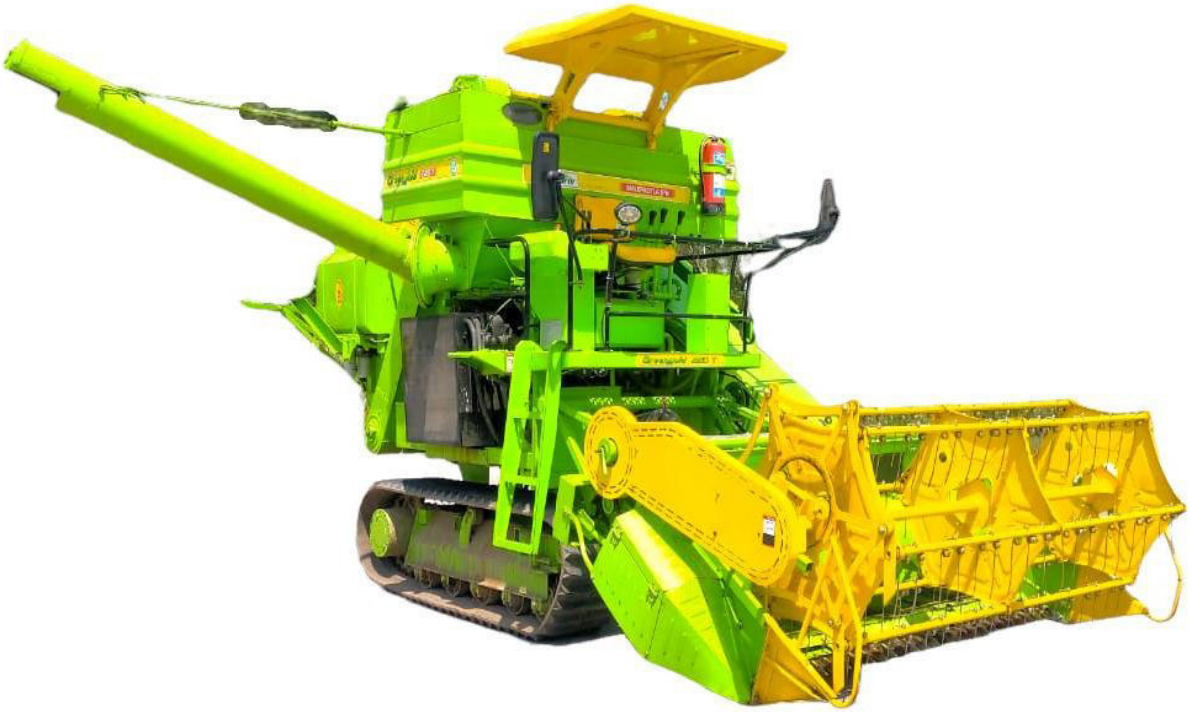
व्यावसायिक परीक्षण रिपोर्ट

COMMERCIAL TEST REPORT

संख्या/ **No.: Comb- 287/2932/2022**

माह/**Month: October, 2022**

THIS TEST REPORT VALID UP TO : 31ST October, 2029



KSA-GREENGOLD 220 T, SELF PROPELLED COMBINE HARVESTER (TRACK TYPE)

सत्यमेव जयते

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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15. FIELD TEST

15.1 The combine harvester was operated in field for 52.62 hours (excluding run in 1.0 h) for paddy harvesting. During the test, available varieties of crop were 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**

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

Crop parameters

Sr. No.	Parameters		Observations
			Paddy
1.	Plant height, cm	:	98 to 111
2.	Number of tillers/m^2	:	386 to 445
3.	Length of ear head, cm	:	20 to 25
4.	Straw/grain ratio	:	1.7 to 1.9
5.	Moisture, %		
	Grain	:	13.0 to 18.5
	Straw	:	64.5 to 66.2

The summary of losses and efficiencies observed during field performance test with paddy crop is summarised in Table 4 and presented in detail in **Appendix – III & IV**

TABLE-4: SUMMARY OF LOSSES & EFFICIENCIES OBSERVED IN 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 tank (%) (Max)	Forward speed (kmph)	Area covered (ha/h)	Fuel consumption (I/h)	Fuel consumption (I/ha)	Grain out put (kg/h)	Crop through-put (t/h)
Basmati-370	1.70	0.20	1.80	99.10	97.70	0.67 to 0.83	1.47 to 1.50	0.244 to 0.248	7.20 to 7.52	29.42 to 30.46	1927 to 2077	5.31 to 5.95

15.2 Unloading of grains

The time to unload the grain tank ranged from 85 to 96 seconds in paddy operation

15.3 Time required for daily maintenance

The average labour required for daily maintenance was approximately two man hour

15.4 Harvesting of any other crop

Not done, as not recommended

XI	**Material of construction** :						
	i)	Knife guard should conform to IS: 6024 - 1983	Non evaluative	Should have maximum hardness 163 HB	-	261.70 (Average)	**Does not conform**
	ii)	Knife blade As per IS: 6025 -1982	Non evaluative	It must have Chemical composition as C= 0.70-0.95 % Mn= 0.30-0.50 %	-	C= 0.68 % Mn= 0.60 %	**Does not conform** **Does not conform**
	iii)	Knife back should meet the requirement of IS:10378-1982	Non evaluative	The knife back shall be manufactured from carbon Steel having minimum carbon content of 0.35 %	--	C=0.30	**Does not conform**

18.2 Acceptance criteria in case of Breakdowns/Defects as per clause 4.2 of IS:15806-2018

XVII. Break down (critical, major & minor)

Sr. No.	Category of breakdowns	Category (Evaluative/ Non evaluative)	Requirements as per OM	As observed	Whether meets the requirements (Yes/No)
1.	Critical	Evaluative	No critical breakdown	None	Yes
2.	Major	Evaluative	Not more than two and neither of them should be repetitive in nature	None	Yes
3.	Minor	Evaluative	Not more than five and frequency of each should not be more than two	None	Yes
4.	Total breakdown	Evaluative	In no case total no of (major + minor) breakdowns exceed five	None	Yes

20. COMMENTS AND RECOMMENDATIONS

20.1 Mechanical vibration

The amplitude of mechanical vibration of components marked as (*) in chapter 15 of this test report are observed to be on higher side. This calls for providing suitable remedial measures to dampen the vibration in order to improve the operational comfort and service life of various components & sub-assemblies.

20.2 Field performance test

No noticeable defects was observed during field test

20.3 Ease of operation and safety provisions

i) No noticeable difficulties were observed during operation of combine harvester.
ii) Position against accidental start of engine is not provided. It is not conforming to the serial no. (1) (i) (a) of IS: 8133-1983. It should be looked into.

20.4 Chemical composition

Chemical composition of knife blade and knife back is not within the limit as per IS: 6025-1982 and IS: 10378-1982. It should be looked into for corrective action at regular production level.

20.5 Literature supplied with the machine.

The following literatures were provided by the applicant during the test.

i) Operator and service manual of combine harvester
ii) Parts catalogue of combine harvester
ii) Service manual of engine

However, the manual needs to be updated as per IS: 8132-1999.

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN **DIRECTOR**	19.10.2022

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

21. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicants Comments
21.1	20.1	During regular production level of harvester combine we will provide suitable remedial measure to dampen vibration so that vibration at al points will be within IS limits
21.2	20.3	Position against accidental start of engine will be provided
21.3	20.4	We will change the hardness and chemical composition of knife blade and knife back to conform the IS:6025-1982 and IS:10378-1982.
21.4	20.5	We will update manual as per IS:8132-1999
21.5	--	We will supply quality products to customers