

Resource Conservation through Farm Mechanization

A. Happy turbo seeder for sowing of wheat

KVKs : Jabalpur, Narsinghpur

Description of technology adopted:

- ▶ Minimum soil disturbance (zero tillage)
- ▶ Surface cover (retention of crop residues)
- ▶ Enhancing cropping intensity
- ▶ Minimise the weed population
- ▶ Ensure timely planting and better plant stand
- ▶ Moisture retention
- ▶ Crop residue management

Suitability of technology:

- ▶ Medium Black Soils
- ▶ Medium and large farmers in district
- ▶ Availability of custom hiring centers
- ▶ Availability of the machine

Variety use : Wheat variety GW 273 & GW-322

Promising characteristics of technology:

S.No	Characteristics	Observation
1	Time saving	9 hrs
2	No. of plant population	95 m ²
3	No. of seeds/ ear head	42-45
4	Saving of labour	11 man days
5	Yield	43.90 q

Horizontal spread of technology:

Name of KVK	No. of village covered	No. of farmers	Area in ha
Narsinghpur	96	870	2783
Jabalpur	83	680	1740

Name of schemes supported by Central/State Govt. in large scale dissemination under convergence

Agency	Support
State Agriculture Department	Provided Inputs
Agriculture Technology Management Agency (ATMA)	Training and Demonstration
State Department of Agri. Engg	Happy turbo seeder machines through custom hiring centers
Directorate of Weed Science Research	Happy turbo seeder machine for demonstration purpose

Economics of adopted technology:

Cost (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	B:C ratio
18350	69120	50770	3.76



Wheat sowing after rice by happy turbo seeder

Impact of adopted technology in economic and social terms

Average saving of resources under conservation tillage as compare to conventional tillage

Technology	Time (hr/ha)	Fuel (Lit/ha)	Labour (man days)	Cost (Rs./ha)
Conventional tillage without crop residue	10	52	14	24550
Zero tillage with crop residue management	1	12.5	3	18350
Saving	9	39.5	11	6200
%	90	75.96	78.57	33.7

Impact of adopted technology in social terms

Particulars	Impact
Pollution control	Stop burning of fields
Children Education	English medium convent school
Social status	Social status high due to purchase of Machinery and other assetts
Personnel contact in society	High due to adoption of new technology
Linkages Developed	Linkages developed In different Institutions i.e. KVK, Agril. Deptt., ATMA, Agril. engg., NABARD etc.



Sowing by Happy Seeder



Wheat Crop after rice by happy turbo seeder

B. Sowing in chickpea with zero tillage machine after harvest of rice

KVKs : Balaghat, Ashoknagar

Description of technology adopted :

Seed sowing with Zero till seed drill machine directly in the rice harvested field without any field preparation with the Seed rate of 75 kg/ha at 35 cm wide rows.

Suitability of technology :

- ▶ Heavy soil (Kanhar)
- ▶ Major kharif crop is paddy
- ▶ Availability of 67 Zero till machines in the district

Variety use : Chickpea variety JG 63, JG 16, JG 14

Promising characteristics of technology :

S. No.	Characteristics	Observation
1	Time saving	15-20 days
2	Saving in cost of cultivation	Rs. 2000/ha
3	No. of pods/ plant	88.7
4	No. of branch/plant	3.8
5	Yield (q/ha)	14.2

Horizontal spread of technology:

Name of KVK	No. of village covered	No. of farmers	Area in ha
Balaghat	15	68	80
Ashoknagar	22	250	300

Name of schemes supported by Central/State Govt. in large scale dissemination under convergence

Agency	Support
NFSM	Provided Inputs (seed, Biofertilizer etc.)
State Agriculture Department	Training and Demonstration
State Department of Agri. Engg.	Provided Zero till seed drill Machine through Custom hiring centre

Economics of adopted technology:

Cost (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	B:C ratio
17000	44730	27730	2.63

Impact of adopted technology in economic and social terms:

- ▶ Enhanced the use of machines through custom hiring centres
- ▶ Saving of time - 10 hrs /ha
- ▶ Saving of fuel - 28 lit. /ha
- ▶ Labour saving - 6 man-days / ha

Impact of adopted technology in social terms

Particulars	Adoption
Pollution control	Stop burning of fields
Social status	Social status high due to income with purchasing power and children education
Personnel contact in society	Increased due to adoption of new agril. technology
Linkages developed	Good related institutions

C. Direct Sowing of Rice

KVKs : Datia

Description of technology adopted

Direct sowing of rice is promoted in rainfed areas of MP with light soil, where initial soil moisture is exploited for sowing treated seeds by seed cum fertilizer drill. The technology saves 25% seed (over broadcast method), 30% labour (over transplant method), nutrient use efficiency 35% (with fert. seed drill) and promotes mechanization.

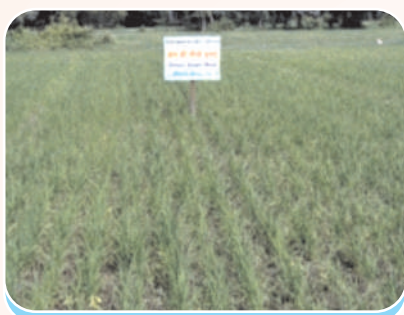
Line sowing helps in inter-culture operations and better weed management. Yield also increases by 10-16%.

Promising characteristics of technology:

Characteristics	Unit	Observation
DSR promotes mechanization	Nos	19 CHCs established
Less labour dependent	Nos/ha	Lessens the labour required (33 labours/ha)
Diesel saving	Lit./ha	10 l/ha diesel saved
Early maturity	days	10 day early harvesting leads to early sowing of rabi crops utilizing residual moisture

Horizontal spread of Direct sowing of Rice

KVKs	No. of village covered	No of farmers	Area (ha)
Datia	8	32	65



Economics of adopted technology per ha

KVK	Cost (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	B:C ratio
Datia	34860	93040	58180	2.67

Name of Schemes supported by Central / State Govt. In large scale dissemination of under convergence

Central Govt	State Govt.
Input Subsidy of Rs 7500.00 per ha/ Farmer under ATMA Scheme	Composite Nursery- Seed and facility provide for raising nursery

Impact of adopted technology in economic and social terms:

- ▶ 65 ha mono-cropped area transformed double cropped area under rainfed conditions.
- ▶ Net return of Rs. 177580 against which is Rs 2732/ha more over traditional transplanting method of sowing.
- ▶ Total 2145 man days saved in terms of profit Rs. 4.29 Lakh saved from 65 ha area.



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