



Adoption of High-Yielding Mustard Variety (DRMR 130-35) for Higher Productivity and Income

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INTRODUCTION



Background and Problem Statement

West Champaran district falls under the North West Alluvial Plain Zone, characterized by fertile sandy loam soils derived from the Himalayan foothills. Agriculture is the primary livelihood of the majority of the population, with rice–wheat and sugarcane-based cropping systems dominating the region. Mustard is an important oilseed crop and plays a crucial role in nutritional security after cereals.

Despite favourable agro-climatic conditions, the productivity of mustard in the district remained low, primarily due to:

- Use of local and inferior seed varieties
- Inadequate knowledge of balanced nutrient management
- Poor plant protection practices
- Limited irrigation and exposure to climatic risks
- Lack of awareness about scientific crop management

Shri Ravindra Ojahiya, a small and progressive farmer, came in contact with KVK Narkatiaganj and showed keen interest in improving mustard productivity. After diagnosing technological gaps, he was selected under Cluster Frontline Demonstration (CFLD) on mustard.

KVK Intervention

The scientists of Krishi Vigyan Kendra, Narkatiaganj designed and implemented a need-based intervention to enhance mustard productivity through scientific management practices. The following interventions were undertaken:

- Identification of technological gaps through field diagnosis
- Supply of high-yielding mustard variety DRMR 130-35
- Distribution of critical inputs such as sulphur, fungicides (Mancozeb + Carbendazim) and insecticide (Imidacloprid 17.8 SL)
- Capacity building through hands-on training on:
 - Soil testing and nutrient management
 - Scientific sowing methods
 - Integrated pest and disease management
- Continuous technical backstopping throughout the crop season
- Regular field visits, monitoring, data recording and advisory services
- **Variety:** DRMR 130-35
- **Seed rate:** 5 kg/ha
- **Seed treatment:** Mancozeb + Carbendazim @ 2 g/kg seed
- **Nutrient management:** 60:40:40:10 kg N:P:K:S per hectare
- **Weed management:** Timely intercultural operations
- **Plant protection:**
 - Control of Alternaria blight
 - Aphid management using Imidacloprid 17.8 SL @ 1 ml/2 L water
- **Harvesting:** At 80% pod maturity to minimize shattering
- **Post-harvest:** Proper drying and cleaning for better market quality

Results and Output

The adoption of scientific practices resulted in substantial improvement in productivity and profitability:

Improved Practices Adopted by the Farmer

Under the guidance of KVK scientists, the farmer adopted the complete scientific package of practices for mustard cultivation:

Parameter	Farmer's Practice	Improved Practice
Yield (q/ha)	10.7	15.6
Yield Increase	–	45.79%
Gross Return (Rs./ha)	44,272	59,585
Net Return (Rs./ha)	21,822	32,359
Benefit–Cost Ratio	1.97	2.19

- Pest and disease incidence was significantly reduced
- Improved seed quality and oil content fetched better market prices
- Efficient input use reduced production costs and enhanced profitability
- Neighboring farmers were convinced about the benefits of scientific mustard cultivation
- Adoption of improved practices expanded beyond the demonstration area

Impact and Outcome

Economic Impact

- Significant increase in net income and profitability
- Improved cost–benefit ratio ensured economic sustainability

Social Impact

- Enhanced confidence and decision-making ability of the farmer
- Improved socio-economic status and livelihood security
- Farmer emerged as a role model for neighboring farmers

Extension Impact

- Demonstration effectively reduced the technology gap

Economic Impact of Technology

- Scientific cultivation practices led to higher yield and income
- Reduced plant protection costs and improved environmental sustainability
- Encouraged systematic, need-based farm management
- Strengthened farmers' trust in KVK-led interventions

Outcome

The demonstrated technology resulted in improved productivity, reduced pest and disease incidence, and higher profitability. Adoption of the high-yielding mustard variety along with scientific management practices enhanced oilseed production and contributed to income augmentation of the farmer.

Lessons Learned and Future Prospects

The success highlights the importance of quality seed, balanced nutrition, timely sowing, and integrated pest management for achieving higher mustard yields. Continuous technical support from KVK scientists was critical in overcoming adoption barriers and building farmer confidence.

Encouraged by the results, the farmer plans to expand mustard cultivation and adopt crop rotation with pulses and vegetables to improve soil health and year-round income. Wider dissemination of such CFLD-based interventions can significantly contribute to oilseed self-sufficiency and farmers' income enhancement.

CONCLUSION

The success story of Shri Ravindra Ojahiya clearly demonstrates that KVK-led cluster frontline demonstrations, coupled with scientific

crop management practices, can significantly enhance mustard productivity, profitability, and farmers' livelihoods. This intervention not only improved individual income but also created a replicable and scalable model for oilseed production in West Champaran district.

Acknowledgement

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Message

"Scientific mustard cultivation transformed my income and confidence. The guidance of KVK helped me achieve higher productivity and profitability."

— **Shri Ravindra Ojahiya**



CFLD demonstration of Mustard cv. DRMR 150-35 at field of Shri Ravindra Ojahiya