

व्यावसायिक परीक्षण रिपोर्ट  
COMMERCIAL TEST REPORT



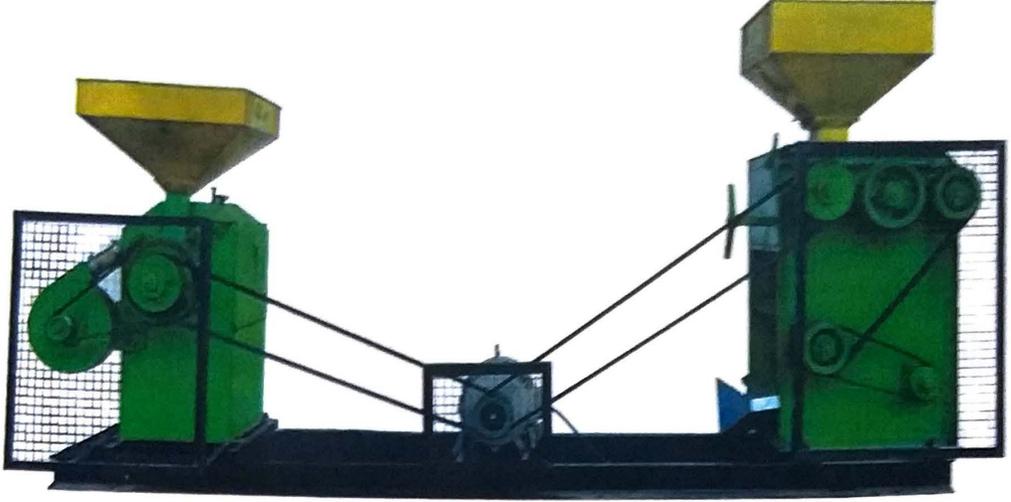
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THIS TEST REPORT VALID UPTO 21/12/2025

NERFMFTTI, UZDARY

T.R. No. \_\_\_\_\_

Date: \_\_\_\_\_



**BKE, MINI RICE MILL**



सत्यमेव जयते  
भारत सरकार  
GOVT OF INDIA

कृषि एवं किसान कल्याण मन्त्रालय

MINISTRY OF AGRICULTURE & FARMERS WELFARE

कृषि, सहकारिता एवं किसान कल्याण विभाग

DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE

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## 9. SUMMARY OF OBSERVATIONS, COMMENTS AND RECOMMENDATIONS

### Performance of the Mini Rice Mill:

#### 9.1 Summary of Performance of Paddy Dehusker at rated input capacity:

The detailed performance results of machine are given in **Annexure- II** and are summarized in **Table-3**. The performance of the machine at rated input capacity is summarized below.

Feed rate	Power consumption	Output	Capacity		Specific power	Shelling efficiency	Losses in main outlet			Blown losses		
			Input	output			Broken	Unshelled	Husk	Whole	Broken	Unshelled
(kg/h)	(kWh)	(Kg/h)	(Kg/kWh)		(kWh/t)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
306	2.55	230	120	90	8.33	90.7	3.9	2.6	0.4	0.40	4.0	0.60

##### 9.1.1 Rate of work:

- a) Rated input capacity was recorded as 306 kg/h against the declaration of 300 kg/h.
- b) The output capacity was recorded as 230 kg/h at rated input capacity of the dehusker.
- c) The input & output capacity per unit of energy consumption of the dehusker were recorded as 120 Kg/kWh and 90 Kg/kWh respectively.

##### 9.1.2 Quality of work

- a) Percentage of broken rice was recorded as 3.9 %, which is within the specified maximum limit of 5.0% as per IS: 12792 and meet the requirement.
- b) The cleaning efficiency of husk aspirator was recorded as 99.6 % against the minimum requirement of 95% as per IS: 12792 and meets the requirement.
- c) The percentage of blown rice & broken rice were recorded as 0.40 & 4.0 % respectively, against the minimum requirement of zero% as per IS: 12792 and does not meet the requirement. This should be called for introduction of corrective measures.
- d) Shelling efficiency at rated input capacity was found as **90.7%** against the requirement of **85%** in case of raw paddy, which meets the requirement.

##### 9.1.3 Power Consumption:

- a) Power consumption at rated input capacity was observed as 2.55 and 2.61 kWh for first and second pass respectively.
- b) The specific power consumption at rated input capacity were calculated as 8.33 and 6.54 kWh/t.

##### 9.1.4 Labour Requirement:

One semi-skilled labour is required to feed the paddy into the hopper. Additionally, two nos. of labours are required for raw paddy handling and one for brown rice handling.

#### 9.2 Summary of Performance of polisher at rated input capacity:

The detailed performance results of machine are given in **Annexure- IV** and are summarized in **Table-4**. The performance of the machine at rated input capacity is summarized below.

Feed rate	Power consumption	Output	Capacity		Specific power consumption		Broken at rice outlet	Degree of Polish	Losses in bran outlet	
			Input	output	For Brown Rice	For Paddy			Polished rice	Broken rice
			(kg/h)	(kWh)	(Kg/h)	(Kg/kWh)			(kWh/t)	
294	6.59	276	44.6	41.8	22.4	16.30	11.5	6.09	Nil	0.60

**9.2.1 Rate of work:**

- a) Rated input capacity was recorded as 294 kg/h of brown rice against the declaration of 300 kg/h.
- b) Output capacity was recorded as 276 kg/h at rated input capacity.
- c) The input capacity per unit of energy consumption of the polisher was recorded as 44.6 Kg/kWh only against the requirement of 110 Kg/kWh and does not meet the requirement of IS:9555. This should be looked into.

**9.2.2 Quality of work**

- a) Percentage of broken rice from the polished rice outlet at rated input capacity was recorded as 11.5 % in raw rice, which is out of the specified limit of 10.0 % as per IS:9555 and does not meet the requirements.
- b) Degree of polish at rated input capacity was calculated as 6.09 % against the requirement of  $2.5 \pm 0.25$  % as per IS: 9555 and does not meet the requirement. This should be looked into.

**9.2.3 Power Consumption:**

- a) Power consumption at rated input capacity was recorded as 6.59 kWh for brown rice, whereas the specific power consumption was determined as 14.81 kWh/t of paddy.

**9.2.4 Labour Requirement:**

- a) Two persons are required for feeding and handling of brown rice respectively. Moreover, One more labour is required for handling the polished rice from the main outlet.
- b) During simultaneous operation of dehusker and polisher the overall labour requirement for the Mini Rice Mill was assessed as six man power.

**9.3 Wear Assessment:**

The percentage wear on mass basis was recorded as 0.68 to 0.91 % and 0.57 to 0.82 % for rubber roll and polisher net respectively of the Mini Rice Mill.

- 9.4 The size of rubber rolls does not conforming to the requirements given in IS 8427:1989 (Reaffirmed 2005). This should be looked into.
- 9.5 The size of polisher screens to be used for raw rice and parboiled rice should be declared as per the requirement of IS 9555:1989.
- 9.6 The machine should be provided with minimum cautionary notices as per clause 10.1.1 of IS 9555:1999 (Reaffirmed 2010), written in vernacular language legibly and prominently on the main body of the Mini Rice Mill for guidance as well as ensuresafety of feeder & labour.

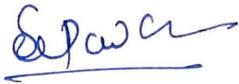
**9.7 Labelling of the Machine:**

A labeling Plate indicating, Manufacturer's name and recognized trade-mark, Make, Model, Type, Batch number, Code or Serial number, Year of manufacture, Power rating, Rated input capacity, Direction of rotating parts and Rated speed both for the dehusker and polisher should be provided on the machine.

**9.8 Adequacy of Literature:**

Operator's Manual along with safety instructions, Maintenance Manual and Parts' Catalogue should be brought out in vernacular language as per IS 8132:1983 and the manual should contain the information given in Appendix A of IS 9049:1989.

**TESTING AUTHORITY**

<p style="text-align: center;"><b>S. G. PAWAR</b> <b>AGRICULTURAL ENGINEER</b></p>	
<p style="text-align: center;"><b>K.K. NAGLE</b> <b>DIRECTOR</b></p>	

Report compiled by -

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**10. APPLICANT'S COMMENTS**

- 10.1 One copy of the draft test report was made available to the applicant. No comments, however, was received in this office.