

- Thematic area: Integrated Nutrient Management
- Problem definition/Name of OFT: Assessment of efficacy of Nano DAP in timely sown Wheat.

1.	Title of On farm Trial (OFT)	Assessment of efficacy of Nano DAP in timely sown Wheat.
2.	Problem diagnosed	Excess use of fertilizer and high cost of cultivation.
3.	Details of technologies selected for assessment/refinement (Mention either Assessed or Refined)	Farmer Practice: RDF (120:60:40 NPK) Kg/ha T.O.1: 75% of RDF N:P and 100 % K + One foliar Spray with Nano DAP @500ml/acre of water (Single spray at 35 DAS) T.O.2: 50% of RDF N:P and 100 % K + Two foliar Spray with Nano DAP @500ml/acre of water at (35 DAS) and (60-65 DAS)
4.	Source of Technology (ICAR/ AICRP/SAU/other, please specify)	Annual Report 2022 of ICAR-RCER, Patna
5.	Production system and thematic area	Rice-Wheat, Integrated Nutrient Management
6.	Performance indicators of the technology	(i) Technical Indicator (No of effective tillers per m ² at days, Panicle length per cm, Test weight (1000-Seed weight), Yield (q/ha), Initial analysis of soil sample (ii) Economic Indicator (Cost of cultivation, Gross return, Net return, B:C ratio)
7.	Final recommendation for micro level situation	Use of 50% of RDF (N:P) and 100% of K@RDF (120:60:40 Kg/ha) with Two spray of Nano-DAP @500 ml/acre at 35 DAS and 60-65 DAS was found superior for maximum Net return and B:C ratio in comparison to Farmers' practice.
8.	Constraints identified and feedback for research	Not suitable for small and marginal farmer because their farm holdings are small and high labour cost for spraying of Nano-DAP.
9.	Process of farmers participation and their reaction	Farmers were enthusiastic to use Nano-DAP
10.	Area (ha)/ No. of units	2.0
11.	No. of trials/Replication	10
12.	OFT Start on	Nov. 2025
13.	OFT End on	Mar. 2026
14.	Critical inputs	Nano DAP
15.	Cost of OFT	Rs. 10000/-

Result:

Thematic area	Technology options with detailed treatments	Area (ha)		No. of Spike/ Panicle (sqm)	Spike length (cm)	No. of Grains/ Spike	Test wt. (g)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	BC ratio
		Proposed	Actual									
INM	Control – FP	0.2	0.2	164.5	10.2	30.4	32.2	33.4	30400	87500	57100	2.88
	T.O. I	0.2	0.2	168.4	10.8	31.0	32.6	34.8	28600	92400	63800	3.23
	T.O. II	0.2	0.2	172.6	11.2	31.2	32.8	36.5	29200	96800	67600	3.31

The result indicated that T.O.II (50% of RDF N:P and 100 % K + Two foliar Spray with Nano DAP @500ml/acre of water at (35 DAS) and (60-65 DAS)) resulted in the maximum grain yield (36.5 q/ha) of Wheat (var.HD2967) with highest B:C ratio (3.31) in comparison to Farmers' practice and T.O.I.