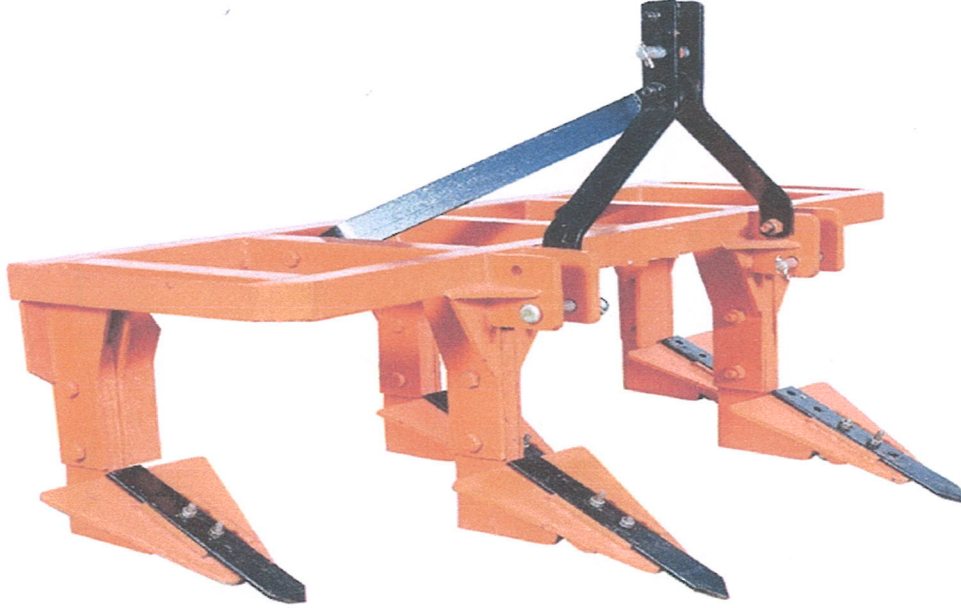


THIS TEST REPORT IS VALID UP TO 31.12.3031



RAAJ, RAAJ-5TFO DUCK FOOT CULTIVATOR



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

दक्षिणी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Southern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर, गार्लदिन्ने - 515 731, जिला: अनंतपुर (आं. प्र.)

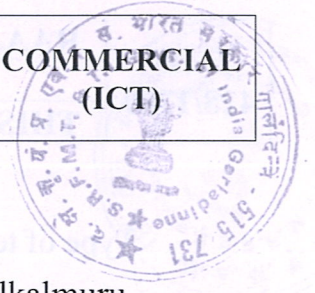
Tractor Nagar, Garladinne- 515 731, District: Anantapur (A.P.)

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Website: <http://srfmtti.dacnet.nic.in/>

E-mail: [fnti-sr@nic.in](mailto:fnti-sr@nic.in)

IMP-428/1789	<b>RAAJ, RAAJ-5TFO DUCK FOOT CULTIVATOR (Tractor Mounted)</b> <b>THIS TEST REPORT IS VALID UPTO 31.12.3031</b>	<b>COMMERCIAL (ICT)</b>
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**Manufacturer** : M/s. Rajesh Engineering Works  
Shop Khata No.158, Hanagal, Molkalmuru  
(Tq), Chitradurga (Dt), Karnataka, India.

**Applicant,** : The Manufacturer

**RAAJ, RAAJ-5TFO DUCK FOOT CULTIVATOR (Tractor Mounted)**

Report No.: **IMP-428/1789**

Month: **January**

Year: **2025**



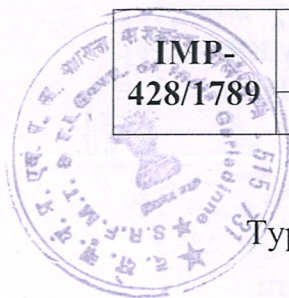
सत्यमेव जयते

**Government of India**  
**Ministry of Agriculture and Farmers Welfare**  
**Department of Agriculture and Farmers Welfare**  
**Southern Region Farm Machinery Training and Testing Institute**  
**Tractor Nagar, Garladinne- 515 731, District: Anantapur (A.P.)**  
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IMP-428/1789	RAAJ, RAAJ-5TFO DUCK FOOT CULTIVATOR (Tractor Mounted)	COMMERCIAL (ICT)
	THIS TEST REPORT IS VALID UPTO 31.12.3031	

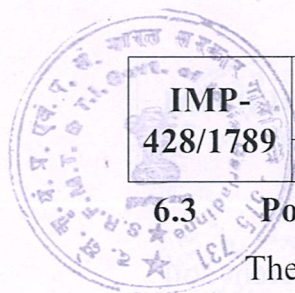
Type of test : COMMERCIAL (ICT)  
Period of test : October, 2024 to December, 2024  
Test Report No. : IMP-428/1789  
Month / Year of release : January, 2025

- The results reported in this report are observed values and no corrections have been applied for atmospheric and site conditions.
- The data given in this report pertain to the particular machine randomly selected by testing authority.
- The results presented in this report do not in any way attribute to the durability of the machine.
- This Test Report should not be reproduced in part or full without prior permission of the Director, Southern Region Farm Machinery Training & Testing Institute, Garladinne, Anantapur (A.P.).
- This is report on commercial test of duck foot cultivator named “**RAAJ, RAAJ-5TFO DUCK FOOT CULTIVATOR (Tractor Mounted)**”. This report is valid up to **31.12.3031**, Vide Ministry's O.M. No. 13-24/2018-M&T (I&P) dated 19.09.2018.

### SELECTED CONVERSIONS

S. No	Units	Conversion Factor
1	<b>Force</b>	
	1 kgf	9.80665 N
		2.20462 lbf
2	<b>Power</b>	
	1 hp	1.01387 metric hp (Ps)
		745.7 W
	1 Ps	735.5 W
	1 kW	1.35962 Ps
3	<b>Pressure</b>	
	1 psi	6.895 kPa
	1 kgf/cm <sup>2</sup>	98.067 kPa = 735.56 mm of Hg
	1 bar	100 kPa = 10 N/cm <sup>2</sup>
	1 mm of Hg	1.3332 m-bar





IMP- 428/1789	RAAJ, RAAJ-5TFO DUCK FOOT CULTIVATOR (Tractor Mounted)	COMMERCIAL (ICT)
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### 6.3 Power requirement:

The average draft requirement was ranged from 487 to 498 kgf and the average power requirement was calculated as 5.3 to 5.4 kW.

### 6.4 Wear of Shovel:

Sl. No.	Initial Mass (g)	Final Mass (g)	Loss of Mass (g)	Percentage of Wear	
				After 26.0 h	Per hour
1	2.560	2.515	0.045	1.76	0.067
2	2.590	2.460	0.130	5.01	0.193
3	2.520	2.460	0.060	2.38	0.091
4	2.555	2.390	0.165	6.45	0.248
5	2.520	2.455	0.065	2.58	0.099

**Remark:** - The hourly percentage wear of blades on mass basis was recorded as 0.08 to 0.25%.

### 7. EASE OF OPERATION & ADJUSTMENTS

No difficulty was observed during the operation and adjustment of cultivator.

### 8. DEFECTS, BREAKDOWNS AND REPAIRS

No defect/breakdown was occurred during entire period of field tests.


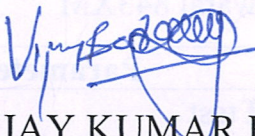
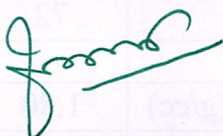
### 9. SUMMARY OF OBSERVATIONS, COMMENTS AND RECOMMENDATION

- 9.1** The dimensions of tines does not conform fully with IS 7565 (Pt-I):1975 (Reaffirmed 1999). It should be looked into for corrective action.
- 9.2** The specification of implement hitch does not conform fully to the IS 4468 (Pt-I):1997 (Reaffirmed 2012). It is recommended that the same should be provided conforming to the relevant Indian Standards.
- 9.3** The bolts used for shovel are hexagonal one, it is recommended to use the Counter sunk bolt as per IS 6813:2000
- 9.4 Hardness & Chemical analysis:**  
The Hardness & Chemical analysis of shovels does not conform to the requirement of IS 6690:1981 (Reaffirmed 2022). This should be looked into for corrective action.
- 9.5 Technical literature:**  
User's manual is not provided during the test. However, the same must be brought out in Hindi & other regional languages as per IS 8132:1999 (Reaffirmed 2004) for the guidance of users.  
The following literature should be provided.
- Service manual
  - Parts catalogue



IMP-428/1789	RAAJ, RAAJ-5TFO DUCK FOOT CULTIVATOR (Tractor Mounted)	COMMERCIAL (ICT)
	THIS TEST REPORT IS VALID UPTO 31.12.3031	

### TESTING AUTHORITY

 Er. PRAMOD YADAV AGRICULTURAL ENGINEER	 Er. VIJAY KUMAR BADAYA SENIOR AGRICULTURAL ENGINEER
 Dr. B.M. NANDEDE DIRECTOR	



### 10. APPLICANT COMMENTS

Sl. No.	Para No.	Comments
1	9.1	The company would work on the same to bring the dimensions of type to meet the requirement of IS 7565 (Pt-I):1975 (Reaffirmed 1999).
2	9.2	The company would work on the same to bring the specification of implement hitch to meet the requirement of IS 4468 (Pt-I):1997 (Reaffirmed 2012).
3	9.3	The company would work on the same to bring design and specification of shovel to meet the requirement of IS 6813:2000. We will work on the same to use the counter sunk bolt for shovel to meet the requirement of IS 6813:2000
4	9.4	We will work on the same to use the carbon steel for Tyne to meet the requirement of IS 6690:1981 (Reaffirmed 2022). We will work on the same to use the hardness and chemical composition of shovels to meet the requirement of IS 6690:1981 (Reaffirmed 2022).
5	9.5	We will brought out literature as per IS 8132:1999 (Reaffirmed 2004)