

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: IMP-1065/3031/2023
माह/Month: May, 2023

THIS TEST REPORT VALID UP TO : 31st May, 2030



**S. J. AGRO, SJ/CC/2HP
POWER OPERATED CHAFF CUTTER**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि एवं किसान कल्याण विभाग

Department of Agriculture and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

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[ISO 9001:2015 CERTIFIED]

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SUMMARY OF PERFORMANCE RESULTS

Table – 2

Sr. No.	Parameters	Observations
		Sorghum
1	Feed rate (kg/h)	1135 to 1650
2	Quantity of cut (kg/h)	1135 to 1650
3	Quality of cut (1- σ)	0.89 to 1.60
4	Avg. length of fodder pieces (mm)	7.44 to 8.01
5	Power consumed (kW)	1.34 to 1.43
6	Quantity of cut per unit energy consumed (kg/kWh)	810 to 1153
7	Corrected quantity of cut (kg/h)	708 to 1043
8	Corrected quantity of cut (kg/kWh)	506 to 729
9	Performance Index	777 to 1297

9.2.1.1	Quantity of cut :-
	a) The feed rate was observed as 1135 to 1650 kg/h in Sorghum respectively.
	b) The corrected quantity of cut was recorded as 708 to 1043 kg/h in Sorghum respectively.
9.2.1.2	Quality of cut :-
	The quality of cut was determined from the standard deviation of measured length of cut of plastic pieces. The quality of cut ranged from 0.89 to 1.60 in Sorghum respectively.
9.2.2	Long run test:-
	The chaff cutter was operated for a total duration of 25.2 hours for cutting Sorghum. No breakdown in the cutter head, feeding mechanism, transmission systems & body of the chaff cutter was noticed. No repair was done during the entire course of test.
9.2.3	Labour requirement:-
	Three labours are required for continuous operation of the chaff cutter. Three labours are required for feeding & supplying the fodder crop and one for handling the chaff.
9.2.4	Ease of operation, adjustments and safety provisions: -
	<ul style="list-style-type: none"> • The machine is easy for installation and operation. • The adjustment of clearance between fixed and rotating blade is easy to perform. • The cutter head & main power transmission are guarded by providing safety cover. • The feed rollers are provided with spring loaded arrangement. • The Chaff Cutter is provided with side plates and top cover plates to protect the feed rollers.

9.2.5	Wear analysis of blades :				
Sr. No.	Initial mass (g)	Mass after 25.2 h of operation	Loss of mass (g)	Percentage of wear	
				After 25.2 h	Per hour
1	1085	1035	50	4.64	0.18
2	1150	1145	05	0.43	0.02

10. EASE OF OPERATION & ADJUSTMENTS

No noticeable difficulty was observed during the operation and adjustment of the machine. When the following work rest cycle was followed.

2 hours work → 15 minutes rest → 1.5 hour work → 15 minutes rest → so on.

11. DEFECTS, BREAKDOWNS AND REPAIRS

No noticeable defect or breakdown was observed during the test.

12. CRITICAL TECHNICAL SPECIFICATION

(Vide Ministry's communication No 13-9/2019 M &T (I & P) dated 26.04.2019)

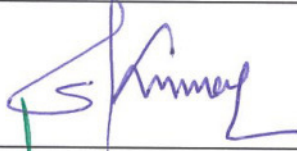

Sr. No.	Parameters	Specifications	Observation	Remarks
1.	Type	Power operated	Power operated	Conforms
2.	Basis of cutting mechanism type	Flywheel or cylinder	Flywheel or cylinder	Conforms
3.	Basis of cut chaff dropping position	Let fall, throw away of blow	Let fall	Conforms
4.	Material of blade	Mn 42	Mn 42	Conforms
5.	Hardness of blade, HRC	48-52	50.0	Conforms
6.	Length of conveyor, mm	1200 (Min)	NA	--
7.	Length of chute, mm	900 (Min)	900	Conforms
8.	Thickness of chute sheet, mm	≥1.6	1.6	Conforms
9.	Covering of chute or conveyor, mm	450 minimum	500	Conforms
10.	Height of feeding unit, mm	750 to 1100	1090 mm	Conforms
11.	Cautionary notice	Must be provided	Provided	Conforms
12.	Marking/labeling of machine	The labeling plate should be riveted on the body of machinery having name and address of manufacture. Country of origin. Make. Model, Year of manufacture, Serial number, Type, Required size of prime mover (KW)	Provided	Conforms
13.	Literature	Operator manual Service manual and Parts catalogue should be provided	Provided	Conforms



13. SUMMARY OF OBSERVATION, COMMENTS & RECOMMENDATIONS

- 13.1** The modification/ improvement regarding safety and other requirement should be done in chaff cutter as per the requirement of IS : 15542-2005.
- 13.2** The provision for adjustment of the feed rate and length of cut is not provided. It **MUST** be provided.
- 13.3** This machine does not meet in full the requirement of IS: 11459-1985 and IS: 15542-2005. This **MUST** be looked into for corrective action.
- 13.4** Transport system should be provided as per the requirements of 15789-1975.
- 13.5 Field performance**
- a) Quantity of cut:**
- i) The feed rate was observed as 1135 to 1650 kg/h in Sorghum respectively.
- ii) The corrected quantity of cut was recorded as 708 to 1043 kg/h in Sorghum respectively.
- b) Quality of cut:** The quality of cut was determined from the standard deviation of measured length of cut of plastic pieces. The quality of cut ranged from 0.89 to 1.60 in Sorghum respectively.
- 13.6** The overall performance of the machine as well as finishing was found satisfying.
- 13.7 Technical literature:-**
- The following literature is provided during the testing.
- i) Operation manual cum spare parts catalogue.
- The following literature **MUST** be provided with machine.
- i) Service manual of chaff cutter.
- The operation manual of chaff cutter should be updated as per IS: 8132-1999.

TESTING AUTHORITY:

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
DR. MUKESH JAIN DIRECTOR	 29.05.2023

14. APPLICANT'S COMMENTS

No specific comments received from the applicant.

