

## From Small Plot to Abundant Harvest: A Potato Farming Success Story

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### ABSTRACT

*Research by Dheerendra Singh a PhD Student with his mentor Prof. Dr. Janmejy Sharma from Department of Agronomy, College of Agriculture, and Gwalior, India. The study conducted at the Research Farm of ICAR-Central Potato Research Institute in Gwalior aimed to investigate the impact of planting dates on the performance of potato crops, focusing on the Rabi seasons of 2021-22 and 2022-23. The experiment encompassed seven distinct planting dates, from September 15 to December 14, and utilized a randomized block design with four replications. The chosen potato variety was Kufri Mohan, planted at a seed rate of 3.5 t ha<sup>-1</sup> and spaced at 60 cm x 20 cm. The recommended dose of chemical fertilizers (180:80:120 kg ha<sup>-1</sup> N: P<sub>2</sub>O<sub>5</sub>:K<sub>2</sub>O) was applied. Various growth and yield attributes, nutrient content and uptake, storage behavior, quality parameters, and economic aspects were monitored to assess the performance of the potato crop. The results indicated that, among the different planting dates considered, planting on October 30 emerged as the most economically viable option to achieve optimum yields for the Kufri Mohan variety. Furthermore, planting the Kufri Mohan variety between October 15 and November 14 was recommended for better yields and minimal storage losses. These findings contribute valuable insights into the influence of planting dates on potato crop performance, providing practical recommendations for farmers to optimize yields and economic returns. The study underscores the importance of considering climatic factors and appropriate planting schedules to enhance potato cultivation's productivity and overall success in the region.*

**Keywords:** Potato, planting date, crop performance, yield, crop economics, quality parameters, physiological growth, nutrient content and uptake

### Introduction

In the heart of a rural village, Rakesh Kumar, a determined farmer, embarked on a journey that would transform his modest potato farm into a thriving success story. With a small plot handed down through generations, Rakesh Kumar faced the challenges of fluctuating yields and economic uncertainties. Undeterred, he decided to leverage modern agricultural practices and innovative techniques to redefine his family's future.

Rakesh Kumar his journey by participating in agricultural training programs offered by local extension services. Armed with newfound knowledge, he implemented precision farming techniques, optimizing planting densities and adopting efficient irrigation practices. Experimenting with different potato varieties, he selected those best suited to his region's climate and soil conditions and from Dheerendra Singh for full analysis and agricultural practices.

Recognizing the importance of soil health, Rakesh integrated organic farming principles, utilizing compost and green manure to enhance fertility. With a commitment to sustainable agriculture, he reduced reliance on chemical inputs, minimizing environmental impact and ensuring the long-term viability of his land by guidance from Dheerendra Singh. In collaboration with Dheerendra Singh, Rakesh implemented integrated pest management strategies to control common potato pests, reducing the need for chemical interventions. This not only lowered production costs but also contributed to healthier, pesticide-free potatoes.

The turning point came when Rakesh adopted a crop rotation system, alternating potato cultivation with legumes. This

practice not only improved soil structure but also mitigated disease pressure, leading to healthier and more resilient potato crops.

### Achievements

With dedication and hard work, Rakesh's potato yields increased significantly. The quality of his potatoes improved, earning him a premium in the market. Leveraging modern storage facilities and post-harvest technologies, he minimized losses and extended the shelf life of his produce.

Rakesh's success story didn't end in his field; it resonated in the community. His achievements inspired neighboring farmers to adopt similar practices, leading to a collective uplift in agricultural practices in the region. Rakesh farm became a model of sustainable and profitable potato production.

As word spread, Rakesh found new markets for his high-quality potatoes. Local businesses and retailers recognized the value of his produce, and Rakesh Kumar's farm became a preferred supplier. The economic prosperity generated by his success extended beyond his family, benefitting the entire village.

Today, Rakesh Kumar stands as a beacon of success in potato farming, proving that with knowledge, dedication, and sustainable practices, even a small plot of land can yield bountiful harvests. His journey symbolizes the transformative power of innovation and serves as an inspiration for aspiring farmers seeking success in agriculture. Dheerendra Singh put a lot of effort and did analysis and some of his photos during experimentation are below and to get practical farming to left his PhD work with a farmer.

**Plate 1. Digging of potato for observations**



**Plate 5. Water displacement recorded for True density of potato**



**Plate 8. Earthing up and application of urea**



**Plate 2. Determination of soil pH and EC**



**Plate 6. Field preparation**



**Plate 9. Planting of potato**



**Plate 3. Analysis of nitrogen and organic carbon in Soil**



**Plate 10. Grading of potato**



**Plate 4. Observation recorded for hollow heart and rotting**



**Plate 7. Gap filling in potato**

