



Bihar to the World: Strengthening India's Mango Export Compliance for a Resilient Future

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A B S T R A C T

India can enhance mango exports considerably, however access of international market is not only dependent on its production and quality but also on strict compliance of phytosanitary and documentation requirements. Following the incorrect filling of the phytosanitary document, the US rejected consignments of Indian mango in May 2025. It has economic risks of gap in export compliance. In Maharashtra, mangoes treated at an irradiation facility led to the rejection and destruction of their consignments, also reportedly causing huge losses to exporters. The episode carries critical messages for upcoming mango exporting state like Bihar. The major mango producing state of India, the state produces varieties like Jardalu, Chausa, Fazli and Sipiya, which are GI tagged. Bihar can fortify its domestic and international mango markets with the suitable infrastructure, capacity building, and tech-enabled regulatory compliance. The article presents critical issues such as Export Readiness, Phytosanitary Certification, Irradiation Infrastructure, Documentation and Traceability. It also suggests pre-shipment verification, digital certification, AI-assisted document verification, enhancing export infrastructure, and international collaboration measures. Bihar can transform its production potential into sustainable international market opportunities with a strong, transparent and compliant export framework.

Keywords: Mango Export in Bihar, Phytosanitary Compliance, Export Infrastructure, Irradiation, Digital Certification, Traceability

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1. INTRODUCTION

Customs rejected around 15 mango shipments in May 2025 that were supposed to reach the United States because of inaccuracies in the phytosanitary certificates, such as PPQ (Package Performance Qualification) 20.3. This phytosanitary certificate is related to the treatment of irradiation (India Times

2025). These mango fruits treated at the MSAMB (Maharashtra State Agricultural Marketing Board) facility located in Maharashtra were actually found to be non-compliant to that of requisite standard parameters. Therefore, the exporters decided to destroy them instead of transporting them back to the country because of its perishability, and prohibitively

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expensive challenges. Therefore, this incident caused a financial loss exceeding \$5,00,000, according to a Newspaper article by Economic Times 2025. This incident shows that we need a strong compliance mechanism in international trade. This news gained national attention, but it also gives insights into India's agriculture sector, especially for improving export centers in places such as Bihar, as it is the third largest mango producer in the country.



Figure 1. Bearing mango tree

2. INDIA-U.S. MANGO EXPORT INCIDENT: A WAKE-UP CALL

This incident tells us to re-evaluate India's export compliances and strategies and improve them to gain an advantage in export. Bihar has a high production of fruits, particularly mango, and there are several mango varieties those are geographically tagged in Bihar, such as Jardalu (from Bhagalpur), Chausa (from Buxar), Fazli, and Sipiya (from Samastipur). Therefore, Bihar can gain substantially from this kind of reflection and has the opportunity to position itself as a reliable supplier of mangoes in the global markets provided a thorough identification of systematic deficiency, strategic utilization of technology and the enhancement of capacities. Being a potential exporter of mango Bihar has developed a roadmap to get the advantage of the fiasco. We summarize some pertinent issues on which further deliberations and policy can be developed. Those are as follows:

- Capacity building for export readiness: Rigorous training on phytosanitary protocols for exporting to other countries is essential, and training exporters, pack house operators, and organizations related to agricultural marketing in Bihar can do it.
- Improving infrastructure: To enhance mango export from Bihar, an adequate investment

should be made in establishing USDA-approved irradiation facilities or exploring partnerships with nearby states to ensure the compliances needed to export mangoes from Bihar. It is necessary to establish export certification centers within the state, which also meet automation checks to reduce human error.

Integrating digital technology: Ensuring secure documentation by utilizing technologies such as Blockchain and installing AI-driven validation systems to ensure the accuracy and authenticity of certificates like PPQ203. A pilot project in Bihar could show that India is committed to modernizing its export compliances.



Figure 2. Packaging of mango in CFFB

3. POLICY MEASURES FOR ESTABLISHING A RESILIENT EXPORT FRAMEWORK

The India and United States mango export incident serves as a wake-up call for national and state policymakers. Several policy measures must be implemented to support Bihar's emergence as a significant global food exporter.

- Compulsory pre-shipment verification: Introducing an additional layer of scrutiny by third-party to verify the phytosanitary certificates will help identify errors early.
- Establishing digital compliances: Establishing systems to reduce human error and improve traceability, integrated digital and AI platforms for documentation.
- Developing export infrastructure: Providing incentives for establishing facilities required for export, such as irradiation and certification facilities in major exporting hubs like Bihar.

- International collaborations: To streamline compliance protocols and build mutual trust, it is essential to establish a bilateral cooperation framework with importing countries

4. A VISION FOR BIHAR'S MANGO EXPORTS

By drawing lessons from the recent India-U.S. mango disaster, India can strengthen its potential export hubs, such as Bihar, by introducing state-of-the-art digital certification, ensuring compliance and equipping exporters with the knowledge and tools necessary to meet phytosanitary requirements. By doing so, Bihar can establish itself as a model for other states and expand its presence in the international market. A resilient export framework that is technology-enabled and compliance-driven is a vision and avital requirement for the country.

5. CONCLUSION

The 2025 rejection by the United States of Indian mango consignments points to the fact that production and product quality alone are not enough for successful exports. It is equally important to comply with phytosanitary requirements, ensure proper documentation, apply treatment and traceability. The experience offers a warning and an opportunity for Bihar. The state has mango resources of great value and distinctive varieties like Jardalu, Chausa, Fazli and Sipiya that are the basis for an export-oriented mango industry. Nonetheless, investment in infrastructure, skilled human resources and technology-enabled compliance system must support this potential. By means of compulsory pre-shipment verification, digital certificates, AI supported document verification, better irradiation and certification facilities and further international cooperation export failure risks can be lowered. The state can further entrench its position with the setting up dedicated export hubs and piloting integrated digital compliance systems. This means that Bihar can not only aspire to export more mangoes but also emerge as a reliable, traceable and compliant agricultural export hub. The capacity of the state to develop an export-ready framework for its agricultural produce will help convert its production potential into opportunities in international markets.

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