeting held on 23rd June, the committee took the following decision regarding standards on Plant Protection Equipment which were allocated to FAD 11:01 Sub-Committee (discussed in its 6th meeting) for review and other standards which were due for review as per BIS's 5 yearly review policy.

S.No.	IS No./Title	Decision of the Committee, FAD 11 (24 th Meeting held on 6 th July)
Pre 2000 Indian Standards Related to PPE		
1.	IS 1970 : 1995 Crop Protection Equipment - Hand- Operated Compression -Knapsack Sprayer – Specification <i>Fifth Revision</i>	The Committee noted that the drafts have been sent to publication dept., BIS for providing clearer quality images of the figures and requested BIS Secretariat to expedite the process to send the document for publication
2.	IS 1971 : 1996 Crop Protection Equipment - Hand- Operated Stirrup - Type Sprayer - Specification <i>Fifth revision</i>	
3.	IS 3062 : 1995 Crop Protection Equipment -Rocker Sprayer - Specification <i>Fourth Revision</i>	The committee requested Dr. KN Agrawal to submit the revised draft by 31 August 2023, which upon receipt with necessary editorial changes will be sent for wide circulation for a period of 60 days for commenting after the approval of Chairperson, FAD 11.
4.	IS 3652 : 1995 Crop Protection Equipment – Foot Sprayer - Specification <i>Fourth Revision</i>	Member Secretary, FAD 11 apprised the committee about the revised draft submitted by Dr. KN Agrawal. The committee after due deliberation decided to send the draft revision of IS 3652 with necessary editorial changes into wide circulation for a period of 60 days for commenting.
5.	IS 3906 : 1995 Crop Protection Equipment – Hand operated Knapsack Sprayer Piston Type	The committee noted that draft revision submitted by Dr. PU Sahare was discussed during 6 th meeting of FAD 11:01 Sub-Committee on 22 May. The committee after due deliberation decided to send the draft revision of IS 3906 into wide circulation for a period of 60 days for commenting.
6.	IS 5135 (Part 1) :1994 Specification for Hand – Rotary Duster Part 1 Belly – Mounted Type <i>Second Revision</i>	The committee noted that IS 5135 (Part 1) was proposed to FADC for withdrawal. But lately it came to know that, there exist one licensee (Adarsh Plant Protect) against the standard. Upon recommendation of FAD 11: 01, the committee decided not to take up the standard for review as of now, until any request is received from the licensee.
7.	IS 7593 (Part 1) :1986 Specification for Power – Operated Pneumatic Sprayer - Cum – Duster Part 1 Knapsack Type <i>First Revision</i>	The committee requested Dr. KN Agrawal to submit the draft by 31 August 2023.
8.	IS 10134 : 1994 Methods of Test for Manually - Operated Sprayers <i>First Revision</i>	The committee was apprised to the fact that, standard for all the manually operated sprayers are into revision and test method is covered in those standards itself. The committee after due deliberation decided, that after the publication of those standards, IS 10134 shall be withdrawn, therefore it will not be taken up for review.
9.	IS 11429 : 1985 Methods for Calibration of Sprayers	The task to review the standard has been given to Shri Chandrashkhar Deshmukh. The committee requested Shri Deshmukh to submit the draft or comments by 31 August 2023 which upon receipt will be sent into wide circulation for a period of 60 days.

<p>10. IS 14459 : 1997 Crop Protection Equipment - Battery Operated Rotary Atomiser Disc Type ULV sprayer - Specification</p>	<p>Upon recommendation of FAD 11: 01 Sub-Committee, the committee after due deliberation decided to revise the standard in latest style with necessary editorial changes and send into wide circulation for a period of 60 days .</p>
<p>11. IS 12482 : 1988 Methods of Test for Manually Operated Dusters</p>	<p>In last meeting of FAD 11, the committee recommended for revision of standard in latest style of IS. The committee requested BIS Secretariat to expedite the process.</p>
<p>12. IS 14855 (Part 1) : 2000 Plant Protection and Vector Control Equipment – Fogging Machines - Specification Part 1 Pulse - Jet - Type thermal Fogger</p>	<p>The committee noted as per current scenario the equipment is not much used for agricultural purpose and not fall under FAD 11 scope. However, as no other committees deal with such equipment, the committee decided to retain the standards.</p>
<p>Post 2000 Indian Standards Related to PPE</p>	
<p>13. IS 14855 (Part 2) :2001 Plant Protection and Vector control Equipment - Fogging Machines - Specification Part 2 Air – Blower Type Thermal Fogger</p>	<p>It was also noted that, both the standards were reviewed in 2021 and would be due for review again in 2026. However, as the standards are very old, the committee requested BIS Secretariat to take comments/inputs from ASPEE Group, and Fogger India Pvt Ltd on updating these standards.</p>
<p>14. IS 12239 (Part 6) :2019 ISO 4254-6: 2013 Agricultural Machinery – Safety Part 6 Sprayers and Liquid Fertilizer Distributors</p>	<p>In 23rd meeting of FAD 11, the committee decided to adopt latest edition of ISO 4254-6 (2020 Edition) as revision of IS 12239 (Part 6). The committee requested BIS Secretariat to expedite the process.</p>
<p>15. IS 15921 : 2011 /ISO 14710:1996 Equipment for Crop Protection - Air - Assisted Sprayers - Dimensions of Nozzle Swivel Nuts</p>	<p>Noting that no comments were received during P-draft circulation, the committee after due deliberation decided to send the draft revision of IS 15921 into wide circulation for a period of 60 days.</p>

8.6 Revision of Pre-2000 Indian Standards on Agricultural Machinery (Tillage Machinery, Sowing Machinery, Harvesting Machinery and Other Implements/Tools)

The committee noted the list of Pre-2000 Indian Standards other than Tractors, Power Tillers and Crop Protection equipment (enclosed at *Annex 18 of the agenda*) and decided to allocate those to FAD 11/Panel 3 for review.

In its 24th meeting of FAD 11, the committee noted the proposal of FAD 11/P 3 for withdrawal of several Indian standards (given below) related to gardening and forestry tools.

The committee after due deliberation came to the conclusion that, tools mentioned in the IS on gardening and forestry tools listed below are outdated and not being manufactured or new advance tools/power operated tools available in the market. Therefore, the committee recommended for withdrawal of these standards.

However, before putting proposal to FADC for withdrawal, the committee requested BIS Secretariat to again circulate the standards among the committee members for a period of 7 days and if no comments received from any member, the standards will be withdrawn after the approval of FADC.

S.No.	IS No./Title
1.	IS 13151: 1991 Forestry Tools - Two Men Log Tongs – Specification
2.	IS 12651: 1989: Forestry Tools - Setting Anvil For Raker Toothed Two - Men Cross Cut Saws – Specification
3.	IS 12163: 1967: Forestry Tools - Specification For Cant Hook
4.	IS 12164: 1987: Forestry Tools - Specification For Log Tongs
5.	IS 12696 : 1989 Forestry Tools - Setting Pliers, Bow Saw Blade Specification
6.	IS 12627: 1969: Forestry Tools - Loop Handles, Two Men Cross Cut Saws – Specification
7.	IS 12653: 1989: Rubber Tapping Tools – Coagulation Tray – Specification
8.	IS 12652: 1989: Forestry Tools - Raker Adjuster – Cum – Setting Iron For Two –Men Cross Cut Saws – Specification
9.	IS 13378:1992 Forestry Tools–Felling Lever–Specification
10.	Is 12698: 1989 Forestry Tools - Tree Marking Digit Set – Specification
11.	IS 12697: 1989 Forestry Tools - Setting Hammer, Raker Toothed Two-Men Cross Cut Saws—Specification
12.	IS 12703: 1989 Forestry Tools - Tree Marking Hammers – Specification
13.	IS 12704:1989 Forestry Tools–Wooden Jointer For Bow Saw Blade- Specification
14.	IS 13376: 1992 Forestry Tools – Debarking Spud –Specification
15.	IS 13377: 1992 Forestry Tools -Shrub Cutting Knife-Specification

16.	IS 13485 (Part 2): 1998 Forestry Tools – Stalk Puller – Specification Part 2 Heavy Duty
17.	IS 13485 (Part 1): 1992 Forestry Tools – Stalk Puller – Specification Part 1 Light Duty
18.	IS 13821: 1993 Forestry Tools – Wooden Filing Vice – Specification
19.	IS 14524: 1998 Forestry Tools–Dibble Iron– Specification
20.	IS 14526: 1998 Forestry Tools–Plant Carrier– Specification

ITEM 9 REVISION OF ISO ADOPTED STANDARDS

S.No.	IS No./Title	Status	Decision of FAD 11 (24 th Meeting held on 23 rd June)
1.	IS 14980 (Part 1) : 2001/ISO 8759-1: 1998 Agricultural Wheeled Tractors - Front - Mounted Equipment : Part 1 Power Take - Off and Three - Point Linkage	In its 3 rd Panel Meeting of FAD 11/P 5 BIS Secretariat apprised the panel that, while processing the document for wider circulation, some observations were made listed as follows: - ISO 8959-1 : 1998 has been revised and trifurcated as ISO 8959-1 : 2018 Agricultural tractors — Front-mounted equipment — Part 1: Power take-off: Safety requirements and clearance zone around PTO ISO 8959-3 : 2018 Agricultural tractors — Front-mounted equipment — Part 3: Power take-off: General specifications and location ISO 8759-4 : 2018 Agricultural tractors — Front-mounted equipment — Part 4: Three-point linkage Other part of IS 14980 i.e. Part 2 is and identical adoption of IS 8759-2 : 1998 Agricultural wheeled tractors — Front-mounted equipment — Part 2: Stationary equipment connection which is latest edition. <i>The panel noting the proposal of BIS Secretariat, after due deliberation decided to revise IS 14980 (Part 1) by adopting three parts of ISO 8959 series i.e. Part 1, Part 3 and Part 4.</i>	The committee after due deliberation decided to revise IS 14980 (Part 1) by adopting ISO 8959-1 : 2018, ISO 8959-3 : 2018 and ISO 8759-4 : 2018 as IS 14980 Part 1, Part 2 & Part 4 respectively. The committee decided to send the draft revision into wide circulation for a period of 30 days for commenting.
2.	IS 8132 : 1999/ ISO 3600 Tractors and Machinery for Agriculture and Forestry, Powered Lawn and Garden Equipment - Operator's Manuals - Content and Presentation (First Revision)	The draft revision of IS 8132 was sent into wide circulation for a period of 30 days. However, no comments were received. The committee may consider the document to be sent into publication.	As no comments were receive on draft revision of IS 8132 during wide circulation, the committee decided to send the draft for publication.
3.	IS 13581 : 1993/ ISO 5007 : 1990 Agricultural Wheeled Tractors -Operator Seat – Laboratory Measurement of Transmitted Vibration	ISO standard got revised in 2003. The FAD 11/P 5 in its 3 rd meeting held on 30 may requested BIS Secretariat to circulate the latest version of the ISO Standard among the panel members for review. The ISO standards was circulated among the Panel 5 members.	The committee after due deliberation decided to revise IS 13581 by adopting latest edition of IS 5007 and send into wide circulation for a period of 30 days.

ITEM 10 INTERNATIONAL ACTIVITIES

10.1 Participation in 33rd Plenary Meeting of ISO/TC 23/SC 19

The committee noted the information provided under 10.1 of the agenda and appreciated the participation of the Indian Delegation in **33rd Plenary Meeting of ISO/TC 23/SC 19** on 25 May 2023 through virtual mode.

Further, the Chairperson, FAD 11 requested committee members to ensure effective participation in international activities by technical contribution in ISO ballots and participation in various working groups.

10.2 Status of ISO Balloting

The committee noted the excel sheet enclosed at **Annex 22 of the agenda** showing the status the ISO Balloting. The committee appreciated the contribution of Shri Chandrashekhar Deshmukh, John Deere for his consistent comments/votes on different ISO ballots and requested other members of the committee to kindly go through the ballots whenever circulated and provide comments on the ISO ballots pertaining to their expertise.

10.3 Creation of Mirror Working Groups for ISO related Activities

The committee noted the information provided in 10.3 of the agenda and after due deliberation decided to create mirror working groups parallel to the different sub-committees under ISO/TC 23 (**Tractors and machinery for agriculture and forestry**) in which FAD 11 hold a P- membership.

The composition of the different mirror working groups is as follows:

S.No.	ISO Technical Committee 23 (Participatory Member)	Mirror Working Group and their Composition
1.	Tractors and machinery for agriculture and forestry, ISO TC 23	MWG 1/FAD 11
2.	Safety and comfort, ISO TC 23/SC 3	MWG 2 1. Shri Chandrashekhar Deshmukh, John Deere 2. Shri Pratik Duraphe, John Deere The Committee requested members of FAD 11 to nominate their names to be part of the MWG 2 for effective participation in the ISO/TC 23/SC 3.
3.	Tractors, ISO TC 23/SC 4	MWG 3/FAD 11-P5 The members of FAD 11/Panel 5 “To Review and Formulated Indian Standards on Agricultural Tractors” will be the members of MWG 3 <i>(see composition at S.No. 5 of 2.4)</i>
4.	Equipment for crop protection, ISO TC 23/SC 6	MWG 4/FAD 11:01 The members of FAD 11: 01 Sub-Committee “Plant Protection Equipment” will be the members of MWG 4

5.	Equipment harvesting conservation, ISO TC 23/SC 7 for and	MWG 5/FAD 11-P 1 The committee earlier decided to disband Panel 1, as the subject under panel 1 was dropped. However, noting that there is no dedicated panel to deal Indian Standards pertaining to combine harvesters, the committee decided to merge Panel 1 and Panel 4 and constitute new panel parallel to MWG 5 which will deal with both ISO Ballots pertaining to ISOTC 23/SC 7 and Indian Standards on Combine Harvesters under convenorship of Dr. Mukesh Jain, Director, NRFMTTI. FAD 11/P 1 “To review and formulate Indian Standards related to Harvesters” = FAD 11/P1 + FAD 11/P 4
6.	Powered lawn and garden equipment, ISO TC 23/SC 13	MWG 6/FAD 11-P 3 The members of FAD 11/P 3 “To Formulate and Review Indian Standards on Gardening & Forestry Tools & Agricultural Implements” will be the members of MWG 6
7.	Agricultural Electronics, ISO TC 23/SC 19	MWG 7 1. Shri Chandrashekhar Deshmukh, John Deere 2. Shri Pratik Duraphe, John Deere The Committee requested members of FAD 11 to nominate their names to be part of the MWG 7 for effective participation in the ISO/TC 23/SC 19
ISO Technical Committee 23 (Observatory Member)		
8.	Common Tests, ISO TC 23/SC 2	The committee after due deliberation decided not to create any Mirror Working Group for Sub-Committees under ISO/TC 23 in which FAD 11 hold O-Membership.
9.	Operator controls, operator symbols and other displays, operator manuals, ISO TC 23/SC 14	The committee requested BIS Secretariat to only circulate those ballots which are important or necessary to give comment upon.
10.	Machinery for Forestry, ISO TC 23/SC 15	

Further, the committee authorized the Member Secretary to propose the composition of the above working groups in consultation with Chairperson, FAD 11 and the same would be circulated to the committee members for their suggestion within 15 days. The composition of the MWGs would then be finalized by the Chairperson, FAD 11.

10.4 Approval of Indian Delegates for Participation in 41st Plenary meeting of ISO/TC 23/SC 6

The committee approved the nomination of the following members as part of Indian Delegation for participating in the 41st Plenary Meeting of International Standardization Committee on Crop Protection Equipment, ISO TC 23/SC 6 is scheduled to be held from **11 - 15** September 2023 at Stockholm, Sweden.

1. Dr. KN Agrawal, Principal Scientist, ICAR-CIAE, Bhopal (Leader of Delegation)
2. Shri Chandrashkhar Deshmukh, John Deere India Pvt. Ltd., Pune

10.5 List of Published ISO Standards and Status of Adoption

The committee appreciated the efforts made by Member Secretary, FAD 11 for compiling of all the published/under development ISO standards by ISO Sub-Committees under ISO/TC 23 in which FAD 11 has a P and O Membership.

The committee requested BIS Secretariat to share the list among the committee members for review.

ITEM 11 UNIFORMITY IN SL.NO. OF VARIOUS AGRICULTURE MACHINERY/IMPLEMENTS BEING DISTRIBUTED UNDER VARIOUS SUBSIDY SCHEMES OF GOVERNMENT TO PROMOTE AGRICULTURE MECHANIZATION

The FAD 11 committee noted the information provided in item 11 of the agenda regarding the meeting held on 12/05/2023 under the Chairpersonship of Dr. V.N. Kale, Additional Commissioner with the members of the committee regarding uniformity in Sl. No. of various agriculture machinery/implements being distributed under various subsidy schemes of government to promote agriculture mechanization.

During the 24th meeting of FAD 11, Dr. VN Kale apprised the committee regarding various issues and outcome of above meeting as mentioned below:

1. Dr. Kale apprised the committee regarding the Uniform Coding System (through cutting serial number marking) of Agricultural Machine which supplied to farmers under various subsidy scheme and requested committee members also give suggestions. These serial number will act as unique ID through machine can be tracked (Manufacturer Name, Area of Sale, etc) from anywhere in the country.
2. Further, Dr. Kale focused on importance of ROPS provided on the agricultural tractors and safety of the operator.
3. To reduced repetitive testing of variants of a single agricultural machine, Dr. Kale requested for inclusion of provision of technical extension in all standards/test codes of various machinery.
4. There is a variation in BIS and AIS Standards, therefore requested for conversion of AIS standards to BIS standards.
5. Proposed for a separate standard on material composition (parts of machine engaged with soil and crops) of different agri-machines. It would be easier for testing authorities and manufacturer to refer a single standard for all the machines.

To the various issues raised by Dr. Kale, Dr. CR Mehta, Chairperson, FAD 11 responded:

1. Dr. Mehta requested Dr. Kale for issuance of order from Ministry of Agriculture for making ROPS mandatory for all agricultural tractors. Dr. Mehta also requested for circulation of guidelines for labelling of agricultural machines among the committee members for suggestions.
2. Dr. Mehta also apprised that, all the standards are being revised incorporating latest raw material specification and also requested manufactures in the committee to provide their inputs regarding

raw material being used for manufacturing of various machines to be incorporated in the standard while revising.

Following up with this, Shri Mitul Panchal, Chairman, AMMA-India also raised a point that, BIS codes are voluntary in nature, therefore all the manufactures are following BIS codes just to test their machinery for the purpose of subsidy which is approximately 20 % of the total agricultural machines sold in the market. Shri, Mitul requested that, Ministry of Agriculture should issue an order for mandatory compliance of Indian Standards for manufacturing every agricultural machinery.

Further, a query was also raised whether all the agricultural machines which are being tested at different SAUs and FMTTIs can have an ISI Mark. Addressing to this, Member Secretary, FAD 11 apprised the committee that different testing authorities and FMTTIs can be empanelled under BIS Laboratory Recognition Scheme (LRS) which was also proposed by BIS in the meeting held on **12 May 2023** regarding uniformity in Sl. No. of various agriculture machinery/implements.

Following up with this, the committee requested BIS Secretariat to arrange for a meeting of AMMA-India and different Testing Authorities & FMTTIs with Laboratory Recognition and Management Department of BIS for learning the application process for empanelment under LRS.

ITEM 12 PROPOSAL FROM AMMA INDIA

The committee noted the request received from AMMA-India, for inclusion of provision of Administrative Extension and Technical Extension in all the test codes for testing different machinery under FAD 11 and FAD 20.

The committee after due deliberation decided to incorporate the provision of Administrative Extension and Technical Extension in all test coded being revised to reduce the repetitive testing. Provision for technical extension will differ for different kind of machinery.

ITEM 13 ANY OTHER BUSINESS

Dr. KN Agrawal, Principal Scientist, Project Coordinator, AICRP on Ergonomics and Safety in Agriculture, Bhopal apprised the members regarding battery operated sprayers which are nowadays very common. Noting this, the committee requested FAD 11:01 Sub-committee “Plant Protection Equipment” to discuss the subject in their next meeting.

ITEM 14 TIME AND PLACE FOR THE NEXT MEETING

After due deliberation, the committee decided to hold its 25th meeting in the 4th week of October 2023 in Physical Mode at Bhopal or Pune. The exact date of the meeting will be finalised in consultation with Chairperson, FAD 11 later and will be communicated to members accordingly.

ANNEX-A

Attendance for the 24th Meeting of Agricultural Machinery and Equipment Sectional Committee FAD 11 held on 23 June 2023

Sl.No.	Organization Represented	Members
1.	ICAR – Central Institute of Agricultural Engineering, Bhopal	Dr. C. R. Mehta (<i>Chairperson</i> , FAD 11)
2.	Agriculture Machinery Manufacturers Association (AMMA), Pune	Dr. Surendra Singh
3.	ICAR - All India Coordinated Research Project on Ergonomics and Safety in Agriculture, Bhopal	Dr. K. N. Agrawal
4.	ICAR - All India Coordinated Research Project on Farm Implements and Machinery (AICRP-FIM), New Delhi	Dr. C. R. Mehta
5.	John Deere India Private Limited, Pune	Shri Chandrashekhar Deshmukh Shri Pratik Duraphe
6.	Tractor and Mechanization Association, New Delhi	Shri Hemant Divekar Shri Philip Koshy (<i>invitee</i>) Shri Mohit Kumar (<i>invitee</i>)
7.	Tirth Agro Technology Pvt. Ltd. 'Shaktiman', Bhunava, Gujarat	Shri Parag D Badgular (<i>invitee</i>)
8.	TI Clean Mobility Pvt. Ltd., Chennai	Shri SO Tyagi
9.	Head, Food and Agriculture Department, BIS	Smt. Suneeti Toteja
10.	Member Secretary, FAD 11, BIS	Shri Vikrant Chauhan
Members Joined Virtually		
11.	Agriculture Machinery Manufacturers Association (AMMA), Pune	Shri Mitul Panchal
12.	All India Farmers Alliance, New Delhi	Dr. Rajaram Tripathi Adv Apurva Tripathi
13.	ASPEE Agro Equipment Private Limited, Mumbai	Shri Jatin S. Patel Shri Gangadhar Varpe Smt. Smita Patel (<i>invitee</i>)
14.	Automotive Research Association of India, Pune	Shri A.A. Badusha
15.	CLAAS India Private Limited, Chandigarh	Shri Krishna Prabhakar Singh

16.	CNH Industrial India Private Limited, Pune	Shri Santhosh Rao Shri Sujit Hinge
17.	Central Farm Machinery Training and Testing Institute (CFMT&TI), Budni	Shri C. V. Chimote
18.	Consumer Guidance Society of India (CGSI), Mumbai	Dr. Sitaram Dixit
19.	Dasmesh Mechanical Works Private limited	Shri Sarbjeet Singh Panesar
20.	ICAR - Central Institute of Agricultural Engineering, Bhopal	Dr. Dilip Jat (YP)
21.	ICAR - All India Coordinated Research Project on Ergonomics and Safety in Agriculture, Bhopal	Dr. Rahul R. Potdar
22.	John Deere India Private Limited, Pune	Shri Anand Raj
23.	Kerala Agro Machinery Corporation Ltd. (KAMCO)	Shri P.C. Sajiman Shri Arun Kumar T.K.
24.	M/S Kubota Agricultural Machinery Ltd.	Shri Arun Kumar (<i>invitee</i>)
25.	Maharana Pratap University of Agricultural and Technology, Udaipur	Dr. Sanwal Singh Meena
26.	MPKV, Rahuri	Dr. Sachin Madhukar Nalawade
27.	Ministry of Agriculture, Department of Agriculture, New Delhi	Dr. VN Kale Shri Arvind Meshram
28.	Northeastern Region Farm Machinery Training and Testing Institute (NER-FMTTI) Biswanath Chariali	Dr P. P. Rao Shri SG Pawar
29.	Northern Region Farm Machinery Training and Testing Institute (NRFMT&TI), Hisar	Dr. Mukesh Jain Shri Sanjay Kumar
30.	Orissa Agriculture University, OUAT, Orissa	Dr. Deberaj Behera
31.	Punjab Agricultural University, Ludhiana	Dr. Mahesh Kumar Narang Dr. Rajesh Goyal
32.	Southern Region Farm Machinery Training and Testing Institute (SRFMT&TI), Anantapur	Smt. P Kamlabai
33.	Tamil Nadu Agricultural University, Coimbatore	Dr. R. Kavitha Dr. A. Surendra Kumar
34.	Tirth Agro Technology Pvt. Ltd. 'Shaktiman', Bhunava, Gujarat	Shri AN Reddy (<i>invitee</i>)

Attendance for the 24th Meeting of Agricultural Machinery and Equipment Sectional Committee FAD 11 held on 06 July 2023 in continuation to the meeting held on 23 June 2023.

Sl.No.	Organization Represented	Members
1.	ICAR – Central Institute of Agricultural Engineering, Bhopal	Dr. C. R. Mehta (<i>Chairperson</i> , FAD 11)
2.	Agriculture Machinery Manufacturers Association (AMMA), Pune	Dr. Surendra Singh
3.	ASPEE Agro Equipment Private Limited, Mumbai	Shri Gangadhar Varpe Dr. Narendra Kumar (<i>invitee</i>) Smt. Smita Patel (<i>invitee</i>)
4.	Captain Tractors Pvt. Ltd.	Shri Chirag A. Chandra (<i>invitee</i>)
5.	CLAAS India Private Limited, Chandigarh	Shri Krishna Prabhakar Singh
6.	ICAR - All India Coordinated Research Project on Ergonomics and Safety in Agriculture, Bhopal	Dr. K. N. Agrawal
7.	ICAR - All India Coordinated Research Project on Farm Implements and Machinery (AICRP-FIM), New Delhi	Dr. C. R. Mehta
8.	John Deere India Private Limited, Pune	Shri Anand Raj Shri Chandrashekhar Deshmukh
9.	Mahindra and Mahindra Ltd.	Shri Pradeep Shinde, Shri Jayant (<i>invitee</i>)
10.	MPKV, Rahuri	Dr. Sachin Madhukar Nalawade
11.	Northern Region Farm Machinery Training and Testing Institute (NRFMT&TI), Hisar	Dr. Mukesh Jain
12.	Punjab Agricultural University, Ludhiana	Dr. Rajesh Goyal
13.	Southern Region Farm Machinery Training and Testing Institute (SRFMT&TI), Anantapur	Smt. P Kamlabai Shri DC Mouli (<i>invitee</i>)
14.	Tractor and Mechanization Association, New Delhi	Shri Philip Koshy (<i>invitee</i>) Shri Mohit Kumar (<i>invitee</i>) Shri Mansingh Jagdale (<i>invitee</i>)
15.	Tirth Agro Technology Pvt. Ltd. 'Shaktiman', Bhunava, Gujarat	Shri Parag D Badgujar (<i>invitee</i>)
16.	TI Clean Mobility Pvt. Ltd., Chennai	Shri SO Tyagi
17.	Member Secretary, FAD 11, BIS	Shri Vikrant Chauhan

