

**Original Article**

Success Story of Alpesh Bhai Patel: Embracing Innovation in Rice Cultivation with Direct Seeded Rice

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INTRODUCTION

Alpesh Bhai Patel is an experienced farmer from the fertile fields of Kheda district of Gujarat, earning his living from rice farming. Similar to most of his fellow farmers, he also followed the conventional mode of cultivation called Transplanted Rice or TPR for several years. While TPR had been a foolproof method for generations, the system was not without its problems and it slowly began to divert the focus of Alpesh Bhai on topics such as that of water scarcity, labour shortages and to the ever-growing cost of production had started to eat into his livelihood.

In 2023, pushed by ever-growing pressures for sustainable farming, Alpesh Bhai took a bold step: transitioning from the conventional TPR method into the more innovative and sustainable method called DSR, specifically the new method FullPage by Savannah Seeds. It was an informative journey that transformed not only his farm but also set an example for farmers in the region.

Challenges in TPR Cultivation: For years, Alpesh Bhai had been deeply involved in the ways of TPR-raising rice seedlings in a nursery and transplanting them into the main field. Though effective, this was a kind of hectic to undertake and came with a bunch of challenges:

- 1. Water Scarcity:** TPR is highly dependent on water, mainly at the transplantation stage. With erratic rainfall and depleted groundwater and sources were slowly becoming more and more unpredictable, hence posing a high risk to sustainability and crop yields.
- 2. Labour-Intensive:** It is labour-intensive in terms of transplanting. As a matter of fact, transplanting seedlings requires a lot of labour. But with urban migration and increased costs of labour, it was hard to get enough labour and that too at affordable costs.
- 3. High Costs:** Rising cost of labour and inputs like fertilizers and pesticides was thus reducing the profitability of rice farming.
- 4. Environmental Impact:** Heavy use of water and chemicals in TPR causes soil degradation the long run.

With these challenges growing, Alpesh Bhai continued to seek out other options that would alleviate the pressure of these challenges and still keep his farm profitable.

Exploring Direct Seeded Rice (DSR) Technology: In 2023, during a demonstration activity conducted by Savannah Seeds, Alpesh Bhai came to know about Direct Seeded Rice (DSR) technology. The progressive mindset of Alpesh Bhai convinced him to try and adopt this new method, which provided him with several benefits and turned out to be a turning point in the method how he will be going to cultivate paddy.

1. Water Efficiency: The amount of water required by DSR is way lesser than in TPR, since puddling and transplanting are avoided. This became a major plus for Alpesh Bhai, with a region facing the shortage of water.

2. Labour Requirement Decreased: Sowing of seeds directly into the field greatly decreases the labour requirement at the time of transplantation-which happens to be the most crucial time. Not only this has reduced the cost but also cut off the risk of shortage of labour for other activities.

3. Cost-Effective: The method was cheaper to implement, with further savings on input costs like water, labour and chemicals, thus increasing overall profitability.

On further discussions with Alpesh Bhai Patel on the economic aspect DSR, following economical comparison between TPR and DSR was derived out:

Conventional TPR		Modern DSR	
Particulars	Cost (per acre)	Particulars	Cost (per acre)
Seeds 6 kg	2100	Seeds 7 kg including herbicide	5100
Nursery Raising including nursery weeds management	1500	Nursery raising	00
Transplanting	4000	Seed drilling	800
Nutrient Management	3670	Nutrient Management	3670
Weed management (Herbicides and labour respectively= 750 and 1250)	2000	Weed Management (labour cost for herbicide spraying 1 man day)	250
Irrigation management*	100	Irrigation management*	100
Harvesting by combine harvesting	2500	Harvesting by combine harvesting	2500
Miscellaneous	1500	Miscellaneous	1500
Total	17370	Total	13920

*Irrigation management includes labour cost only as irrigation is done by Canal, so irrigation cost is not included.

Note for readers: The costs included in the above table are area specific and may vary from farmer to farmer and area to area depending upon cultural practices and products used.

Above calculation revealed that cost of cultivation of DSR is approximately 19.8% less than conventional TPR and along with this, it also provides peace of mind as it eases out the cultural practices very much.

4. Environmental Sustainability: With Alpesh Bhai gaining more interest in environmental concern, DSR fitted well because it reduced water and chemical usage.

Transition: Transitioning from Transplanted Rice (TPR) to Direct Seeded Rice (DSR) was a significant challenge for Alpesh Bhai, requiring various adjustments to his traditional farming methods. DSR demands well-prepared, levelled soil, unlike the flooded fields needed for TPR. Alpesh Bhai invested considerable effort in ensuring his fields were evenly levelled, facilitating uniform seed distribution and germination. He chose the FullPage variety for its high-quality, drought and lodging tolerance, selecting seeds specifically suited for DSR. Using a seed drill machine, he introduced seed drilling technique to paddy cultivation, moving away from manual transplantation. Although DSR uses less water, effective irrigation remained crucial and Alpesh Bhai developed a strategic irrigation schedule, drawing on his expertise and advice from extension officers. Weed management, a major challenge in DSR which was tackled by using FullPage 134 seeds paired with the herbicide VEZIR (Imazethapyr 10% SL), which targets weeds while being harmless to the crop, ensuring optimal growth conditions.

5. Monitoring and Adaptation: During the entire crop cycle, Alpesh Bhai continuously monitored his fields regarding the growth of rice plants and continued making necessary adjustments in his practices. He was well connected with extension workers for the same.

The Results: Days passed and the rice plants were growing robustly, attaining a good height with healthy foliage. As time neared for the harvest, results remained very well above his expectation. He was able to obtain a higher yield of 7 quintal per acre as compared to other Hybrid varieties, that too at 19.8% lesser cost and in a more environmentally sound method.



Community Impact: His village had not missed the success of Alpesh Bhai with DSR. News of his plentiful harvest had trickled to his fellow farmers who want to know more of his new technology. Alpesh Bhai has always been community-minded. The moment other farmers approached him, he readily shared experiences and knowledge with his neighbourhood farmers. He organized field days

where he explained the method, the benefits and the challenges of DSR to an eager audience. Soon, other farmers of the region started adopting this method after Alpesh Bhai had achieved success. Shifting toward DSR was a huge transformation in the approach of rice cultivation the farmers of this community made collectively toward sustainability and economic feasibility.

CONCLUSION

The case of Alpesh Bhai Patel stands out as an example of innovation and adaptability in agriculture. By embracing the cultivation method of DSR Alpesh Bhai not only secured a brighter future for his farm but indeed set a new benchmark for rice cultivation in his community. His story from conventional TPR to DSR is really very inspirational and informative wherein the farmers have to crossbar most of the challenges to get better living standards and participate in the attainment of sustainable agricultural development.