

व्यावसायिक परीक्षण रिपोर्ट  
COMMERCIAL TEST REPORT

संख्या/ No.: COMP-201/3005/2023  
माह/Month : April, 2023

**THIS TEST REPORT VALID UP TO : 30<sup>th</sup> APRIL, 2030**



## **MALKIT STRAW MANAGEMENT SYSTEM (SMS)**



भारत सरकार

**Government of India**

कृषि एवं किसान कल्याण मंत्रालय

**Ministry of Agriculture and Farmers Welfare**

कृषि, सहकारिता एवं किसान कल्याण विभाग

**Department of Agriculture, Cooperation and Farmers Welfare**

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

**Northern Region Farm Machinery Training and Testing Institute**

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## 4. ROTOR BALANCING TEST

Sr. No.	Date of test	:	23.01.2023
1.	Make and model of Rotor balancing machine	:	PROTEQ and H - 1 K
2.	Mass of the job ( kg)	:	79.96
3.	Service speed of the job, rpm	:	1936
4.	ISO balancing grade	:	G 16
5.	Balancing speed, rpm	:	1936

Sr. No.	Particulars	As permissible	As observed	Remark
1.	Unbalance weight (Left side plane) (g)	42.91	7.97	Balanced
2.	Unbalance weight (Right side plane) (g)	42.91	33.3	Balanced

	Unbalance angle (Left side plane) (degree)	25.52°
	Unbalance angle (Right side plane) (degree)	253.96°

## 5. FIELD PERFORMANCE TEST

- 5.1 The Straw Management System (SMS) was operated in field for 5.62 hours for Paddy harvesting with Malkit-897 Deluxe Combine harvester recommended by applicant. During the test, available variety of crop was harvested to assess the field performance of SMS along with combine harvester 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 & V** respectively.

The crop parameters recorded during the test for crop is as under:-

## Crop Parameters

Sl. No.	Parameters		Observations of Paddy
1.	Plant height, cm	:	110 to 120
2.	Number of tillers/m <sup>2</sup>	:	242 to 318
3.	Length of ear head, cm	:	18 to 25
4.	Straw/grain ratio	:	1.6
5.	Moisture, %		
	- Grain	:	14.0
	- Straw	:	61.4

The results of field performance test of paddy crop harvesting are summarised in Table and presented in detail in **Appendix – II to V**.



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

Crop variety	Collectable losses, %	Non-collectable losses, %	Total processing losses, %	Threshing efficiency, %	Cleaning efficiency, %	Grain breakage in main grain tank, %	Forward speed, kmph	Area covered, ha/h	Fuel consumption.		Grain output, kg/h	Crop throughput, t/h
									I/h	I/ha		
<b>PADDY</b>												
ND-67	1.73	0.20	1.85	99.2	96.9	0.93	1.84	0.520	11.62	22.36	5377	14.03

**SUMMARY OF FIELD PERFORMANCE OF SMS**

Uniformity of straw spread, CV (percent)	17.6
Weighted mean size of chopped straw, cm	11.9

**6. DEFECTS, ADJUSTMENTS, BREAKDOWNS AND REPAIRS**

No noticeable defect was observed

**7. SUMMARY OF OBSERVATIONS****7.1 Field test**

7.1.1 Performance of SMS with Malkit-897 Deluxe Combine Harvester		
1	Uniformity of straw spread, CV (percent)	17.6
2	Weighted mean size of chopped strew, cm	11.9
7.1.2 Performance of Malkit-897 Deluxe combine harvester with Malkit Super SMS		
S. No	Parameters	Observations
1.	Speed of operation (kmph)	1.84
2.	Area covered (ha/h)	0.520
3.	Fuel consumption: - (l/h) - (l/ha)	11.62 22.36
4.	Crop throughput (tonne/h)	14.03
5.	Grain breakage in main grain outlet (%)	0.93
6.	Header losses (%)	0.08
7.	Total non-collectable losses (%)	0.20
8.	Total collectable losses (%) (unthreshed + broken from main outlet)	1.73
9.	Total processing losses (%)	1.85
10.	Threshing efficiency (%)	99.2

## 10. COMMENTS AND RECOMMENDATIONS

## 10.1 Field performance test

No noticeable defects were observed during the field test.

## 10.2 Ease of operation and safety provision

No noticeable difficulties observed during operation of SMS.

## 10.3 Hardness

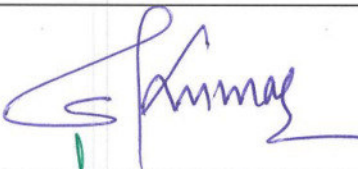

The harness of fixed & flail blade of SMS does not conform to the requirement of IS 15806:2018. It MUST be looked into.

## 10.4 Literature supplied with the machine

Parts catalogue is provided by the applicant. However, the following literature should be provided as per IS: 8132-1999

- i) Operator manual
- ii) Service manual

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 19.04.2023

11. APPLICANT'S COMMENTS

We look forward to maintain all the recommendations guided by you in our next development. We will provide the operator manual and service manual as soon as possible.

