OFT – 09 (Agricultural Engineering)
(Kharif 2024) 1st Year

- **Thematic area:** Weed Management
- **Problem definition/Name of OFT:** Low yield due to high weed population.

<table>
<tr><td>1.</td><td>Title of On farm Trial (OFT)</td><td>Assessment of Manual low cost weeding tools in Niger</td></tr>
<tr><td>2.</td><td>Problem diagnosed</td><td>Low yield due to high weed population.</td></tr>
<tr><td>3.</td><td>Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)</td><td>T_2: Three Tyne hoe (Grubber)
T_3: Rotary tiller (Manual)</td></tr>
<tr><td>4.</td><td>Source of Technology (ICAR/ AICRP/SAU/other, please specify)</td><td>CIAE, Bhopal</td></tr>
<tr><td>5.</td><td>Production system and thematic area</td><td>Rice based production system and Weed Management</td></tr>
<tr><td>6.</td><td>Performance of the Technology with performance indicators</td><td>
<table>
<tr><th rowspan="2">Technology option</th><th rowspan="2">No. of replication</th><th colspan="3">Data related problem addresses</th></tr>
<tr><th>Field Capacity (ha/hr)</th><th>Field efficiency (%)</th><th>Weeding efficiency (%)</th></tr>
<tr><td>T_1: No weeding</td><td rowspan="3">10</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>T_2: Three Tyne hoe (Grubber)</td><td>0.021</td><td>45.03</td><td>73.52</td></tr>
<tr><td>T_3: Rotary tiller (Manual)</td><td>0.022</td><td>60.17</td><td>75.65</td></tr>
<tr><td>SEm±</td><td></td><td></td><td></td><td></td></tr>
<tr><td>CD(P=0.05)</td><td></td><td></td><td></td><td></td></tr>
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<tr><td>7.</td><td>Final recommendation for micro level situation</td><td>On farm trial was conducted on 10 farmers' field of village Tetra and Lasdar during kharif 2024 to assessment of manual low cost weeding tools in niger. The data collected during the trial clearly indicated that the mixiumumField Capacity (0.022 ha/hr), maximum Field efficiency (60.17%) and maximum Weeding efficiency(75.65%) was found under Technology option 3i'e Use of Rotary tiller (Manual). In same Technology option (T3) maximum yield (4.71q/ha), net income (Rs.21470.16) and B:C ratio (2.10) was</td></tr>
</table>

		found. Which is significantly superior over T1 and T2. The percent yield enhancement 58.58 and 1.5 over T1 and T2.
8.	Constraints identified and feedback for research	Unavailability of Rotary tiller (Manual) and Three Tyne hoe (Grubber)in locality.
9.	Process of farmers participation and their reaction	Participatory and interactive, Regular field visit, Field day & Farmers' reaction was satisfactory

B. Results with Table and good quality photographs in jpg.

Thematic area	Technology options with detailed treatments	Area (ha in crop)		Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Proposed	Actual					
Weed Management	T_1: No weeding	0.03	0.03	2.97	14760.00	25889.49	11129.49	1.75
	T_2: Three Tyne hoe (Grubber)	0.03	0.03	4.64	20246.91	40446.88	20199.97	2.00
	T_3: Rotary tiller (Manual)	0.03	0.03	4.71	19586.91	41057.07	21470.16	2.10
	SEm±							
	CD(P=0.05)							

T_2: Three Tyne hoe (Grubber)

T_2: Three Tyne hoe (Grubber)

T_3: Rotary tiller (Manual)