

Wheat production through Utera

under rice-wheat cropping system

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Relay cropping is a method of multiple cropping where one crop is seeded into standing previous crop well before harvesting of the first crop. It may solve a number of conflicts such as inefficient use of available resources, controversies in sowing time, fertilizer application and soil degradation. Relay cropping is a complex suite of different resource efficient technologies, which possesses the capability to improve soil quality, increase net return, increase land equivalent ratio and control the weeds and pest infestation. It is a beneficial tool that results in better utilization of residual soil moisture from previous crops and reduces cost of production per unit area.

Key words: Relay cropping, Utera, Wheat

RICE based relay cropping is most popular in Chhattisgarh, West Bengal and south-east part of Madhya Pradesh. An innovative farmer was practicing rice-linseed cropping system since long back, but he was earning low profit. So he started sowing of wheat in 2010 as an Utera (relay) crop instead of linseed in an area of 2.0 ha. Initially he got 10 q/ha yield of wheat. This practice was continuously taken by the farmer in his field up to 2016. The farmer met Scientists of KVK in a farmers' training which was organized by KVK in his village Tikari, Block Barghat, District Seoni. A training

programme was organized in the village on packages and practices of utera wheat cultivation, which included the seed treatment, suitable soil moisture status at the time of seed broadcasting, plant nutrient management and selection of suitable varieties for relay cultivation and weed control etc.

Technology

The technology included seed soaking in water for 6 hours and then seed treatment with vitavax power 2 g/kg of seed and chloropyrifos (20 EC) 4 ml/kg seed. It protected the seed from rats and other insects-pests.

Seed was broadcast when previous crop (paddy) was standing well about 15 days before harvesting of crop. Soil should have sufficient moisture content (wet soil). The farmer applied 150 kg/ha seed rate. Another improved package and practices provided to the targeted farmers included application of 100 kg DAP, 50 kg MOP at the time of broadcasting of seed, 100 kg urea at the time of first irrigation and weedicide vesta 400 ml/ha 25-30 DAS, which increased yield of Utera wheat by more than two fold. Earlier, the farmer has adopted their own package of practices in Utera wheat.



Before adaptation of improved technology



Utera wheat crop in early stage

Economics of Utera wheat technology (in ₹/ha)

Operation/input	Detail of adopted technology	Previous expenditure (₹)	After adoption expenditure (₹)
Field preparation	No field preparation	0	0
Seed	125 kg @ ₹ 35/kg	4,375	4,375
Seed treatment	250 g Vitavax power	00	200
Seed broadcasting	2 labours for 1 day @ ₹ 150/day	300	300
Fertilizers	2 bags DAP @ 1250/-	00	2,500
	Urea 4 bags	530	1060
	MOP 50 kg	00	578
Application of fertilizers	4 labours @ ₹ 150/day	600	600
Weedicide	400 ml vasta @ ₹ 1250/-	00	1250
Weedicide spray	5 labours	00	750
Irrigation	2 irrigation @ ₹ 500 only electricity bill	1,000	1,000
Labour for irrigation	2 labours	300	300
Harvesting through Harvester	@ ₹ 1,000/ acre	2,500	2,500
Transporting charges by trolley		1,800	2,000
Packing and storage	@ ₹ 5/q	185	185
Miscellaneous		1,000	1,000
Total Cost		12,590	18,598
Gross income	37.0 q/ha @ ₹ 1735/-	19,085	64,195
Net income	(64,195-18,598)	6,495	45,597
B:C Ratio		1.51	3.45

Adoption of technology: The innovative and progressive farmer Shri Arun Bhopche, native of village Tikari, Block Barghat, Seoni, MP has large size land holding. He has used innovative approach in Utera wheat cultivation since 2017-18, and increased Utera wheat area to about

5.5 ha with adoption of scientific approaches.

Benefit to farmer: Before adoption of improved technology the wheat yield was 11.0 q/ha. After adoption of Utera wheat cultivation the yield was 37.0 q/ha. He has got net profit of ₹ 45,597/ha and higher

B:C ratio (3.45) with an expenditure of ₹ 18,598/ha. Previously he was getting net profit of ₹ 19,085/ ha and B:C ratio (1.51) with expenditure of ₹ 12,590/ha.

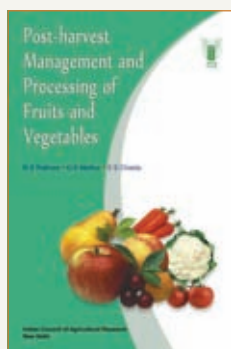
Outcome/horizontal spread of technology in area: Technology was adopted by 16 farmers in his village and 110 ha was sown. Besides, the area has been increasing under Utera wheat cultivation in the Block Barghat, Seoni.

Conclusion

The innovative farmer Shri Arun Kumar Bopche was practicing transplanted rice-Utera wheat for last few years, but getting low return, so he adopted the production of Utera wheat with scientific approach in an area of 2.0 ha. Regular monitoring by the scientists and the efforts put by Shri Arun Bhopche resulted in higher yield of utera wheat. Now the farmer gets higher productivity and returns. This technology is spreading to other areas and many farmers are adopting this technology.

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