

F.No. 13-17 /2019-M&T(I&P)
Government of India
Ministry of Agriculture and Farmers Welfare
Department of Agriculture, Cooperation and Farmers Welfare
(Mechanization & Technology Division)

Krishi Bhawan, New Delhi
Dated 24th December, 2018

Subject: Draft Minutes of meeting held under the Chairmanship of JS (M&T) on 17.12.2019 to finalize the Critical specification of additional Machineries.

I am directed to attach herewith the draft minutes of meeting convened under the Chairmanship of Shri Ashwani Kumar, Joint Secretary (M&T) on 17.12.2019 in Conference Hall 142, Krishi Bhawan to determine **Critical Technical Specifications** of additional 16 Farm Machinery & equipments.

The draft Critical Specifications finalized during the above meeting, are also attached herewith to offer your comment on or before 17.01.2020 before finalizing the same.

The Specifications as above are also uploaded on the website <http://farmech.dac.gov.in/> to offer the comments from all stake holders.

(P.K. Chopra)
AC (M&T)

To,

As per list attached

Subject: Minutes of meetings held under the Chairmanship of JS (M&T). on 17.12.2019 to determine Critical Technical Specifications of additional Farm Machinery

A meeting was convened on under the Chairmanship of Shri Ashwani Kumar, Joint Secretary (M&T) on 17.12.2019 in Conference Hall 142, Krishi Bhawan to determine **Critical Technical Specifications** of additional 16 Farm Machinery & equipments. The Agenda of the meetings were as below:

- (1) to discuss and finalise critical technical specifications of the 16 additional machineries as forwarded by the Technical Committee of AMMA
- (2) to discuss the inclusion of Tractor Trolley (single excel) up to 5 ton capacity and water tanker in the subsidy list of SMAM guidelines
- (3) Any other issue with the permission of the Chairman

The meeting was attended by Executive Members of All India Manufacturers Associations of Tractors (TMA), Combine Harvesters(AICMA), Power Tillers(PTMA) and Agricultural Machinery(AMMA), Testing authorities concerned of FMTTIs & approved test centers of DAC&FW at ICAR institutes, and Nodal officer Concerned of States etc. The list of the participant is at Annexure-1.

In the opening remarks of JS(M&T), he welcomed the participants and briefed the House about the purpose of the meeting and advised the participants to review and finalized the draft Critical Technical Specifications of Additional 16 Agricultural Machineries and Equipments of Tractors above 20HP, at par with the global standards to ensure that good quality of Agricultural machines & equipments equipped with advance/latest customized technologies are distributed to the farmers under the SMAM & other Schemes of DAC&FW, Ministry of Agriculture and Farmers Welfare, implemented through the respective State Agriculture Departments.

All the manufactures &-manufactures/members of their associations, representatives of state Agriculture Departments are advised to ensure that all the manufacturers are registered on the DBT Portal of Ministry along with there dealer network failing which, they would not be allow to participant in the Gov. Schemes from 2020-21. It is also advised to the representatives of State Agriculture Departments to use the DBT Portal of this Ministry or to provide interface with their State DBT Portal for the approval of the Annual Action Plan & to monitor all relative activities of the SMAM/CRM schemes to ensure the transparency in the implementation of the Schemes.

After opening remarks of the chairman DC(M&T) made persentation on the following draft Critical Technical Specifications of the following additional Farm machineries:

- 1) Tractor Operated Land Leveler,
- 2) Bund Formers
- 3) Tractor Mounted Disc Mower,
- 4) Self Propelled Fodder Harvester Mower – 3 Wheel,
- 5) Self Propelled Fodder Harvester Mower – 4 Wheel,
- 6) Self Propelled Reaper Binder –3 Wheel,
- 7) Self Propelled Reaper Binder – 4 Wheel,
- 8) Tractor Drawn Agricultural Trailer,
- 9) Tractor Operated 3- row Sugarcane planter,
- 10) Round Baler,

- 11) Roto- Puddler/Rice Harrow,
- 12) Ridge Tiller,
- 13) Super Straw management System (SMS) to be Attached with Track Type Combine Harvester,
- 14) Super Straw management System (SMS) to be Attached with Self Propelled Wheel Type Combine Harvester,
- 15) Super Seeder
- 16) Reversible Mould board plough (Mechanically).

The draft Critical Technical Specifications of the above machines, were prepared by the Chairman of Technical Committee of All India Agricultural Machinery Manufacturers Association (AMMA). After the detail discussion, with the participants the final draft of the critical specifications in respect of the 12 machines were finalized as per details at Annexure 2-Annexure 13 after incorporating the inputs received from the participants.

Final/Closing Remarks of the Chairman:

- 1) At the end of the meetings JS (M&T) has advised the officer concern of M&T division to take the approval of Competent Authority of this Ministry for subsequent batch testing of the Agri-Machinery by the end of December, 2019.
- 2) The Specifications of Small Agricultural Machinery & Equipments suitable for Tractors below 20HP will be discussed separately with the members of Officers concerned of FMTTIs & State Agriculture Departments, executive members of STMA and manufacturers of such machineries in the next meeting.
- 3) It is also advised to the manufactures to submit these machines for the subsequent batch testing for which the grace period has already had been extended from 18th September, 2019 to 31st March, 2020. No further extension will be given in this matter. The manufactures were advised to honour their commitments being made in the meetings.
- 4) As Regards the Technical Critical Specifications of Bund Former & Mechanical reversible Plough as proposed by their respective manufacturers, it was decided that issue will be discussed with the Officers concerned of the FMTTIs & ICAR and decision will be taken on their recommendations the matter.
- 5) The Specifications of 3 row Sugarcane planter & ridge tiller will be discussed in the next meeting in the presence of their manufacturers & representatives of their technical team
- 6) On the issues of the TMA & AICMA regarding implementation of New Emission Standards BS (CEV/TREM)IV from 1st October 2020, JS (M&T) has advised of officers concerned of M&T division to write a DO letter to officer concerned at MORTH to postpone the date of implementation of the new emission standards in respect of Tractors, Combine harvester, Power Tillers and other self propelled Agricultural machineries may be postponed. Also, it is requested to prepare **Separate Emission Standards for Agricultural Machineries, including Tractor, Combine harvesters, Power Tillers & other Self Propelled Agricultural Machines** at earliest.
- 7) On the issues of the TMA regarding difficulties being faced by manufacturers in testing of their tractor models due for ICT & Batch Test after the implementation of Revised Test Code IS 12207 it is informed that the proposal for extension of the validity of their existing ICT or Batch Test Reports till 31st of March, 2020 is under way and all the Tractor Manufacturers are advised to obtain the necessary Administrative / Technical Extension to their Test Reports before 31st March, 2020.

- 8) On the issue of the Testing Charges for Agricultural Machinery due for the supplementary Testing due to change in their specification/design in order to comply with the new critical Technical Specifications, officers concerned of the M&T Division were directed to take the approval & concurrence of the IFD for the supplementary Charges, already finalized and included in the minutes of the meeting held on 20.08.2019.

Meeting was ended with thanks to the Chair.

List of Participants

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60.				

Annexure-2**1. Tractor operated land Leveler**

Sr. No.	Particular	Specification
1	Length in, mm	1845 (Min.)
2	Width in, mm	550 (Min.)
3	Height in mm	1060 (Min.)
4	Power (Hp) required	35 to 60 hP
5	Size of Blades/Scraper, mm	1830 x 75 x 8 (Min.)
6	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, Type, Size, mover (kW), weight of the Machine,(kg)

2. Tractor Mounted Disc Mower

Sr. No.	Particular	Specification
1	Function	Harvesting and windrowing of fodder crops.
2	Crops	Sorghum, Maize, Berseem and other fodder crops.
3	Type	Offset/Side , Rear Tractor Mounted
4	Attached with Tractor	Three Point Linkage
6	Working Width,mm	1200 (Min.)
7	Lifting of cutter bar	Hydraulic
8	Disc Specifications	
	Number	4 Min./ 2blades per disc
	Type	Oval/round
	Material of disc	Boron/EN 42j or equivalent
10	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, Type, required size of prime mover (kW), weight of the Machine,(kg)

3. SELF PROPELLED FODDER HARVESTER – 3 WHEEL

S. No.	Parameters	Specifications
Machine:		
1.	Type	Self-propelled, Ride on, Fodder Harvester
2.	Function	Harvesting and Windrowing of fodder crops
Engine		
3.	Engine Type	8/10 Hp (Min.), 4 Stroke, Air Cooled, Single Cylinder, Variable Speed, Diesel Engine
4.	Starting	Rope Start
Transmission & Clutch		
5.	Type	Sliding /Constant Mesh or Combination of both
6.	No of Speed	4- Forward & 1 Reverse
7.	Clutch Type	Dry Friction Disc
Steering & Mechanical Brakes		
8.	Steering Mechanism	Dog clutch on drive axle and pedal on steered wheel
9.	Brake Mechanism	Internal expanding shoe/ring
Reaping Unit		
10.	Effective width of cutter bar (mm)	1100(Min.) (Min.)
11.	Type of crop dividers	Shoe
12.	Number of crop dividers	Two
13.	Type of knife section	Serrated
14.	Number of knife sections on cutter bar	As per design
15.	Length of ledger plate (mm)	As per design
16.	Material of knife section	High carbon steel EN42 J and above
17.	Material of ledger plate	High carbon steel EN44, C 60 and above
18.	Hardness of knife section ,HRC	38 (min)
19.	Hardness of ledger plate, HRC	40-45 (Min)
Lifting for Cutter Bar		
20.	Type	Manual
21.	Operation	By pulling down the handle bar to raise the cutter bar from ground and locking it at the raised position
22.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, required size of prime mover (kW), weight of the Machine,(kg)

4. SELF PROPELLED FODDER HARVESTER – 4 WHEEL

S.No.	Parameters	Specifications
Machine Detail		
1.	Type	Self propelled , Ride on, Fodder Harvester
2.	Function	Harvesting and Windrowing of fodder crops
Engine		
3.	Engine Type	10, Hp (Min.) 4 Stroke, Air Cooled/water cooled, Single Cylinder, Variable Speed, Diesel Engine
4.	Starting	Electric Start
Transmission & Clutch		
5.	Type	Sliding /Constant Mesh or Combination of both
6.	No of Speed	4- Forward & 1- Reverse
7.	Clutch Type	Dry Friction Disc
Steering & Brakes		
8.	Steering Mechanism	Steering wheel with Gear plate and tie rod at rear axle
9.	Brake Mechanism	Mechanical, Internal expanding shoe/ring
Reaping Unit		
12.	Effective width of cutter bar (mm)	1400 (Min.)
13.	Type of crop dividers	Shoe
14.	Number of crop dividers	Two
15.	Type of knife section	Serrated
16.	Number of knife sections on cutter bar	As per design
17.	Length of ledger plate (mm)	As per design
19.	Material of knife section	High carbon steel EN42j and above
20.	Material of ledger plate	High carbon steel EN44 and above
21.	Hardness of knife section ,HRC	38 (min)
22.	Hardness of ledger plate, HRC	45 (Min)
Lifting for Cutter Bar		
20.	Operation	Hydraulic
21.	Type	DC Hydraulic power unit with the oil tank.
22.	Lifting method	Through single acting hydraulic cylinder
23	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, size of prime mover (kW), weight of the Machine,(kg)

5. SELF PROPELLED REAPER BINDER – 3 WHEEL

S.No.	Parameters	Specifications
Machine Detail		
1.	Type	Self-propelled , Ride on, Reaper Binder
2.	Function	Harvesting and Binding of Grain crops in a single operation
Engine		
3.	Engine Type	8/10 Hp (Min.),4 Stroke, Air Cooled, Single Cylinder, Variable Speed, Diesel Engine
4.	Starting	Rope Start
Transmission & Clutch		
5.	Type	Sliding /Constant Mesh or Combination of both
6.	No of Speed	4- Forward & 1- Reverse
7.	Clutch Type	Dry Friction Disc
Steering & Mechanical Brakes		
8.	Steering Mechanism	By dog clutch on drive axle and pedal on steered wheel
9.	Brake Mechanism	Internal expanding shoe/ring
Reaping Unit		
10.	Effective width of cutter bar (mm)	1200 (Min.)
11.	Type of crop dividers	Shoe
12.	Number of crop dividers	Two
13.	Type of knife section	Serrated
14.	Material of knife section	High carbon steel EN42 J and above
15.	Material of ledger plate	High carbon steel EN44/C-60 and above
16.	Hardness of knife section ,HRC	38 (min)
17.	Hardness of ledger plate, HRC	40-45
Lifting of Cutter Bar		
18.	Type	Manual lifting
19.	Operation	By pulling down the handle bar to raise the cutter bar from ground and locking it at the raised position
Crop Collecting Unit		
20.	Type	Forks with fingers
21.	No. of forks	6
Crop binding mechanism		
22.	Type	Knotting
23.	Type of ropes	Nylon/Jute/ PP Rope
24.	Provision of changing the crop bundle size	Should be Provided
25.	Slip clutch/safety pins at cutter bar drive	Should be Provided
26.	Provision of Parking break for storage/parking	Should be Provided
27.	Marking/labeling of machine	The labeling plate should be riveted on the

		body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, size of prime mover (kW), weight of the Machine,(kg)
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6. SELF PROPELLED REAPER BINDER – 4 WHEEL

S.No.	Parameters	Specifications
Machine Detail		
1.	Type	Self propelled , Ride on, Reaper Binder
2.	Function	Harvesting and Binding of Grain crops in a single operation
Engine		
3.	Engine Type	10 HP (Min.),4 Stroke, Air Cooled, Single Cylinder, Variable Speed, Diesel Engine
4.	Starting	Electric Start
Transmission & Clutch		
5.	Type	Sliding /Constant Mesh or Combination of both
6.	No of Speed	4- Forward & 1- Reverse
7.	Clutch Type	Dry Friction Disc
Steering & Brakes		
8.	Steering Mechanism	Steering wheel with Gear plate and tie rod at rear axle
9.	Brake Mechanism	Internal expanding shoe/ring
Lifting of Cutter bar		
10.	Operation	Hydraulic
11.	Type	DC Hydraulic power unit with the oil tank.
12.	Lifting method	Through single acting hydraulic cylinder
Reaping Unit		
13.	Effective width of cutter bar (mm)	1200 (Min.)
14.	Type of crop dividers	Shoe
15.	Number of crop dividers	Two
16.	Type of knife section	Serrated
19.	Material of knife section	High carbon steel EN42 J and above
20.	Material of ledger plate	High carbon steel EN44, C 60 and above
21.	Hardness of knife section ,HRC	38 (min)
22.	Hardness of ledger plate, HRC	40-45
Crop Collecting Unit		
23.	Type	Forks with fingers
24.	No. of forks	6
Crop binding mechanism		
25.	Type	Knotting
26.	Type of ropes	Nylon/Jute/ PP Rope
27.	Provision of changing the crop bundle size	Should be provided

28.	Slip clutch/safety pins at cutter bar drive	Should be provided
29.	Provision of Parking break for storage/parking	Should be provided
30	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, size of prime mover (kW), weight of the Machine,(kg)

7. Tractor drawn Agricultural Trailer.

S.No.	Parameters	Specifications
1.	Class of vehicle	2 wheel Trailer Up to 5 T
2.	Type of body – Solo/ Solo with Pillion / HatchBack/sedan/saloon/estate etc.,	One/Three side Tipping
3.	Type of vehicle / category	R1-R 2 (R1 for GVW upto 3T/ R2 for GVW upto 5T)
4.	ULW (Unladen weight)	
5.	Sheet Metal	3 mm side and 5 mm base MS sheet
6.	GVW (Gross Vehicle Weight) or RLW (Registered Laden weight) as certified by the manufacturer	-kgs
7.	Number, Description, size and ply rating of tyre as declared by the manufacturer	Provided
8.	Front axle	6.00 x 16 , 6PR (Min.)/10.00x20, 16 PR Tube Type
9.	Overall length,mm	2000 to 4100 To be check
10.	Overall width,mm	900 (Min.) To be check
11.	Overall height,mm	600 (Min.)
12.	Min, Ground clearance	-
13.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month & Year of manufacture, Serial number, Size, required size of prime mover (kW), weight (kg)

8. ROUND BALER(Mini)

Sr. No	Parameter	Specification
1.	Working width (mm)	700 (Min.)
2.	Recommended power source (hp)	35 (Min.)
Pick-up Unit:		
3.	No. of tine bars	4 (Min.)
4.	Tine spacing (mm)	52 to 68
5.	Reel speed corresponding to 540 PTO rpm (rpm)	84 (min.)
Bale Unit:		
6.	Size of bale, LxD (cm)	Dia: 500 (Min.) for small bales & Length: 700 (Min)
7.	Provision for bale density adjustment	Should be provided
8.	Provision of safety clutch/ device (shear bolt) in PTO drive shaft and pick-up unit	Should be provided
9.	Guard over propeller shaft	Should be provided
10.	Provision of guards over transmission for safety	Should be provided
11.	Provision for safety at feeder unit against overloading	Should be provided
12.	Provision for transportation	Should be provided
13.	Any other	Shaft and Pin should be of min EN 9 or above
14.	Printed Literature	Operator & service manual, part catalog must be provided in Hindi, English a7 regional language
15.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, Size, weight of the Machine,(kg)

9. ROTO-PUDDLER /RICE HARROW

S..N	Item	Specification
1	Working width,mm	1950 (Min.)
2	Type of blade	J&C Type
3	Thickness of blade(mm)	6 (Min.)
4	No of blades	50 (Min.) (Depending on sizes)
5	Total no holders	50 (Min.) (Depending on sizes)
6	No of blades per holder	One
7	Diameter of rotor shaft(mm)	70 (OD) (Min.) (Schedule 80)
8	Rotor diameter (Including holder and blade mounted on holder) mm	380 (Min.)
9	Side drive	Chain drive/ Gear Drive
10	Depth control mechanism	Should be provided
11	Material of blades	27MnCrB5 Boron Steel- 27MnCrB5/ 28MnCrB5/ 30MnCrB5/ EN-45/ Sup 6/ Carbon steel /EN42/ EN47
12	Safety clutch/device(Shear bolt)in PTO drive shaft	Should be provided Shear Bolt
13	Rice harrow Stand	Should be provided
14	Guard over propeller shaft	Should be provided
15	Total weight of the machine(Kg)	325 (Min.)
16	Literature	Operator manual, Service manual and Parts catalogue provided
18	Sheet metal	Reference IS2062 for content of primary elements in different category of sheet metal , defined by CFMTTI,NRFMTTI,AMMA
20	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, Type size of prime mover (kW), weight of the Machine,(kg)

10. SUPER SEEDER

Sr.No.	Parameters	Specifications
1.	Type	Tractor Drawn, Mounted Type
2.	Working Width,mm	1500 (Min.)
3.	No. of Rows	9 (Min.)
4.	Row to Row Spacing, mm	190-225
5.	No. of Blades	36 (min.).
6.	Type of Blades	LJF-type/L-type/C-type
7.	Thickness of Blades, mm	7 (Min.)
8.	Dia. of Rotor with Blades.mm	425(min.)
9.	Mast Height, mm	580 to 620
10.	Gear Box	Multi Speed
11.	Seed Metering Device	Aluminum Fluted Roller Type
12.	Fertilizer Mechanism	Aluminum Fluted Roller Type
13.	Three Point Linkage	Cat- I , II
14.	Furrow Opening Disc	Optional
15.	Press Roller	Optional
16.	Type of furrow opener	Disc (Plain/notch)/tyne
17.	Safety cover	Safety cover should be provided on all moving parts
18.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Month &Year of manufacture, Serial number, size of prime mover (kW), weight of the Machine,(kg)

11. SUPERSTRAWMANAGEMENTSYSTEM(SMS)TOBEATTACHEDWITH Track Type COMBINEHARVESTER

Sl. No.	Parameters	Specifications	
		Axial flow Type	Track straw walker
1.	Rotor Pipe diameter, mm	110 -165	70-210
2.	No. of lugs on rotor in a row	3 (Min.)	3 (Min.)
3.	No. of rows in periphery	4	4
4.	Length of pivotal flail (Blade) from centre of hole to tip, mm	100-180	100-180
5.	Width of flail (Blade), mm	Straight 50 - 60 Tapered 25 to 60	25-60
6.	Thickness of flail (Blade), mm	3.0 (Min.)	3.0 (Min.)
7.	No. of flails (Blade) in one set	1 (Min.)	1 (Min.)
8.	No. of rows/bars of blades	1	1
9.	Spacing between blades, mm	20 (Min.)	20 (Min.)
10.	Overlapping of pivotal blade on Serrated/plain blade, mm	25 (Min.) adjustable	25 (Min.) adjustable
11.	Length of flap, mm	200 (Min.)	200 (Min.)
12.	Distance between flaps (left to right)	Adjustable	Adjustable
13.	Spreader angle with horizontal, degree	Adjustable	Adjustable
14.	Spreader sheet thickness, mm	1.5 (Min.)	1.5 (Min.)
15.	SMS Sheet thickness, mm	1.5 (Min.)	1.5 (Min.)
16.	Rotor balancing	Dynamically	Dynamically
17.	Rotor rpm	1500 (Min.)	1200 (Min.)
18.	Peripheral speed, m/s	40 (Min.)	40 (Min.)
19.	Fitting of SMS on combine harvester	Rigidly Fixed	Rigidly Fixed
20.	Fitting of power transmission system on combine harvester	Rigidly Fixed	Rigidly Fixed

12. Super straw management system (sms) to be attached with Self Propelled wheel type combine harvester

S. No.	Parameters	Specifications
1.	Rotor Pipe diameter, mm	90-210
2.	No. of lugs on rotor in a row	2-6
3.	No. of rows in periphery	4(Min.)
4.	Length of pivotal flail, mm	140-180
5.	Width of flail, mm	48-58
6.	Thickness of flail, mm	5.0 (Min.)
7.	No. of flails in one set	2
8.	Spacing between flails of one set,mm	35 (Max.)
9.	Distance between adjacent flail units, mm	90 (Min.)
10.	No. of rows/bars of serrated/plain blades	1(Min.)
11.	Spacing between serrated/plain blades,mm	50 (Max.)
12.	Overlapping of pivotal blade on Serrated/plain blade, mm	40 (min.) (adjustable)
13.	Total no. of flaps	3 (Min.)
14.	Length of flap, cm	20(Min.)
15.	Spreader sheet thickness, mm	2.0-3.0
16.	SMS Sheet thickness, mm	5.0 (Min.)
17.	Rotor balancing	should be dynamically balanced
18.	Peripheral speed at tip of blade (m/s)	40 (Min.)
19.	Fitting of SMS on combine harvester	Rigidly fixed to the combine chassis

20.	Fitting of power transmission system on combine harvester	Rigidly fixed to the combine chassis
21.	<i>Marking/labeling of machine</i>	Labeling plate should be riveted on the body of machine having Name and address Make of manufacturer, Country of origin, , Model, Year of manufacturer, Serial number, size of prime mover (kW,), Weight of the machine (kgs.)
22.	<i>Literature</i>	Operator manual, Service manual and Parts catalogue should be provided

For performance and Safety standards refer to IS 15806-2018

