

BUREAU OF INDIAN STANDARDS

MINUTES

Name of the Committee	No. of Meeting	Date	Time	Venue
Agricultural Machinery and Equipment Sectional Committee, FAD 11	23 rd	23 January 2023 (Monday)	11:00am	Virtual Mode through Webex

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, Member Secretary of FAD 11, Food and Agriculture Department, BIS welcomed the Chairperson and members of FAD 11 to the 23rd meeting of the committee.

Further, Smt Suneeti Toteja, Scientist E/Director and Head FAD extended a warm welcome to the Chairperson, FAD 11 and to the committee members. She apprised the members about different committees under FAD relating to agriculture sector and also gave a proposal to make smaller committees to strengthen the standardization activity. As FAD 11 is participatory member in many of the ISO/TC 23 Sub-Committees, Head FAD urged the committee members to actively contribute by sending comments on ISO ballots.

0.2 Opening Remarks by the Chairman

Dr. C R 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 23rd meeting. He urged the committee members to actively participate in the meeting and to have a fruitful, to the point discussion to reach a consensus and take our standardization activity forward. Dr. Mehta also gave a suggestion to formulate small working groups relating to different sectors of agricultural machinery like agriculture electronics, crop protection equipment so that they can participate in standards formulation activity at ISO level.

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ITEM 1 CONFIRMATION OF THE MINUTES OF THE TWENTY SECOND MEETING

1.1 The committee confirmed the minutes of the 22nd meeting of Agricultural Machinery and Equipment Sectional Committee, FAD 11 held on 11 August 2022 (through hybrid mode) as circulated vide our email dated 17 August 2022, 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 as *Annex 1* in the agenda.

2.2 COMPOSITION OF THE SECTIONAL COMMITTEE

2.2.1 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 1*.



2.2.2 The committee noted the fresh nominations received from the following organizations:

1. Tamilnadu Agriculture University, TNAU, Coimbatore
2. Orissa Agriculture University, OUAT, Bhubaneswar, Orissa
3. Mahatma Phule Krishi Vidyapeeth Rahuri, Maharashtra
4. Tirth Agro Technology Private Ltd. (Shaktiman), Rajkot
5. Dashmesh Mechanical works, Malerkotla, Punjab

Further the committee requested BIS Secretariat to take up these nominations in the next FADC meeting for final approval.

2.2.3 The committee deliberated on the nomination received from M/S Kubota Agricultural Machinery Ltd., Faridabad and TI Clean Mobility Pvt. Ltd. (Murugappa Group), Chennai enclosed at annex 2 and 3 respectively for co-option as a member of FAD 11. The committee approved the nomination of both the organizations and requested BIS Secretariat to take up these nominations in the next FADC meeting for final approval.



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ITEM 3 NEW/REVISED INDIAN STANDARDS PUBLISHED

3.1 The committee noted the (newly/revised) published Indian Standards as mentioned in 3.1 of the agenda and requested BIS Secretariat to circulate the same among the committee members.

ITEM 4 FINALISATION OF DRAFT INDIAN STANDARDS

4.1 Doc. No. FAD 11 (16261) F Tractor Drawn Laser Leveler Part 1 Performance Test

The committee noted the information provided in 11.1 of the addendum to agenda. Dr. Mukesh Jain apprised the committee about the changes made in the draft standard based on which, the committee decided to send the draft for a second wide circulation for a period of 30 days. The comments so received would be examined by Dr. Mukesh Jain and Shri Chandrashekhar Deshmukh for incorporation if required and circulate to committee members.

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 information provided in 5.1 of the agenda. Further, the BIS Secretariat apprised the committee that, in revised standards related to Gardening & Forestry Tool the material specifications and reference Indian Standards are not updated as per the current manufacturing practices.

Therefore, the committee decided to send these revised draft standards again to the FAD 11/Panel 3 for suggestions. Further, the committee requested the Panel to conduct a meeting on the above matter with the relevant stakeholders including Falcon Tools Pvt. Ltd. to take inputs on latest material specification used in manufacturing process to be incorporated in the standards. The documents after incorporation of the agreed changes by the Panel would be sent into wide circulation after approval of Chairperson for 60 days.

5.2 Doc. No. FAD 11 (19110) Draft Indian Standard - Agricultural Tractors Rear-mounted Power Take-off Types 1 2 3 and 4: Part 3 Main PTO Dimensions and Spline Dimensions Location of PTO (*fourth revision of IS 4931*)

The committee noted the information provided in 5.2 of the agenda and after due deliberation decided to revise IS 4931: 1995 Agricultural Tractors – Rear Mounted Power Take off Types 1,2 and 3 (*third revision*) as an adoption of ISO 500. The ISO standard has three parts:

- a) ISO 500-1:2014
Agricultural tractors — Rear-mounted power take-off types 1, 2, 3 and 4 — Part 1: General specifications, safety requirements, dimensions for master shield and clearance zone
- b) ISO 500-2:2004
Agricultural tractors — Rear-mounted power take-off types 1, 2 and 3 — Part 2: Narrow-track tractors, dimensions for master shield and clearance zone
- c) ISO 500-3:2014

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Agricultural tractors — Rear-mounted power take-off types 1, 2, 3 and 4 — Part 3: Main PTO dimensions and spline dimensions, location of PTO

The committee decided to adopt all the three parts of ISO 500 under dual numbering as IS 4931 Part 1, Part 2 and Part 3 respectively which will supersede IS 4931: 1995 and send these into wide circulation for 60 days for commenting.

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

The revised draft was received by Dr. Surendra Singh, AMMA-India. However, after due deliberation the committee decided that Shri Mohit Kumar who is leading the working group to formulate standard on Electric Tractor will provide some inputs pertaining to Electric Tractor specification to Dr. Surendra Singh. Incorporating those modifications, final revised draft will be sent to committee members for 21 days as P-draft for commenting.

ITEM 6 NEW SUBJECTS FOR STANDARDIZATION

6.1 Draft Indian Standard – Half-track Sugarcane Harvester - Specification

As directed by the committee in its 22nd meeting of FAD 11, a panel meeting of FAD 11/P1 was held on 11 January 2023 under the convenorship of Dr. Mukesh Jain to discuss the above draft Indian Standard. It was deliberated in the meeting that the present Indian Standard IS 17626: 2021 Self-Propelled Sugarcane Harvester — Test Methods does not restrict to use the specifications of half-track sugarcane harvester. Also, no inputs were received from panel members for finalizing the specifications of half-track sugarcane harvester, therefore, the panel decided to drop the subject. Since some of the issues raised by CNH to incorporate certain administrative and technical extension criteria in IS 17626 which was beyond the scope of the panel, Dr. Mukesh Jain requested the committee to reconstitute the panel to discuss on the above issues.

Accordingly, the committee decided to add some new members to the panel related to the manufacturing of Sugarcane Harvester as per recommendation of Dr. Mukesh Jain.

6.2 Doc. No. FAD 11 (16313) – Paddy Transplanter Machine – Test Method

The committee deliberated on the revised draft received by Dr. Surendra Singh, AMMA-India on above subject and decided to send the draft for wide circulation for a period of 60 days without any modification.

6.3 Draft Indian Standard – Round Baler machine – Specification

The committee deliberated on the drafts enclosed at 6.3 of the agenda and took the following decisions:-

- a. For terminology and specification of Round Baler Machine, the committee decided to adopt ISO 11450:1999 (Equipment for harvesting and conservation — Round balers — Terminology and commercial specifications) as new standard under dual numbering and send for wide circulation for a period of 30 days for comments.
- b. The committee decided to send the draft standard on Test method for Round Baler machine into wide circulation for a period of 30 days for comments.

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Further, the committee was apprised about the fact that Square Baler machines are also available in Indian Market. Following which the task was taken up by CNH, India to submit the working draft on the Square Baler machine specification and test method.

6.4 Draft Indian Standard – Super SMS- Performance Test method

The committee noted the information provided in 11.1 of the addendum to agenda. After due deliberation the committee decided to change the title of the draft standard on the above subject to *Straw management system for combine harvesters- Performance test method* and to circulate the working draft among the committee members as P-Draft for a period of 21 days for commenting purpose.

6.5 Draft Indian Standard – Electrostatic Sprayer

The committee noted the information given in 6.5 of the agenda. Further, Dr. Bikram Jyoti and Shri Deshmukh also summarized the committee about the progress made in preparation of the draft standard. Based on which, the committee advised the working group to formulate draft on the above subject considering the different power sources.

The committee asked the WG to submit the working draft on above subject to the FAD 11: 01 Sub-Committee within a period of 15 days for necessary deliberation. After making required modifications, the draft will be circulated among the committee members as P-draft.

ITEM 7 REVIEW OF INDIAN STANDARDS

7.2 Revision of Pre-2000 Indian Standards

7.2.1 The committee noted the information provided in 7.2.1 of the agenda and took the following decision regarding the revision of Indian Standards related to Tractors and Power tillers those were taken up by FAD 11/ Panel 5:-

S. No.	IS to be reviewed	
1	IS 14414: 1996/ISO 789-7: 1991 Agricultural tractors - axle Power determination-test procedures	The committee decided to reaffirm the standard as it is based on the latest ISO standard.
2	IS 11442 : 1996 Agricultural tractors – Operator’s field of vision - test procedures	Revised draft was submitted by Shri Man Singh Jagdale, John Deere which was prepared aligning to AIS 107. The committee after due deliberation decided to circulate the draft as P-draft among the members for a period of 21 days for commenting purpose. In case no comments are received, the committee may authorize BIS Secretariat to send the draft into wide circulation for 60 days after approval of Chairperson.

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3	IS 11082: 1984 Technical requirements of agricultural tractors for wet land cultivation	<p>The committee noted the information provided in 7.2.1 Sl. No. 3 of the agenda.</p> <p>Further, the revised draft was submitted by Shri Man Singh Jagdale, John Deere which was prepared as per the OECD test code.</p> <p>The committee after due deliberation decided to circulate the draft as P-draft among the members for a period of 21 days for commenting purpose. In case no comments are received, the committee may authorize BIS Secretariat to send the draft into wide circulation for 60 days after approval of Chairperson.</p>
4	IS 14980 (Part 1) : 2001/ISO 8759-1: 1998 Agricultural Wheeled Tractors - Front - Mounted Equipment : Part 1 Power Take - Off and Three - Point Linkage	<p>The committee decided to revise the existing standard by adopting latest edition of ISO 8759-1: 2018 and send into wide circulation for 60 days for commenting.</p>
5	IS 6483 : 2004/ISO 7072: 1993 Tractors and Machinery for Agriculture and Forestry - Linch Pins and Spring Pins - Dimensions and Requirements (Second Revision)	<p>The committee decided to reaffirm the current standard as it is identical to the latest edition of ISO 7072: 1993.</p>
6	IS 4468 Part 1 & IS 4468 Part 2 Part 1 -Agricultural wheeled tractors - Rear-mounted three-point linkage - Part 1: Categories 1, 2, 3 and 4. Part-2 -- Agricultural wheeled tractors - Three-point linkage, Category 1 N (Narrow Hitch)	<p>The committee noted the information provided in 7.2.1 Sl. No. 6 of the agenda.</p> <p>After due deliberation the committee decided to withdraw IS 4468 (Part 1) : 1997 and IS 4468 (Part 2) : 1993.</p> <p>Also, it was observed by BIS Secretariat that, the amendment 1 to ISO 730: 2009 is already covered in IS 17231: 2019 which is an identical adoption of ISO 730.</p> <p><i>Note: Both IS 4468 Part 1 and 2 are covered in IS 17231</i></p>
7	<u>IS 12180 (Part 1) : 2000/ISO 5131: 1996</u> Tractors and Machinery for Agriculture and Forestry - Noise Measurement - Method of test : Part 1 Noise at the Operator's	<p>As recommended by the FAD 11/ Panel 5 to create an indigenous standard aligning to AIS 115 Part-1 as per CMVR Shri Mohit Kumar, ITL submitted the revised draft standard.</p> <p>However after due deliberation the committee asked Shri Mohit Kumar to submit the draft highlighting all the changes made in the standard for re-examination by the FAD 11/ Panel 5.</p>

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	Position - Survey Method (First Revision)	Incorporating all the necessary modifications the document will be circulated as P-draft among the committee members for 21 days for comments.
8	<u>IS 12180 (Part 2) : 2000/ISO 7216: 1992</u> Tractors and Machinery for Agriculture and Forestry - Noise Measurement - Method of Test : Part 2 Noise Emitted When in Motion (First Revision)	As recommended by the FAD 11/ Panel 5 to create an indigenous standard aligning to AIS 115 Part-2 as per CMVR Shri Mohit Kumar, ITL submitted the revised draft standard. However after due deliberation the committee asked Shri Mohit Kumar to submit the draft highlighting all the changes/modifications made in the standard for re-examination by the FAD 11/ Panel 5. Incorporating all the necessary modifications the document will be circulated as P-draft among the committee members for 21 days for comments.
9	<u>IS 13549 : 1992/ISO 5676: 1983</u> Tractors and Machinery for Agriculture and Forestry - Hydraulic Coupling - Braking Circuits	The committee noted that ISO 5676 is under revision at ISO level and as the ISO/FDIS is launched it may simultaneously be sent for wide circulation for a period of 30 days as revision of IS 13549.
10	<u>IS 9864 : 1981</u> Guidelines for Stocking Spare Parts of Agricultural Tractors	The committee deliberated on the present practice being followed for stocking spare parts of agricultural tractors. Further, the committee decided to re-circulate the standard to TMA for 21 days for inputs and requested BIS Secretariat to check whether the standard is referred in other Indian Standards. If the standard is no more used in the Tractor industry, then it shall be withdrawn after the approval of Chairperson of FAD 11.
11	<u>IS 10703 : 1992</u> Agricultural Tractors - Maximum Actuating Forces Required to Operate Controls (First Revision)	The committee noted the information given in 7.2.1 Sl. No. 11 of the agenda and after due deliberation decided to withdraw IS 10703.
12	<u>IS 11822 : 1986</u> Methods of test for Spark Arrester of Agricultural Tractors	The committee after due deliberation decided to re-circulate the standard to TMA for 21 days to seek comments on the relevance and use of the standard in present context. If the standard is not practiced anymore, the committee may consider withdrawing the standard after the approval of the Chairperson.

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13	IS 13548 : 1992 / ISO 5008:2002 Agricultural Wheeled Tractors and Field Machinery - Measurement of Whole - Body Vibration of the Operator	The committee noted the information given in 7.2.1 Sl. No. 13 of the agenda.
14	<u>IS 6840 : 2013</u> Preventive Maintenance of Agricultural Wheeled Tractors - Code of Practice (First Revision)	Revised draft of IS 6840 and IS 9164 was submitted by CFMTTI, Budni. The committee after due deliberation decided to circulate the revised draft among the committee members as P-draft for a period of 30 days for commenting purpose.
15	<u>IS 9164 : 1979</u> Guide for Estimating Cost of Farm Machinery Operation	
16	IS 15925 : 2012/ISO 11449 : 1994 Walk - Behind Powered Rotary Tillers - Definitions, Safety Requirements and Test Procedures	The committee asked Shri A.R. Ganesh Kumar, VST to submit comments on the review of IS 15925 within a period of 21 days.
17	<u>IS 8265 : 1996</u> Agricultural Tractors - Guards for Power Take - Off (PTO) Drive - Shafts (Second Revision)	IS 8265: 1996 is based on ISO 5674-1: 1992 and ISO 5674-2: 1992 have been withdrawn and replaced by ISO 5474: 2004. The committee noted that ISO 5674 is under revision at ISO and as the ISO/FDIS is launched it may simultaneously be sent for wide circulation as revision of IS 8265 for a period of 30 days.
18	<u>IS 9869 : 1981</u> Technical Requirements for Power Take - Off Pulley for Agricultural Tractors With Type 1 PTO Shaft	As the standard is no more being referred or used in present scenario by the tractor industry, the committee after due deliberation decided to withdraw the Indian Standard.
19	<u>IS 12362 (Part 1) : 2007/ISO 6489-1: 2001</u> Agricultural Vehicles - Mechanical Connections Between Towed and Towing Vehicles : Part 1 Dimensions of Hitch - Hooks (Second Revision)	As recommended by the FAD 11/Panel 5 to create an indigenous standard aligning with AIS 091 Part 2 draft was submitted by Shri Pradeep Shinde, M&M. However the draft was not as per BIS format. Further, the formatted draft was submitted by Shri Shinde. The committee requested BIS Secretariat to circulate the draft received among the committee members as P-draft for a period of 21 days for commenting purpose.

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20	<p>IS 12953 : 1990 Drawbar for Agricultural Tractors - Link Type – Specification</p>	<p>The revised draft was submitted by Shri Pradeep Shinde, M&M. However the draft was not as per BIS format. Therefore the committee asked Shri Pradeep to share the formatted draft, which further on receipt would be circulated among the committee members as P-draft for a period of 21 days for commenting purpose.</p>
21	<p>IS 11859 : 2004 Agricultural Tractors - Turning and Clearance Diameters - Methods of Test (First Revision)</p>	<p>IS 11859: 2004 is an indigenous standard and was based on ISO 789-3: 1993. ISO got revised in 2015. The committee after due deliberation decided to revise IS 11859 as an adoption of ISO 789-3: 2015 under dual numbering and send into wide circulation for a period of 30 days.</p>
22	<p>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)</p>	<p>The committee noted the information given in the 7.2.1 Sl. No. 22 of the agenda. Based on the recommendation of BIS secretariat, the committee decided to adopt the same title for IS 12239 as of ISO 4254-1. BIS secretariat apprised the committee about the amendment of ISO 4254-1 which was published in 2021. The committee requested BIS secretariat to circulate the amendment among TMA and CFMTTI, Budni for review.</p> <p>Further, the committee decided to circulate different ISO 4254 series other than Part 1 and Part 6 among the members for review purpose and if found appropriate, the committee may consider them for adoption under dual numbering or create indigenous standard after modification.</p> <p>Also a new standard series ISO 26322</p> <ul style="list-style-type: none"> A) ISO 26322-1:2008 Tractors for agriculture and forestry — Safety — Part 1: Standard tractors B) ISO 26322-2:2010 Tractors for agriculture and forestry — Safety — Part 2: Narrow-track and small tractors <p>for safety of agricultural and forestry tractors has been published by ISO. The committee requested BIS Secretariat to circulate ISO 26322 Part 1 and Part 2 to TMA and CFMTTI, Budni for reviewing and based on the recommendation the committee may consider them for adoption as Indian Standard.</p>

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23	IS 13064 : 1991 Power Tillers - Installation and Preventive Maintenance – Guidelines	The committee note the information given in 7.2.1 Sl. No. 23-24 of agenda. BIS Secretariat apprised the committee that as per SRFMTTI, Anantpur no changes need to be made in the current standards. However, the committee gave another one month to Shri A.R. Ganesh Kumar, VST for reanalysing the standards. If no comments are received then, the current standards would be revised with necessary editorial changes.
24	IS 6690 : 1981 Specification for Blades for Rotavator for Power Tillers (First Revision)	
25	IS 9935 : 2002 Power Tiller - Test Code (Second Revision)	
26	IS 11858 : 1986 Specification for Handle Grip for Power Tiller	
27	IS 12224: 1987 Method of Test for Hydraulic Power and Lifting Capacity of Agricultural Tractors.	
		See 7.3.1 Sl. No. 9

7.2.2 The committee took the following decision regarding the revision of Indian Standards related to Plant Protection Equipment:

S. No.	IS No.	Title	Decision of the committee
Pre 2000 Indian Standards Related to PPE			
1.	IS 1970: 1995	Crop Protection Equipment - Hand- Operated Compression -Knapsack Sprayer - Specification <i>Fifth Revision</i>	In its 20 th meeting of FAD 11 held on 3 rd August 2021, the committee approved the sixth revision of IS 1971 and IS 1970 for publication.
2.	IS 1971: 1996	Crop Protection Equipment - Hand- Operated Stirrup - Type Sprayer - Specification <i>Fifth revision</i>	However, while processing the document at BIS Secretariat for publication it was found that some tests method other than required for stirrup type sprayers and knapsack sprayer were included in the draft. For clarification the document was sent to Dr. K.N. Agrawal, CIAE, Bhopal, Convenor of FAD 11: 01(Sub-Committee for review of Indian Standards related to plant protection equipment). As already the drafts have completed its wide circulation stage way back and only some editorial modifications were made

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			in the standards, the committee approved the draft revision to be sent for publication.
3.	IS 3062: 1995	Crop Protection Equipment - Rocker Sprayer - Specification <i>Fourth Revision</i>	Dr K.N. Agrawal apprised the committee that revision of the standards is taken up him and Dr. P.U. Sahare and draft is under preparation. The committee requested Dr. Agrawal to submit the draft revision of the three standards within a period of 1 month.
4.	IS 3652: 1995	Crop Protection Equipment – Foot Sprayer - Specification <i>Fourth Revision</i>	Dr. KN Agrawal and Shri Jatin Patel, ASPEE apprised the committee about the fact that Hand-Rotary Duster Belly-Mounted Type and Shoulder-Mounted Type are no more used. Therefore, after due deliberation and based on comments received the committee decided to withdraw these standards.
5.	IS 3906: 1995	Crop Protection Equipment – Hand operated Knapsack Sprayer Piston Type	The committee noted the information provided in 7.2.2 Sl. No. 8 of agenda.
6.	IS 5135 (Part 1) :1994	Specification for Hand – Rotary Duster Part 1 Belly – Mounted Type <i>Second Revision</i>	The committee noted the information provided in 7.2.2 Sl. No. 9 of agenda.
7.	IS 5135 (Part 2) :1994	Specification for Hand Rotary Duster Part 2 Shoulder Mounted Type <i>First Revision</i>	The committee was apprised about the fact that the standard is more under practice as all the operation and preventive maintenance criteria is covered in respective sprayer standards. Therefore, after due deliberation and based on comments received committee decided to withdraw the standard.
8.	IS 7593 (Part 1) :1986	Specification for Power – Operated Pneumatic Sprayer - Cum – Duster Part 1 Knapsack Type <i>First Revision</i>	The committee asked Shri Varpe, ASPEE Group to analyse and submit the revised draft standard within a period of 1 month incorporating all the necessary modifications considering the current practice being followed.
9.	IS 8480: 1996	Crop Protection Equipment-Glossary of Terms First Revision	Shri Chandrashekhhar Deshmukh, John Deere apprised the committee about the progress
10.	IS 9632: 1980	Code of Practice for Operation and Preventive Maintenance of Crop Protection Equipment	
11.	IS 10134 : 1994	Methods of Test for Manually - Operated Sprayers <i>First Revision</i>	
12.	IS 11429 : 1985	Methods for Calibration of Sprayers	

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			made regarding the review. Further, the committee asked Shri Deshmukh to submit the draft within a period of 1 month for circulation.
13.	IS 14459 : 1997	Crop Protection Equipment - Battery Operated Rotary Atomiser Disc Type ULV sprayer -Specification	The committee noted that Dr. PU Sahare and Dr. Bikram Jyoti are working on the revision of the IS. Further, the committee asked Dr. Jyoti and Dr. Sahare to submit the revised draft within a period of 1 month incorporating necessary changes.
14.	IS 12482 : 1988	Methods of Test for Manually Operated Dusters	As no changes need to be incorporated, the committee recommended to revise the IS in the latest style and format of Indian Standard and update all the referred Indian Standards.
15.	IS 14855 (Part 1) : 2000	Plant Protection and Vector Control Equipment – Fogging Machines - Specification Part 1 Pulse - Jet - Type thermal Fogger	The committee requested BIS Secretariat to communicate or conduct an Industrial Visit to ASPEE Group, Mumbai and Foggers India Pvt Ltd, Mumbai to take comments regarding the review of the Indian Standard on Fogging Machines and submit the draft within 2 months for circulation among the members of the FAD 11: 01 Sub-Committee for deliberation.
16.	IS 14855 (Part 2) :2001	Plant Protection and Vector control Equipment - Fogging Machines - Specification Part 2 Air – Blower Type Thermal Fogger	
17.	IS 15924: 2011 ISO 22866: 2005	Equipment for Crop Protection- Methods of Field Measurement of Spray Drift	The committee noted the information provided in the 7.2.2 Sl. No. 17 and 18 of the agenda.
18.	IS 11313 : 2007	Hydraulic Power Sprayers - Specification <i>First Revision</i>	
19.	IS 12239 (Part 6) :2019 ISO 4254-6: 2013	Agricultural Machinery – Safety Part 6 Sprayers and Liquid Fertilizer Distributors	IS 12239 (Part 6) :2019 is an identical adoption of ISO 4254-6: 2013.However, the ISO standard got revised in 2020. The committee after due deliberation decided to adopt the latest edition of ISO standard and send for wide circulation for a period of 30 days.

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20.	IS 15918 : 2011 ISO 4102:1984	Equipment for Crop Protection - Sprayers - Connection Threading	The committee noted that all the three standards are identical adoption of ISO standard. As no revision has been done at ISO level, the committee decided to reaffirm the IS as it is.
21.	IS 15923 (Part 1) :2011 ISO 22369 Part 1:2006	Equipment for Crop Protection - Drift Classification of Spraying Equipment Part 1 Classes	
22.	IS 15919 : 2012 ISO 9898 : 2000	Equipment for Crop Protection - Test Methods for Air-Assisted Sprayers for Bush and Tree Crops	
23.	IS 15920 : 2012	Equipment for Crop Protection -Sprayer Nozzles - Colour Coding for Identification	As per the recommendation of FAD 11: 01 Sub-Committee the committee decided not to make any modification in the current Standard
24.	IS 15921: 2011 ISO 14710:1996	Equipment for Crop Protection - Air - Assisted Sprayers - Dimensions of Nozzle Swivel Nuts	The committee after due deliberation decided to circulate the revised draft received by Shri Deshmukh among the committee members for a period of 21 days for commenting.

7.2.3 As decided in the 22nd meeting of FAD 11 held on 11 August 2022, the list of Pre-2000 Indian Standards related to Tractors & Power Tillers , Plant Protection Equipment and other standards related to Agricultural Machinery were circulated to TMA & CFMTTI, FAD 11: 01 Sub-Committee and AMMA-Indian & CIAE, Bhopal respectively. Further, the task of revision of the standards other than on which discussion is already going will be taken up in subsequent committee or panel meetings. For reference, all the three list are enclosed at annex 4,5 and 6.



Annex 4.docx



Annex 5.docx



Annex 6.docx

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7.3 Revision of ISO adopted Indian Standards

7.3.1 The decision taken by the committee regarding the revision of ISO adopted Indian Standards is as follows:

S. No.	IS No. / Title	Decision of the committee
1.	IS 6283 (Part 1): 2006/ ISO 3767-1 Tractors and Machinery for Agriculture and Forestry, Powered Lawn and Garden Equipment - Symbols for Operator Controls and Other Displays: Part 1 Common Symbols (Second Revision)	<i>Doc No. FAD 11 (18806)</i> revision to IS 6283 (Part 1) and <i>Doc No. FAD 11 (18636)</i> revision to IS 6283 (Part 2) were sent for wide circulation for a period of 30days. However, no comments were received during the WC stage , therefore, the committee approved the subject for publication.
2.	IS 6283 (Part 2) : 2007/ ISO 3767-2 Tractors and Machinery for Agriculture and Forestry, Powered Lawn and Garden Equipment - Symbols for Operator Controls and Other Displays : Part 2 Symbols for Agricultural Tractors and Machinery (Second Revision)	
3.	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)	IS 8132: 1999 is an identical adoption of ISO 3600. However, the ISO standard got revised in 2022. The committee after due deliberation decided to adopt the latest edition of ISO standard and send for wide circulation for a period of 30 days.
4.	IS 10743 : 1983/ ISO 789-6 Method for Determination of Centre of Gravity of Agricultural Tractors	All these IS were taken up for revision as an adoption of latest edition of ISO standards. The committee was apprised by BIS Secretariat that all these documents are under wide circulation stage. Further, the committee after due deliberation decided that if no comments received in wide circulation stage the document may be sent for publication after the approval of the Chairperson.
5.	IS 13732 : 2021/ ISO 5675 Agricultural Tractors and Machinery - General Purpose Quick - Action Hydraulic Couplers	
6.	IS 16820 (Part 1) : 2018 ISO 12003-1:2008 Agricultural and Forestry Tractors Roll - Over Protective Structures on Narrow - Track Wheeled Tractors : Part 1 Front - Mounted ROPS	

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7.	<p>IS 16820 (Part 2) : 2018 ISO 12003-2 : 2008 Agricultural and Forestry Tractors - Roll - Over Protective Structures on Narrow - Track Wheeled It is requested that committee should notify which all standards cover the requirements, specifications given in IS 13733. Tractors : Part 2 Rear Mounted ROPS</p>	<ul style="list-style-type: none"> • Doc No. FAD 11 (21773) revision to IS 16820 (Part 1) • Doc No. FAD 11 (21777) revision to IS 16820 (Part 2) • Doc No. FAD 11 (21769) revision to IS 12362 (Part 3)
8.	<p>IS 12362 (Part 3): 1994/ ISO 6489-3: 2004 Agricultural Vehicles - Mechanical Connections on Towing Vehicles: Part 3 Tractor Drawbar (First Revision)</p>	
9.	<p>IS 12224 : 1987 Method of Test for Hydraulic Power and Lifting Capacity of Agricultural Tractors</p>	<p>IS 12224: 1987 was based on ISO 789-2: 1984. As per the decision of the 22nd meeting of FAD 11 held on 11 August 2022, revision of IS 12224 was taken up as an adoption of ISO 789-2: 2018. Accordingly the revised draft was sent for wide circulation for a period of 30 days.</p> <p>However, revised indigenous draft was also received from Shri Himanshu Mishra, CNH aligning to ISO standard and which incorporated all the previous amendments to the IS.</p> <p>Considering the above two facts, the committee decided to circulate the ISO 789-2: 2018 and revised draft submitted by Shri Mishra to committee members for commenting purpose.</p>
10.	<p>IS 13733 : 1993/ ISO 5669 Agricultural Trailers and Trailed Equipment - Braking Cylinders – Specifications</p>	<p>The committee noted that the standard is neither being used in tractor industry nor at testing centres. Therefore, after due deliberation the committee decided that standard shall be withdrawn.</p>

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8 NEW WORK ITEM PROPOSAL

8.1 Draft Indian Standard on Drone Seeder and Drone Sprayer

The committee noted the information provided in 8.1 of the agenda. Further, Shri Chandrashekhar Deshmukh, John Deere apprised the committee about the standard being formulated at ISO level on Drone Sprayer. The committee requested BIS Secretariat to circulate the draft standards being formulated at ISO level on the above subject among the panel members for reference purpose. Further the committee requested the panel to expedite the work.

As no working draft was available regarding drone seeder technology, the committee requested the panel to expedite the work to formulate draft on the drone seeder.

8.2 Draft Indian Standard on Electric Tractor

The committee noted the information provided in 8.2 of the agenda. The members of the working group to formulate standard on Electric Tractor apprised the committee about the progress made by the WG and future work plan. Further the committee advised the WG to also go through standards based on other electric vehicles for a better understanding to formulate a draft standard.

The committee asked the WG to submit a working draft by 28 February 2023 which on receipt would be circulated among the committee members for commenting.

9 INTERNATIONAL ACTIVITIES

The committee deliberated on the analysis made by Member Secretary provided in 9.1 of the agenda. Further Dr. C.R. Mehta, Chairperson FAD 11 requested the BIS Secretariat to formulate mirror working groups for each Sub-Committee under ISO/TC 23 irrespective of P or O membership in consultation with the committee members.

10 COMMENTS ON INDIAN STANDARDS

10.1. Comment received on IS 13539: 2018 Power Tiller — Recommendations On Selected Performance And Other Characteristics (second revision) regarding the ambiguity in power capacity of Power Weeder and Power Tiller by Dr. Surendra Singh, Technical Advisor, AMMA-India.

The committee noted the information provided in 10.1 of the agenda and after due deliberation, decided to modify the definition of power tiller as given below:

Definition of Power Tiller as given in Clause 3.1 of IS 13539: 2018

“Power Tiller is an agricultural machinery used for soil preparation having a single axle, in which the direction of travel and its control during field operation is performed by the operator. It is self-powered, self-propelled, and can pull cultivator, harrow, plough, various seeder, harvester and such other suitable attachments. The equipment may be walk behind or riding attachment type and should be capable of being coupled to a trailer that can be used for

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*transportation of goods of not less than 1 ton capacity. The maximum speed of the power tiller when coupled to a trailer shall not exceed 22 kmph. **The minimum rated horsepower output of the power tiller engine shall not be less than 8 bhp (Break Horsepower).***

Modified Definition

*“Power Tiller is an agricultural machinery used for soil preparation having a single axle, in which the direction of travel and its control during field operation is performed by the operator. It is self-powered, self-propelled, and can pull cultivator, harrow, plough, various seeder, harvester and such other suitable attachments. The equipment may be walk behind or riding attachment type and should be capable of being coupled to a trailer that can be used for transportation of goods of not less than 1 ton capacity. The maximum speed of the power tiller when coupled to a trailer shall not exceed 22 kmph. **The rated horsepower output of the power tiller engine shall be above 10 bhp (Break Horsepower).**”*

The committee requested BIS secretariat to take up the matter as priority and send the draft amendment into wide circulation for a period of 30 days for commenting.

10.2 Comments received on **IS 8133: 2021** (Guidelines for Actuating Forces, Location and Operation of Operator Controls on Agricultural Tractors and Self-propelled Machinery) by Shri Mohit Kumar, ITL.

Proposed	Reference clauses	Remark / Importance	Decision of the committee
For any other symbols related to agricultural tractors ISO 7000 / ISO 3767-1 / ISO 3767-2 may also be referred.	4.2.1 B.2.2 Labels C.1.4	These are widely referred open source ISO library of registered safety symbol & OEM are using lots of symbols from it for new concepts. It is also permitted in CMVR , Europe .	The committee after due deliberation accepted the proposal and decided to issue an amendment to make the proposed modification. The committee requested BIS Secretariat to send the draft amendment into wide circulation for a period of 30 days.
The control shall be moved away from the operator (generally forward) or toward the operator to increase engine speed.	1.2.2	90 % of hand throttle Control movement in Indian industry is towards operator to increase speed . so to avoid future issues it was agreed to include it .	The committee after due deliberation accepted the proposal and decided to issue an amendment to make the proposed modification. The committee requested BIS Secretariat to send the draft amendment into wide circulation for a period of 30 days.

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Type of control	Maximum force (N)	Table 3 — Maximum permitted effort (Clause A-1)	250 N is possible only in Power Mode ON test , so text was added . Parking Brake hand operated force need to specified separately to differentiate	The committee noted that the forces given in the Clause A-1 of IS 8133 are maximum control actuating forces and not the operating forces. Therefore, the committee after due deliberation decided to not to make any modification to this part.
Steering wheel (for Power on Mode)	250 N for 5 s 8 Sec steering time			
Service brake (as per IS 12061)	600 N			
Parking Brake (Hand Operated) (as per IS 12061)	400 N			

10.3 The committee noted the comments received on **IS 17045: 2018** Tractor Driven Rotary Tiller Test Procedure and **IS 6690: 1981** Specification For Blades For Rotavator For Power Tillers by Dr. Surendra Singh, AMMA-India on inclusion of Boron Steel as raw material for construction of Blades of rotavator and change in the ranges for hardness of the blade. Further, the committee accepted the proposal of Dr. Surendra Singh to merge the two standards so that it easier for the end user to refer the standard.

The committee after due deliberation decided to recirculate the merged draft document among the committee members as P-draft for a period of 21 days for commenting.

ITEM 11 ANY OTHER BUSINESS

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

The committee noted the draft standard on High Clearance E-Sprayer - Specifications and Test Methods submitted by Dr. Surendra Singh, Technical Advisor, AMMA-India. The committee after due deliberation decided to circulate the draft among the members of the FAD 11: 01 Sub-Committee on Plant Protection Equipment for reviewing purpose for a period of 30 days.

ITEM 12 TIME AND PLACE FOR THE NEXT MEETING

The committee decided to hold its next meeting in the month of April, 2023 in a Physical mode.

ANNEX-A

Attendance for the 23rd Meeting of Agricultural Machinery and Equipment Sectional Committee FAD 11 held on 23rd January 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 Shri Mitul Panchal
3.	Aspee Agro Equipment Private Limited, Mumbai	Shri Jatin S. Patel Shri Gangadhar Varpe
4.	CCS Haryana Agricultural University, Hisar	Dr. Vijaya Rani
5.	CLAAS India Private Limited, Chandigarh	Shri Krishna Prabhakar Singh
6.	CNH Industrial India Private Limited, Pune	Shri Santhosh Rao Shri Sujit Hinge
7.	Central Farm Machinery Training and Testing Institute (CFMT&TI), Budni	Dr. P.K. Pandey Shri C. V. Chimote
8.	Consumer Guidance Society of India (CGSI), Mumbai	Dr. Sitaram Dixit
9.	ICAR - Central Institute of Agricultural Engineering, Bhopal	Dr. Uday. R. Badegaonka Dr. Dilip Jat (YP)
10.	ICAR - All India Coordinated Research Project on Ergonomics and Safety in Agriculture, Bhopal	Dr. K. N. Agrawal
11.	ICAR - All India Coordinated Research Project on Farm Implements and Machinery (AICRP-FIM), New Delhi	Dr. C. R. Mehta
12.	ICAR - All India Coordinated Research Project on Utilization of Animal Energy(AICRP), Bhopal	Dr. M. Din
13.	Indian Council of Agricultural Research, New Delhi	Dr. Panna Lal Singh
14.	John Deere India Private Limited, Pune	Shri Anand Raj Shri Chandrashekhar Deshmukh

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15.	Kerala Agro Machinery Corporation Ltd. (KAMCO)	Shri P.C. Sajiman Shri Arun Kumar T.K.
16.	Mahindra and Mahindra Limited, Mumbai	Shri Pradeep Shinde
17.	Ministry of Agriculture, Department of Agriculture, New Delhi	Shri Arvind Meshram
18.	National Institute of Plant Health Management (NIPHM), Hyderabad	Dr. Vidhu Kampurath P. Ms. M. Udaya Bhanu
19.	Northeastern Region Farm Machinery Training and Testing Institute (NER-FMTTI) Biswanath Chariali	Dr P. P. Rao
20.	Northern Region Farm Machinery Training and Testing Institute (NRFMT&TI), Hisar	Dr. Mukesh Jain
21.	Punjab Agricultural University, Ludhiana	Dr. Rajesh Goyal
22.	Southern Region Farm Machinery Training and Testing Institute (SRFMT&TI), Anantapur	Dr. P Kamlabai
23.	Progress Farmer	Shri Suhas Manohar
24.	Member Secretary, FAD 11, BIS	Shri Vikrant Chauhan
Invitees/Also attended (with the permission of Chair):		
25.	Head, Food and Agriculture Department, BIS	Smt. Suneeti Toteja
26.	Previous Member Secretary, FAD 11, BIS Member Secretary FAD 22	Shri Debasish Mahalik
27.	Tamilnadu Agriculture University, TNAU, Coimbatore	Dr. R. Kavitha
28.	Orissa Agriculture University, OUAT, Orrisa	Dr. Deberaj Behera
29.	Central Institute of Agricultural Engineering, Bhopal	Dr. Bikram Jyoti
30.	Dashmesh Mechanical works, Punjab	Shri Piyush Kumar
31.	M/S Kubota Agricultural Machinery Ltd.	Shri Ashish Mallarh
32.	TI Clean Mobility Pvt. Ltd., Murugappa Group	Shri Vivek Gupta
33.	International Tractors Limited, Sonalika Group, Hoshiarpur	Shri Mohit Kumar
34.	John Deere India Private Limited, Pune	Shri Mansingh Jagdale
35.	CNH Industrial India Private Limited, Pune	Shri Himanshu Mishra
36.	CNH Industrial India Private Limited, Pune	Shri Veenit Negi
37.	Bullworks Mobility	Shri Dinesh
38.	Falcon Tools Pvt Ltd	Shri Gurchintan Singh

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39.	BCS Group	Shri S.K. Bansal
40.	IoTech World	Shri Ritesh Singh