

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT (VARIANT)

संख्या/ No.: Comb- 313/3011/2023

माह/Month: April, 2023

THIS TEST REPORT VALID UP TO : 30th April, 2030



**MALKIT-897,
SELF PROPELLED MAIZE COMBINE HARVESTER**



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

Northern Region Farm Machinery Training and Testing Institute

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8. FIELD TEST

8.1 Combine harvester was operated in field for 28.53 hours (excluding running-in of 2.07 hours) for maize harvesting only. During the test, maize crop was harvested to assess the field performance of combine with regard to quality of work, rate of work, fuel consumption, safety and soundness of construction etc. The crop and atmospheric conditions during field test are given in **Appendix - II & IV** respectively. The crop parameters recorded during the test for all crops are as under: -

Crop parameters

Sr. No.	Parameters		Maize
1.	Plant height, cm	:	209 to 310
2.	Number of plants/m ²	:	11 to 14
3.	Length of corn cob, cm	:	15 to 17
4.	Straw/grain ratio, %	:	0.40
5.	Moisture, %		
	- Grain	:	23.0 to 23.5
	- Straw	:	65.2 to 66.4

Table- 5 : SUMMARY OF LOSSES & EFFICIENCIES OBSERVED DURING FIELD PERFORMANCE TEST.

Crop variety	Collectable losses, % (Max.)	Non-collectable losses, % (Max.)	Total processing losses, % (Max.)	Threshing efficiency, % (Min.)	Cleaning efficiency, % (Min.)	Grain breakage in main grain tank, (Max.)	Forward speed (kmph)	Area covered (ha/h)	Fuel consumption		Urea consumption		Grain output (kg/h)	Crop throughput (t/h)
									(l/h)	(l/ha)	(l/h)	(l/ha)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Maize														
Pioneer 1844	1.70	0.10	1.70	100	97.3	1.70	1.85 to 1.87	0.596 to 0.625	9.02 to 9.52	14.79 to 15.80	0.08 to 0.10	0.13 to 0.16	6694 to 6842	9.28 to 9.56

8.2 Unloading of grains

The time to unload the grain tank ranged from 72 to 90 second in maize crop.

9. DEFECTS, ADJUSTMENTS, BREAKDOWNS AND REPAIRS

No noticeable defect or breakdown was observed during test.

10. INSPECTION AND ASSESSMENT OF WEAR

10.1 Steering system

Visual condition of the components of complete steering assembly : No noticeable defect observed.

10.2 Chains, sprockets and belts

Visual condition of the components of complete assembly : No noticeable defect observed.

10.3 Bearings

Visual condition of the components of complete assembly : No noticeable defect observed.



11	Type of brake and clutch actuation system	Brake – pedal operated, hydraulic actuated internal expanding shoe type brake. Clutch – Pedal operated	Brake – pedal operated, hydraulic actuated internal expanding shoe type brake. Clutch – Pedal operated	No change
12	Type of clutch (Single/Dual /Dry/Wet)increase in size of clutch	Single dry clutch	Single dry clutch	No change
13	Type of air cleaner (Dry/Wet) & its location	Dry	Dry	No change
14	Engine accessories	As per specification sheet	As per specification sheet	No change
15	Tyre size – Steering wheel	Two, 9.00-16, 16 PR	Two, 9.00-16, 16 PR	No change
	Drive wheel	Two, 18.4-30, 14PR	Two, 18.4-30, 14PR	No change
16	Power transmission system from PTO	Not applicable	Not applicable	--
17	Additional safety devices for overload	As per list of safety devices provided. Refer 3.16 safety devices provided on the machine	As per list of safety devices provided. Refer 3.16 safety devices provided on the machine	No change
18	Overall dimensions of combine harvester, mm			
		Working	Working	
	Length	8840	9260	Changed
	width	6060	5770	Changed
	height	3860	3860	No change
19	Provision of straw chaffer and spreader	Not provided	Not provided	No change

14. COMMENTS AND RECOMMENDATIONS

The results of the tests carried out on variant model 'MALKIT-897' has been compared with those of base model 'MALKIT-897 DELUXE' and found within the limit, as specified Table 2 of IS: 15806-2018.

14.2 Field performance test

- i) During the field performance test the fuel consumption was observed from 9.02 to 9.52 l/h and (14.79 to 15.80 l/ha)
- ii) The area covered was observed from 0.596 to 0.625 ha/h.

14.3 Ease of operation and safety provision

- i) No noticeable difficulties were observed during operation of combine harvester.
- ii) Slip clutch at grain and tailing elevator drive are not provided. It should be provided as per the requirement of IS:15806-2018



14.4 There is no drive safety for grain unloading auger. It should be provided.

14.5 **Literature supplied with the machine**

The following literature was submitted by applicant during testing. However, the same needs to be updated as per IS: 8132-1999.

- i) Operator and service manual of combine harvester
- ii) Parts catalogue of combine harvester
- iii) Service manual of maize header
- iv) Parts catalogue of maize header

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 25-04-2023

Test report is compiled by Sh. Deny Hasnu, Senior Technician

15. APPLICANT'S COMMENTS

We will provide the corrective measures in our future production.

