

BUREAU OF INDIAN STANDARDS
MINUTES

Name of the Committee	No. of Meeting	Date	Time	Venue
Agricultural Machinery and Equipment Sectional Committee, FAD 11	27 th	2 July 2024 (Tuesday)	10:30 AM	Hybrid Mode Lal C Verman Hall, Bureau of Indian Standards, HQ, New Delhi

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 27th meeting of the committee. Shri Vikrant apprised the committee members regarding actions taken since the 26th meeting of the committee, various meetings of panel, publication of new standards and circulation of draft revisions. Requesting for support from the committee, Shri Vikrant urged for fruitful and conclusive deliberation on the issues raised in the agenda.

0.2 Opening Remarks by the Chairperson

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 its 27th meeting. Chairperson congratulated the experts for the newly published standards and appreciated the contribution made by all the experts of the committee and various panels. Dr. Mehta emphasizing importance of participating at international level, requested all the experts to provide comments/inputs on various ISO ballots circulated from time to time within their domain. He also requested, the respective convenors of WGs and Panels to pace up completion of development of draft standard on drone Sprayer, Electric Tractor, Electrostatic sprayer system. Further, appreciating a good participation in the meeting, Dr. Mehta urged the committee members to actively participate in the meeting.

ITEM 1 CONFIRMATION OF THE MINUTES OF THE TWENTY SIXTH MEETING

The committee confirmed the minutes of the 26th meeting of Agricultural Machinery and Equipment Sectional Committee, FAD 11 held on 28 February 2024 (through hybrid mode) as circulated vide our email dated 8 March 2024, 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 Composition of the Sectional Committee

2.2.1 The committee welcomed Shri Vivek in Personal Capacity and KisanKraft Ltd., Bangalore co-opted as new members of the Agricultural Machinery and Equipment Sectional Committee, FAD 11

2.2.2 Member Secretary apprised the committee, that updated nomination was sought from OUAT, Bhubaneswar via email dated 12 June 2024. However, no response has been received. The requested to send on last communication to OUAT, Bhubaneswar. In case no response is received, organization will be recommended to FADC for withdrawal.

2.2.3 The updated composition of Agricultural Machinery and Equipment Sectional Committee, FAD 11 is enclosed below at **Annex M1**:



Annex
M1_Compo.docx

2.3 Composition of Panels/WG Under the Committee

The committee noted the composition of the various Panels and WGs under FAD 11 enclosed at **Annex M2**.

Shri Pankaj Goyal from Autonxt Automation Pvt Ltd., Thane manufacturing Electric Tractors was co-opted as an expert to WG 1.



Annex
M2_Compo_Panels.c

2.4 New/Revised Indian Standards and Amendments Published/Under Publication

The committee noted the list of Indian Standards (new/revised) and Amendments given at **2.4** of the agenda which are published or under publication:

ITEM 3 FINALISATION OF ANNUAL PROGRAM FOR STANDARDISATION FOR 2024-25 AND MEETING CALENDAR

3.1 The committee reviewed the proposed Annual Program for Standardisation, 2024-25 (enclosed at Annex 4 of the agenda) and after due deliberation approved the same for implementation.

Further, the committee requested the conveners of the various panels for implementation of Annual Program for Standardisation, 2024-25 sticking to the allocated timeframe.

3.2 Proposed Annual Calendar for Technical Committee Meetings:

The FAD 11 committee after due deliberation approved the following tentative dates for upcoming meetings of the committee:

- a) 28th Meeting – 18 or 21 October 2024 to be organized by TMA
- b) 29th Meeting – 14 February 2025 to be organised by CIAE, Bhopal
- c) 30th Meeting – 3rd Week of June 2025 to be organised by PTAI

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

Following drafts (Revised/New) were circulated into wide circulation for a period of 60 days/30 days as per the decision taken in earlier meetings of FAD 11. The decision of the committee on each of the documents is tabulated below:

Sl.No.	Document No.	Title	Decision of the Committee
i)	FAD 11 (22456)	Equipment for crop protection - Air-assisted sprayers - Dimensions of Nozzle Swivel Nuts (first revision of IS 15921)	The committee agreed to the editorial comments received from Dr. K.N. Agrawal on the draft during wide circulation and finalized the draft for sending into publication.
ii)	FAD 11(22450)	Preventive maintenance of agricultural wheeled tractors — Code of practice (<i>second revision</i> of IS 6840)	The committee noting that no comments have been received during the wide circulation stage, finalized the draft for sending into publication.
iii)	FAD 11(22336)	Agricultural tractors for use in wet land cultivation — Technical requirements (First Revision of IS 11082)	The committee noting that no comments have been received during the wide circulation stage, finalized the draft for sending into publication.
iv)	FAD 11(22451)	Drawbar for agricultural tractors — Link type — Specification (<i>first revision</i> of IS 12953)	The committee noting that no comments have been received during the wide circulation stage, finalized the draft for sending into publication.
v)	FAD 11(24876)	Double action pruning saw — Specification (third revision of IS 3108)	The committee noted the comments were received from Shri V. Audhi Narayan Reddy, Shaktiman for incorporation the requirements or development of new standards for power (battery/engine) operated tree pruner/pruning saws.
vi)	FAD 11(24864)	Tree pruner - Specification (first revision of IS 10684)	

			<p>The committee duly deliberated on the issues and concluded, for power operated tree pruners a number of requirements (design/dimensions/construction/safety) and testing will different as compared to hand operated. Therefore, the committee decided to develop separate standards for power operated tree pruner and saws and finalized the drafts FAD 11(24876) and FAD 11(24864) for publication.</p> <p>The committee requested Shri Parag and Shri Audhi Narayan to prepare draft covering requirements and testing procedure of Power Operated tree pruner / saws.</p>
vii)	FAD 11(25072)	Spark arrester for agricultural tractors and power tillers — Test methods (<i>first revision</i> of IS 11822)	The committee noting that no comments have been received during the wide circulation stage, finalized the draft for sending into publication
viii)	FAD 11(25506)	Guards For Harvesting machines —h Specification (<i>second revision</i> of IS 6024)	The committee noting that no comments have been received during the wide circulation stage, finalized the draft for sending into publication
ix)	FAD 11(25503)	Animal drawn potato digger ridger type – Specification (<i>first revision</i> of IS 11033)	The committee noting that no comments have been received during the wide circulation stage, finalized the draft for sending into publication
x)	FAD 11(25122)	Manually operated fertilizer broadcaster - Specification (<i>first revision</i> of IS 12337)	The committee noting that no comments have been received during the wide circulation stage, finalized the draft for sending into publication
xi)	FAD 11(25051)	Hydraulic power and lifting capacity of agricultural tractors - test method (<i>first revision</i> of IS 12224)	see 5.1, Sl.No. 4
xii)	FAD 11(25052)	Cage wheel for power tillers - specification (<i>first revision</i> of IS 10282)	The committee noting that no comments have been received during the wide circulation stage, finalized the draft for sending into publication
xiii)	FAD 11(25028)	Track width of agricultural tractors – Recommendations (<i>first revision</i> of IS 12363)	<p>The committee deliberated upon the comments received from Shri Philip Koshy, TMA and Dr S.N. Nalawade, MPKV, Rahuri, regarding incorporation of few more track width of agricultural tractor as per current manufacturing practices. The revised draft is enclosed at</p> <p>The committee after due deliberation finalized the draft for sending into publication</p>

ITEM 5 APPROVAL OF DRAFT INDIAN STANDARDS FOR WIDE CIRCULATION**5.1 Indian Standards on Tractors reviewed by FAD 11/Panel 5**

During its 4th meeting of FAD 11/P 5 held on 7 June 2024, the panel deliberated upon the revised drafts of Indian Standards on Tractors submitted by the experts. The recommendation of panel and current status of those is given below:

S. No.	IS to be reviewed	Decision of the Committee
1	IS 11442 : 1996/ISO 5721 : 1989 Agricultural tractors – Operator’s field of vision -test procedures	<p>The committee noted the information provided at S.No. 1, 5.1 of the agenda. The committee deliberated upon the observation made by Member Secretary regarding bifurcation of ISO 5721 into two parts covering requirements, test procedures and acceptance criteria for the operator's field of vision Part 1 “Field of vision to the front” and Part 2 “Field of vision to the side and to the rear” and recommendation of adoption of same as revision of IS 11442.</p> <p>Further, the committee deliberated upon the revised draft of IS 11442 (see Annex 8 of the Agenda) which was prepared by Shri Mansingh Jagdale, John Deere to AIS 107 which covers only the requirements and test for measuring forward field of vision (applies to 180-degree forward field of vision) for tractors.</p> <p>Shri Philip Koshy, TMA recommended to proceed with the draft submitted by Shri Mansingh Jagdale, John Deere as revision of IS 11442. Following points were made:</p> <ol style="list-style-type: none"> 1. Currently Tractor Manufacturers in the country are testing forward field of vision against AIS 107. 2. The acceptance requirements of masking effect provided in AIS 107 and ISO 5721-1 : 2013 differs. Indian tractors include pre-cleaner, silencers whereas those tractors conforming to ISO standards have an under pre-cleaner due to which masking effect is comparatively less than what comes in the Indian Tractors. 3. Therefore, it was suggested to not to adopt ISO 5721-1 : 2013 due to non-compliance of Indian Tractors with the ISO standard and continuing with AIS 107 for the time being.. 4. For measuring rear field of vision, additional Class II and Class IV mirror needs to be provides on the tractor; currently which are not provided in Indian Tractors. Therefore, it was suggested to not to adopt ISO 5721-2 which covers measurement and requirements of rear field of vision requirements, which would necessitate additional mirrors on tractors, thus, will force the tractor manufacturers to change design and increase in cost of tractors. <p>The committee accepted the points made by TMA and decided to not to adopt ISO 5721-1 and IS 5271-2 as of now and send draft revision of IS 11442 (prepared aligning to AIS 107) into wide circulation for a period of 60 days after making necessary editorial corrections.</p>

2	IS 11082 : 1984 Technical requirements of agricultural tractors for wet land cultivation	<i>see</i> SL.No. iii) of Item 4.
3	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)	<p>The committee noted the Member Secretary's observations as provided in S.No. 3, 5.1 of the agenda.</p> <p>The committee noted that the draft revision of IS 12362 (Part 1) which is prepared aligning to AIS -091 Part 2 covers requirements and test procedure to evaluate the strength and vertical load on the mechanical couplings and includes drawings of mechanical coupling taken from old versions of IS 12362 (Part1), ISO 6489-2, IS 12362 (Part 3).</p> <p>The Committee considered the proposal of Member Secretary to create a new standard converting AIS-091 Part 2 into Indian Standard, in which reference of latest versions of above standards i.e., IS 12362 (Part 1) : 2007, ISO 6489-2 : 2002 and IS 12362 (Part 3) : 2023 can be given. Further, to ISO 6489-2 : 2002 was also concerned.</p> <p>Drawings provided in IS 12362 (Part 1) : 2007, ISO 6489-2 : 2002 and IS 12362 (Part 3) : 2023 were also acceptable to members representing TMA, however, it was insisted to keep all the drawings into a single standard.</p> <p>The committee suggested that, giving reference of the standards would be better option, which will facilitate usage of those standards separately as well.</p> <p>The committee requested TMA to discuss the issue in their internal committee meeting and revert back FAD 11 by 31 July 2024.</p>
4	IS 12224 : 1987 Method of Test for Hydraulic Power and Lifting Capacity of Agricultural Tractors.	<p>The committee deliberated upon the comments received from CFMTTI, Budni (see Annex 11) and FAD 11/P 5 recommendation on WC document of IS 12224. The committee accepted the proposal made by CFMTTI, Budni.</p> <p>"The minimum of lifting force shall be corrected to the pressure equivalent to 90 percent of the minimum of relief valve pressure setting specified by the manufacture" as currently given in 4.2.3 and 4.3.4 of Draft Rev of IS 12224 to be replaced with "The minimum of lifting force shall be corrected to the pressure equivalent to 90 percent of the observed relief valve opening setting (Sustained pressure) of hydraulic lift system observed during Relief valve performance test."</p> <p>However, TMA apprised the committee, the in order adapt to the new requirements, tractor industry would require certain time, therefore requested to concurrent running of current version for one year after publication of new version.</p>
5	IS 10743 : 1983 Method for Determination of Centre of Gravity of Agricultural Tractors	<p>The committee noting the information provided in S.No. 5 of 5.1 of the agenda, decided that, IS 10743 would be revised as a modified adoption of ISO 789-6 : 2019. The revision would include also alternate test method to measure vertical coordinate as mentioned in the Clause 8 (8.1 to 8.9) of IS 10743. As already the draft revision of IS 10743 has completed it wide circulation stage, the committee decided to send the draft revision of into wide circulation for a period of 60 days for second time.</p>

6	IS 12239 (Part 2) :1999 Tractors and Machinery for Agriculture and Forestry - Technical Means for Ensuring Safety Part 2 Tractors <i>First Revision</i>	The committee requested TMA, to compare the revised draft with original standard, and see if some important content covered in original standard has been missed in the revised draft such as Requirement of slow moving vehicles, guards for some hot parts such as fan, pulleys, belts, rear wheels, etc. Further, the committee also accepted the proposal of Fad 11/P 5 to adopt ISO 11684 for safety symbols considering the importance of the ISO standard. The committee decided to send the draft adoption of IS 11684 into wide circulation for a period of 30 days
7	IS 9939 : 1981 Glossary of Terms Relating to Agricultural Tractors and Power Tillers	Revised draft of IS 9939 was submitted by TMA. The committee requested FAD 11/P 5 to discuss the same in its meeting.
8	IS 10273 : 1987 Guidelines for Declaration of Power and Specific Fuel Consumption and Labelling of Agricultural Tractors (<i>first revision</i>)	The committee noting the information provided in the agenda, after due deliberation decided to send the draft revision of IS 10273 (see Annex 13 of the agenda) into wide circulation for a period of 60 days after making necessary editorial corrections.
9	IS 12062 : 1987 Method for Measurement of Exhaust Smoke Emitted by Agricultural Tractors	The committee considering recommendation of FAD 11/P 5, after due deliberation decided to send the draft revision of IS 12062 (see Annex 14 of the agenda) into wide circulation for a period of 60 days after making necessary editorial corrections.
10	IS 10274 : 1993 Agricultural Wheeled Tractors Maximum Travel Speed – Method of Determination (<i>first revision</i>)	The committee considering recommendation of FAD 11/P 5, after due deliberation decided to send the draft revision of IS 10274 (see Annex 15 of the agenda) into wide circulation for a period of 60 days after making necessary editorial corrections.
11	IS 11081 : 1993 Agricultural Tractors - Half Cage Wheel - Specification (<i>first revision</i>)	The committee taking inputs from members including AMMA-India, Tractor manufacturers, concluded that no technical modification is required in current version of IS 11081. Therefore, the committee decided to revise IS 11081 in latest style and format of Indian Standard without technical modifications and send draft into wide circulation for a period of 60 days.
12	IS 13642 : 1993 Agricultural Tractors – Silencers Technical Requirements	The committee requested TMA to initiate the work for converting AIS 115 (Part 1) and (Part 2) into Indian Standards which would serve as revision of IS 13642.
13	IS 12061 : 1994 Agricultural Tractors – Braking Performance - Method of Test (<i>first revision</i>)	The committee requested TMA to review IS 12061 and submit revised draft which would be discussed in FAD 11/P 5 meeting.

14	IS 14683 : 1999 Agricultural Tractors and Machinery - Lighting Devices for Travel on Public Roads	The committee requested TMA to initiate the work for converting AIS 030 into an Indian Standard which would serve as revision of IS 14683.
15	IS 12226 : 1995 Agricultural Tractors - Power Tests for Drawbar - Test Procedure (<i>first revision</i>)	The committee noting the information provided in the agenda, after due deliberation decided to send the draft revision of IS 12226 (see Annex 16 of the agenda) into wide circulation for a period of 60 days after making necessary editorial corrections. However, the committee didn't accepted the modification in formula of Slip and decided to keep the formula as it is given in the current version standard.
16	IS 12036 : 1995 Agricultural Tractors – Test Procedures – Power tests for Power Take Off (<i>first revision</i>)	Revised draft of IS 12036 was submitted by TMA. The committee requested FAD 11/P 5 to discuss the same in its meeting.

5.2 Indian Standards on Plant Protection Equipment reviewed by FAD 11/Panel 8

5.2.1 Review of IS 7593 (Part 1) : 1986 Specification for Power – Operated Pneumatic Sprayer - Cum – Duster Part 1 Knapsack Type (*First Revision*)

The committee noted the information provided in 5.2.1 of the agenda regarding revised draft of IS 7593 (Part 1) (*see Annex 18 of the agenda*). The committee requested Dr. Agrawal to make the necessary corrections as was asked during 1st meeting of the newly constituted panel FAD 11/P 8 held on 13 June 2024. On receipt, the draft will be send into wide circulation for a period of 60 days after chairperson, FAD 11 approval.

5.2.2 Review of IS 5135 (Part 1) : 1994 “Specification for Hand – Rotary Duster Part 1 Belly – Mounted Type (Second Revision)”

The committee noting the information provided in 5.2.2 of the agenda, accepted the proposal for merging testing protocol of hand rotary dusters covered in IS 12482 with IS 5135 (Part 1) and send the merged draft (*see Annex 19*) into wide circulation for a period of 60 days after making necessary editorial corrections.

5.3 Review of IS 13539 : 2018 Power Tiller – Recommendations on Selected Performance and Other Characteristics (*Second Revision*)

Member Secretary briefed the committee regarding the recommendations and suggestions given by FAD 11/P 6 (*see Annex 20 of the Agenda*) during its 3rd meeting held on 4 May 2024 at KisanKraft, Bangalore. During the FAD 11/P 6 meeting it was concluded that both Power Tiller and Power Weeder are distinct machines serving different purposes, therefore it would not be right to differentiate both just on the basis of power rating. The committee took inputs from all the organisation. The compiled recommendations and suggestions provided by the members regarding the issue are given below:

1. KAMCO and VST emphasized to the fact, power tiller and power weeders are different machines, meant of different operations. It was brought to notice that, a low hp Power Tiller (say 8hp) is capable of doing intercultural operation and puddling operations easily while an 8 hp power weeder may not. Power weeder, due to its light weight jumps on hard soil while power tiller works smoothly.
2. On the other hand, representative from AIFA, brought to committee’s notice that lower horsepower power tillers are not fulfilling the needs of the farmers due to various reasons such as hardening of the top layer of soil, topography change, etc., Even though farmers purchase low hp power tiller (below 10 hp) due to lower price, which in long run doesn’t fulfills the intended purpose.
3. BCS and KisanKraft’s representative apprised to the committee, that power weeder are predominantly used in sugarcane and cotton farming. Earlier, lower horsepower power weeders were sufficient, but changing soil conditions have necessitated a shift to higher horsepower models. It was also apprised, that highest sales and demand are for power tillers above 12 Hp.
4. Director, SRFMTTI and Convenor, FAD 11/P 6 also made is point that to differentiate between power tillers and power weeders, parameter of weight may also be established as a criterion which was also recommended by FAD 11/P 6.
5. Director, CFMTTI, Budni requested to considered usage of Power Tillers in hilly and regions of North East India as well while defining it.
6. Shri Deshmukh, John Deere India apprised the committee regarding misinterpretation of IS 15925/ISO 11449 which pertains to requirement and tests of rotary tillers for gardening and horticulture. It was brought to the notice that, the standard doesn’t define, what is rotary tiller, rather its scopes say that the standard is applicable to rotary tillers of power capacity less than to equal to 7.5 kW (10 hp) for gardening and horticulture and not applicable to rotary tillers for agricultural purposes.
7. TMA also proposed for defining power tiller and weeders based on their application and configurations to avoid confusion and ensure clarity in usage.

The committee also observed the sales and production data of 8 hp and 9 hp Power Tiller of VST and KAMCO respectively (enclosed at Annex 21 of the agenda). After due deliberation, the committee took the following decisions.

1. The committee agreed that both power tillers and power weeder are distinct machines and cannot be differentiated based on just power and accepted the proposal of FAD 11/P 6 to develop a new standard for Power Weeder (Rotary Tiller). The committee considered the concerns of both Power Tiller Manufacturers as well as Power Weeder Manufacturers, however didn't take any decision to modify the definition of Power Tiller.
2. As already SRFMTTI, Anantpur is into preparing a draft on power weeder (rotary tiller) which would be used to establish its performance, the committee decided to hold the review of IS 13539 (Power Tiller Standard) and wait for the draft on Power Weeder. The committee directed FAD 11/P 6 to conduct a physical meeting as soon as possible to discuss the draft on Power Weeder, which then to be presented to FAD 11 in its next meeting.

ITEM 6 NEW SUBJECTS FOR STANDARDIZATION

6.1 Draft Indian Standard on Square Baler Machine

The committee noting the information provided in **6.1** of the agenda requested WG 4 to discuss the draft minimum performance characteristics of square baler (submitted by Shri Sujit Hinje, CNH) and suitably incorporate in the draft standard. The draft would then be circulated as P-draft among committee members for 21 days for commenting.

6.2 Draft Indian Standard on Drone Seeder and Drone Sprayer

The committee noting the information provided in **6.2** of the agenda requested FAD 11/P 7 to conduct a physical meeting on priority in July 2024 itself, to discuss the comments on FAD 11 (24816)P "Unmanned aerial spraying systems (Drone Sprayer) - Test procedure" and suitably make corrections in the draft. The draft would then be send into wide circulation for period of 60 days after Chairperson, FAD 11 approval.

6.3 Draft Indian Standard on Electric Tractor

The committee noted the draft test code for Electric Tractor (see Annex 25 of the Agenda) which has been prepared similar to IS 5994 (test code for Diesel Engine Tractor) and the comments received on the same from WG 1 members. The committee requested WG 1 to have a discussion on the draft and comments received from WG 1 members. Meanwhile, TMA was also requested to discuss the draft standard within its internal committee. The inputs from TMA would then be taken in WG 1 for further discussion on the draft.

6.4 Draft Standard on Electrostatic Sprayer

The committee noting the information provided in **6.4** of the Agenda requested Shri Chandrashekhar Deshmukh, John Deere India and Dr. Bikram Jyoti (CIAE, Bhopal) to modify the draft standard on Electrostatic Sprayer as suggested by FAD 11/P 8 during its 1st Panel meeting and also to look into the comments given by Member Secretary, FAD 11. The committee suggested the experts to conduct a physical meeting to discuss the draft thoroughly. The corrected draft would then be circulated as P-draft among committee members for 21 days for commenting.

6.5 Battery-operated Knapsack Sprayer

The committee noting the information provided in **6.5** of the agenda, requested Dr. Agrawal, CIAE Bhopal and Dr. Shahare, DBSKKV, Dapoli to submit the draft on battery operated knapsack sprayer before its next meeting in October 2024.

6.6 Development of Indian Standard on Super Seeder and Strip Till Drill

The task for preparation of drafts on the subjects is allocated to Punjab Agricultural University, Ludhiana. Dr. Narang, PAU apprised the committee that, drafts are under preparation and will be submitted by 31 July 2024. The requested, FAD 11/P 3 to review the draft upon submission.

7 NEW WORK ITEM PROPOSALS

The committee agreed to the proposal for taking up standard formulation on tractor-operated models of agricultural machinery/implements mentioned in item 7 of the agenda. The committee allocated the task to FAD 11/P 3 for either incorporating requirements of tractor-operated models of the machinery in the existing respective standard (Manual or Animal Drawn) or creating new standards specifically for tractor-operated machines. The committee requested AMMA-India, to provide support in identifying manufacturers of these machinery/implements and take inputs on latest manufacturing practices.

ITEM 8 REVIEW OF INDIAN STANDARDS

The committee took the following decisions regarding review of Indian Standards due for review as per BIS's five yearly review criteria:

S.No.	IS No. and Title	Last Reaffirmation Year	Due Date	Decision of the Committee
1	IS 17156 (Part 2) : 2020 Cotton Picker Machine : Part 2 Performance Test	2015	March 2025	Based on recommendation of members, the committee decided to reaffirm the standard as it is.
2	IS 17408 (Part 1) : 2020/ISO 16231-1 : 2013 Self - Propelled Agricultural Machinery - Assessment of Stability : Part 1 Principles	2015	March 2025	The committee noted that ISO 16231-1 : 2013 and ISO 16231-2 : 2015 are the latest versions, therefore decided to reaffirm both the standards as it is.
3	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	2015	March 2025	

9 COMMENTS ON INDIAN STANDARDS

9.1 Comments received on IS 1970 : 2024 Hand-Operated Compression - Knapsack Sprayer – Specification (Sixth Revision) from ASPEE, Mumbai

The committee agreed to the comments of ASPEE on IS 1970 : 2024 as enclosed in Annex 27 of the agenda and decided to issue a draft amendment into WC for a period of 30 days incorporating their comments.

The committee also requested ASPEE, to kindly review the material requirements of different components of sprayer as given in draft revision of IS 3652, IS 3906 and IS 3062 which are currently under publication.

In case any modifications are received, the same would be incorporated in the draft revisions and further process for publication.

The committee on request of Dr. Agrawal decided to change the title of the draft revision of IS 3652, IS 3906 and IS 3062 and include the word 'Test Method' in the title because the standards covers testing procedure also.

ITEM 10 INTERNATIONAL ACTIVITIES

10.1 Approval of Indian Delegates for Participation in ISO Meetings

10.1.1 43rd Plenary Meeting of ISO/TC 23/SC 3

The committee nominated following members to participate in the 43rd Plenary Meeting of ISO/TC 23/SC 3 to be held on 11 September 2024 (8:00 – 12:00 hrs CTD) through virtual mode.

- a) Shri Chandrashekhar Deshmukh, John Deere India, Pune (Leader of Delegation)
- b) Shri K P Singh, CLAAS, Chandigarh

10.1.2 40th Plenary Meeting of ISO TC 23/SC 4

The committee nominated following members to participate in the 40th Plenary Meeting of ISO/TC 23/SC 4 to be held on 12 September 2024 (8:00 – 12:00 hrs CTD) through virtual mode.

- a) Shri Veenit Negi, TMA (Leader of Delegation)
- b) Shri Ashok Kumar, Kubota
- c) Shri Ashish Mallarh, Kubota
- d) Shri Vikrant Chauhan, FAD, BIS

10.1.3 42nd Plenary Meeting of ISO/TC 23/SC 6

The committee noted that, the 42nd Plenary Meeting of ISO/TC 23/SC 6 is scheduled to be held from 23 to 27 September 2024 (8:00 – 12:00 hrs CTD) physically. The committee nominated following members to participate in the meeting if held virtually as well.

- a) Dr. K N Agrawal, ICAR-CIAE, Bhopal (Leader of Delegation)
- b) Shri Chandrashekhar Deshmukh, John Deere India, Pune.

10.2 35th Plenary Meeting of ISO/TC 23/SC 19 'Agricultural Electronics'

The committee noted the brief provided in **10.2** of the agenda regarding participation of Indian Delegation in the 35th Plenary meeting of ISO/TC 23/SC 19 on 21 June 2024 through Hybrid Mode.

10.3 Status of ISO Balloting

The committee noted the excel sheet enclosed at Annex 29 of the agenda showing the status of ISO Balloting. The committee noticed that, despite of having relevant expertise in the committee, for many ballots abstention has been voted. The committee requested members to actively contribute towards ISO related activities and provide comments/inputs on various ballots circulated from time to time.

10.4 Creation of Mirror Working Groups for ISO related Activities

10.4.1 Member secretary apprised the committee that, during 24th and 25th Meeting of FAD 11 held on 23 June & 6 July and 24 November 2023 respectively, the committee created Seven Mirror Working Groups (MWGs) parallel to the different sub-committees under ISO/TC 23 “Tractors and Machinery for Agriculture and Forestry” of which India holds P Membership and FAD 11 is the National Mirror Committee. In these groups various Experts were included from Panels and Sectional Committee depending upon expertise. This measure was taken to as to increase participation in ISO related activities especially voting on different ISO ballots.

10.4.2 However, except for a few members of these MWGs, very few or no responses have been submitted by members to various ISO Ballots. Due to which, in several ballots Abstention was voted.

10.4.3 The committee deliberated upon the proposal (see Agenda) put up Member Secretary either to create an expert panel dedicated for ISO related activities or appointed nodal experts within respective MWGs with the responsibility to examine the ballots and providing inputs/comment on ballots.

The committee considering the Proposal 2 after due deliberation appointed nodal/designated experts (given in next page) responsible for framing comments and India’s viewpoint on ISO Ballots to improve participation at International Level and also participate in the ISO Plenary Meetings as far as possible.

10.4.4 *Creation of New Panel for dealing with standardisation subjects on Agricultural Electronics*

10.4.4.1 The committee constituted a new panel FAD 11/Panel 9 “Agricultural Electronics” parallel to ISO/TC 23/SC 19. The scope of the panel is as follows:

1. Review of ISO ballots of SC 19 circulated from time to time and providing comments.
2. Review of already developed ISO standards under SC 19.
3. Formulation of new standards for smart agricultural machinery (autonomous, remote control machinery, etc)

10.4.4.2 Shri Chandrasekhar Deshmukh, John Deere India, was appointed as the convenor of the Panel and following experts were on-boarded as members of the Panel:

1. Dr. S.P. Singh, CIAE, Bhopal
2. Dr. S.M. Nalawaade, MPKV, Rahuri
3. Dr. N.S. Chandel, CIAE, Bhopal
4. Shri Philip Koshy, TMA
5. Shri Pratik Duraphe, John Deere India
6. Shri Pradeep Shinde, Mahindra & Mahindra
7. Shri K P Singh, CLAAS
8. Shri Ashish Kumar, Kubota

10.4.4.3 The committee requested panel to identify experts of the relevant field and on-board them.

MEMBERS OF THE MIRROR WORKING GROUPS AND NODAL EXPERTS

S.No.	ISO Technical Committee 23 (Participatory Member)	Mirror Working Group and their Composition	Nodal Experts
1.	Tractors and machinery for agriculture and forestry, ISO TC 23	MWG 1/FAD 11 <ol style="list-style-type: none"> 1. Dr. C R Mehta, Director, CIAE, Bhopal 2. Dr. Surendra Singh, AMMA India 3. Dr. VP Chaudhary, CIAE 4. Dr. KN Agrawal, CIAE (AICRP on FIM) 5. Dr. SP Singh, CIAE, (AICRP on UAE) 6. Director, CFMTTI 7. Director, NRFMTTI 8. Director, SRFMTTI 9. Director, NERFMTTI 10. Dr. Sachin Nalawade, MPKV, Rahuri 11. Dr. R Kavitha, TNAU 12. Shri Chandrashekhar Deshmukh, John Deere 13. Shri Rajanand, John Deere 14. Shri Ashish Kumar, Kubota 15. Shri K P Singh, CLAAS 	<ol style="list-style-type: none"> 1. Dr. Surendra Singh, AMMA India 2. Dr. VP Chaudhary, CIAE
2.	Safety and comfort, ISO TC 23/SC 3	MWG 2 <ol style="list-style-type: none"> 1. Dr. C R Mehta, Director, CIAE, Bhopal 2. Shri Chandrashekhar Deshmukh, John Deere 3. Shri KP Singh, CLAAS 4. Shri Pratik Duraphe, John Deere 5. Dr. Surendra Singh, AMMA India 6. Dr. Mahesh Narang, PAU 7. Dr. KN Agrawal, CIAE (AICRP on FIM) 8. Dr. SP Singh, AICRP on UAE, CIAE 9. Dr. Surendra Kumar, TNAU 10. Dr. Sachin Nalawade, MPKV 11. Shri Sarbjeet Singh, Dasmesh 12. Shri Parag Badgular, Shaktiman 13. Shri Mitul Panchal, AMMA India 14. Shri Sujit Hinje, CNH 15. Shri Veenit Negi, TMA 	<ol style="list-style-type: none"> 1. Dr. C R Mehta, Director, CIAE, Bhopal 2. Shri Chandrashekhar Deshmukh, John Deere 3. Shri KP Singh, CLAAS

		16. Shri Ashish Kumar, Kubota	
3.	Tractors, ISO TC 23/SC 4	MWG 3/FAD 11-P5 The members of FAD 11/Panel 5 “To Review and Formulate Indian Standards on Agricultural Tractors” will be the members of MWG 3.	1. Shri Veenit Negi, TMA
4.	Equipment for crop protection, ISO TC 23/SC 6	MWG 4/FAD 11/P 8 The members of FAD 11/P 8 “Plant Protection Equipment” will be the members of MWG 4. Also, 1. Dr. R Kavitha, TNAU 2. Dr. Surendra Kumar, TNAU 3. Dr. Satyaprakash, CIAE 4. Dr. Ramesh Sahani, CIAE	1. Dr. KN Agrawal, CIAE, Bhopal 2. Shri Chandrashkhar Deshmukh, John Deere India
5.	Equipment for harvesting and conservation, ISO TC 23/SC 7	MWG 5/FAD 11-P 1 The members of FAD 11/Pane 1 “Panel to formulate and review Indian Standards on Harvesters” will be the members of MWG 4.	1. Dr. Mukesh Jain, NRFMTTI, Hisar 2. Shri KP Singh, CLAAS
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	1. Dr. Surendra Singh, AMMA-India
7.	Agricultural Electronics, ISO TC 23/SC 19	MWG 7 The members of FAD 11/P will be the members of MWG 7	1. Shri Chandrashekhar Deshmukh, John Deere India 2. Shri Pratik Duraphe, John Deere

10.5 Sub-Committees Under ISO/TC 23 “Tractors and Machinery for Agriculture and Forestry” of which India holds P-Membership

The committee noted the webpage links provided in the 10.5 of the agenda of different sub-committees under ISO/TC 23. The committee requested committee members to go through the scope, various published standards, new subjects taken up for standardisation, list of working groups, etc. under these sub-committees. Depending upon expertise, members were requested to nominate themselves for participation in the ISO WGs for increasing participation at the ISO Level.

10.6 International Relations Portal

The committee noted the new International Relations Portal developed by BIS, in order to streamline all the ISO/IEC related activities such as balloting, status of balloting, meeting calendar, participation in ISO/IEC meetings, delegation proposal for participation, etc.

The committee requested Member Secretary to organise a virtual meetup, to demonstrate IR Portal to the committee members.

ITEM 11 ANY OTHER BUSINESS**11.1 Draft standard on Tractor Drawn Laser Leveller**

Member Secretary apprised the committee that, draft standard on Tractor drawn laser leveller in earlier meetings of the committee, was finalized by the committee. However due to major modifications in the draft, it was not sent for publication. Later on, the document was dropped from the BIS Portal as well.

Further, the draft standard was reanalysed by FAD 11/P 1 and modifications were made. In 25th meeting of FAD 11 held on 24 November 2023, the committee requested AMMA India to gather inputs on raw material and hardness requirement of soil cutting blade from laser leveller manufacturers. Accordingly, inputs were taken and incorporated in the draft.

As already, the draft was earlier circulated among the committee members for review, the committee decided to send the draft standard on Tractor Drawn Laser Leveller directly into wide circulation for a period of 60 days for commenting with a new document number.

11.2 FAD 11(23581) WC – Pedal-operated paddy thresher – Specification (*second revision* of IS 13327)

Member Secretary apprised the committee that, in its 25th meeting of FAD 11 held on 24 November 2023, the Dr. S.P. Singh and Dr. K.N. Agrawal, CIAE, Bhopal were requested to re-review the draft to incorporate few requirements for operating the machine.

Accordingly, the draft was submitted by Dr. Agrawal. As only, minor modifications were made in the draft and already it has completed its WC stage, the committee finalized the draft revision and approved it for publication.

11.3 FAD 11 (21502) – Pruning and slashing knives, hooked and curved – Specification (Third Revision of IS 619)

Member Secretary apprised the committee that, in its 25th meeting of FAD 11 held on 24 November 2023, the committee already has finalized the draft and approved for publication. However, during processing the document for publication, few minor mistakes (tolerances on dimensions of knives) were observed, which were corrected in consultation with Dr. Surendra Singh, AMMA-India. The committee agreed to further process the document for publication.

ITEM 12 TIME AND PLACE FOR THE NEXT MEETING

After due deliberation, the committee decided to hold its 28th meeting on 18 or 21 October 2024 in Physical Mode. The meeting will be hosted by Tractor and Mechanization Association, New Delhi. The venue and exact date of the meeting will be finalised in consultation with Chairperson, FAD 11 later and will be communicated to members accordingly.

Attendance for 27th Meeting of Agriculture Machinery and Equipment Sectional Committee FAD 11 held on 02 July 2024

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.	All India Farmers Alliance, New Delhi	Smt. Apurva Tripathi
4.	Aspee Agro Equipment Private Limited, Mumbai	Shri Jatin S Patel Shri Gangadhar Varpe Shri Narendra Kumar (<i>invitee</i>) Shri A M Mauani (<i>invitee</i>)
5.	CLAAS India Private Limited, Chandigarh	Shri Krishna Prabhakar Singh
6.	Central Farm Machinery Training and Testing Institute, Budni	Dr. A.K Upadhyay
7.	ICAR - All India Coordinated Research Project on Ergonomics and Safety in Agriculture, Bhopal	Dr. K N Agrawal
8.	ICAR - All India Coordinated Research Project on Utilization of Animal Energy, Bhopal	Dr. S P Singh
9.	ICAR - Central Institute of Agricultural Engineering, Bhopal	Dr. V P Chaudhary
10.	Kerala Agro Machinery Corporation Ltd. (KAMCO), Athani	Shri P C Sajimon
11.	KisanKraft Limited, Bangalore	Shri Sunil Prasad
12.	Kubota Agricultural Machinery India Private Limited, Faridabad	Shri Ashish Kumar Mallarh
13.	Maharana Pratap University of Agricultural and Technology, Udaipur	Dr. Sanwal Singh Meena
14.	Mahatma Phule Krishi Vidyapeeth, Rahuri	Dr. Sachin Madhukar Nalawade
15.	Mahindra and Mahindra Limited, Mumbai	Shri Pradeep Shinde
16.	National Innovation Foundation, New Delhi	Shri Rakesh Maheshwari
17.	Northern Region Farm Machinery Training and Testing Institute, Hisar	Dr. Mukesh Jain
18.	Power Tillers Manufacturers Association, Kolkata	Shri A R Ganesh Kumar
19.	Punjab Agricultural University, Ludhiana	Dr. Mahesh Kumar Narang
20.	Southern Region Farm Machinery Training and Testing Institute, Tractor Nagar	Dr. B M Nandede
21.	Tirth Agro Technology Pvt. Ltd. 'Shaktiman', Bhunava, Gujarat	Shri Parag Devidas Badgujar
22.	Tractor and Mechanization Association, New Delhi	Shri Philip Koshy Shri Veenit Negi Smt. Devyani Shri Santosh Sengar (<i>invitee</i>)
23.	Tube Investments Clean Mobility Private Limited, Chennai	Shri Abhishek Sinha Shri S O Tyagi
24.	In Personal Capacity	Shri Vivek Gupta

Members Joined Virtually		
1.	Agricultural Machinery Manufacturers Association (AMMA), Gandhinagar	Shri Mitul Panchal
2.	Automotive Research Association of India, Pune	Shri Girish Tanawade Shri Parag (<i>invitee</i>)
3.	CCS Haryana Agricultural University, Hisar	Dr. Vijaya Rani
4.	CNH Industrial India Private Limited, Pune	Shri Santhosh Rao Shri Sujit Hinge Shri Jitendra Kumar (<i>invitee</i>)
5.	Central Farm Machinery Training and Testing Institute, Budni	Shri R P Pandey (<i>invitee</i>)
6.	Dasmesh Mechanical Works Private Limited, Malerkotla	Shri Sarbjeet Singh Panesar
7.	ICAR - All India Coordinated Research Project on Ergonomics and Safety in Agriculture, Bhopal	Dr. Sukhbir Singh
8.	ICAR - Central Institute of Agricultural Engineering, Bhopal	Dr. Uday R Badegaonkar Dr. Dilip Jat
9.	Indian Council of Agricultural Research, New Delhi	Dr. Panna Lal Singh
10.	John Deere India Private Limited, Pune	Shri Anand Raj Shri Chandrashekhar Deshmukh Shri Pratik Duraphe
11.	Kerala Agro Machinery Corporation Ltd. (KAMCO), Athani	Shri A Unnikrishnan
12.	Ministry of Agriculture, Department of Agriculture, New Delhi	Shri V N Kale
13.	National Institute of Plant Health Management, Hyderabad	Dr. Vidhu Kampurath P. Shri Er. Mutyala Udaya Bhanu
14.	Punjab Agricultural University, Ludhiana	Dr. Rajesh Goyal
15.	Southern Region Farm Machinery Training and Testing Institute, Tractor Nagar	Shri Pramod Yadav (<i>invitee</i>)
16.	Tamil Nadu Agricultural University, Coimbatore	Dr. R Kavitha Dr. A Surendra Kumar Dr. A P Mohankumar
17.	Tirth Agro Technology Pvt. Ltd. 'Shaktiman', Bhunava, Gujarat	Shri Audhi Narayan Reddy
18.	Voluntary Organisation in Interest of Consumer Education (Voice), New Delhi	Shri B K Mukhopadhyay
Organizations Invited with the Permission of Chairperson		
1.	AutoNxt Automation Private Limited, Hapur	Shri Pankaj Goyal
2.	BCS India Private Limited, Ludhiana	Shri Sukhwinder Singh