

U.S. FDA Strengthens Food Traceability Requirements by 2028

Key FDA Requirements

24H English Documentation Requirement

Companies must provide FDA-requested electronic traceability records in English within 24 hours. Electronic Sortable Spreadsheet format required.

Critical Tracking Events (CTE) Management

Companies must record detailed information for six key traceability stages - harvesting, cooling, initial packing, shipping, transformation, and receiving.

Lot-Based Traceability

All products must be traceable from origin to destination using lot numbers. Every movement and transaction record must be traceable and managed systematically.

Key Data Elements (KDE) Management

Data generated at each supply chain stage must be managed systematically.

*CTE: Critical Tracking Events
*KDE: Key Data Elements

CTE	Harvesting	Cooling	Initial-Packing	Shipping	Transformation	Receiving
KDE	Product list, location, time, handlers, lot codes, TLCs, and other stage-specific traceability data					

Penalties for Non-Compliance	
Export Ban If a company fails to respond to an FDA request within 24 hours, U.S. imports of its products may be restricted.	Product Recall Failure to ensure timely traceability may lead to product recalls and removal from shelves.
Legal Sanction Violations may result in administrative penalties, fines, or prosecution under FDA regulations.	Loss of Consumer Trust Regulatory breaches and scandals can lead to reputational damage and loss of consumer confidence.

Tech Innovation for Food Industry: Halal Certification

Rapidly Growing Southeast Asian & Middle Eastern Markets	▶	Halal certification mandatory from Oct 17, 2026
Indonesia's Halal Certification Requirement	▶	Exports prohibited without compliance
Raw material sourcing, production, and distribution processes	▶	Full transparency required

Halal Market: Over USD 300 Billion

A Strategic Opportunity for Food and Consumer Goods Exporters

- ✓ Data-Driven Competitiveness
- ✓ Simplified Compliance & Guaranteed Credibility

FutureSense × Carbon Neutrality

Connecting Data

Reducing Waste in the Food Industry



Real-Time Inventory Management

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Blockchain-Based Traceability

Collected data is managed on an immutable blockchain, ensuring transparency and trust. This enables reliable regulatory compliance, quality control, and higher consumer satisfaction. Enhanced inventory accuracy helps prevent overstocking, excess production, and waste.



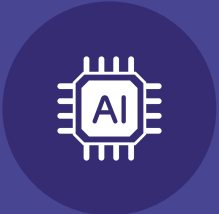
ML Demand Forecasting

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Loss and Waste Reduction

Machine learning algorithms analyze accumulated data to detect patterns and anomalies, predicting demand and minimizing potential losses. Real-time data tracking helps identify the root causes of waste and provides actionable insights for process improvement.



AI Technology Integration

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Data-Driven Decision Making

Food4Chain simplifies data collection and management across production sites. F4C supports strategic decision-making, real-time responsiveness, and sustainable process optimization - creating new value through continuous improvement.



Blockchain & AI-Powered Food Industry Green Digital Transformation

Unlike traditional ERPs, Food4Chain is a cloud-based SaaS platform that digitizes the entire production process - from factory floor to supply chain, driving both productivity and sustainability.

Why is Food4Chain Essential to Digital Transformation?



Inventory Management

Most food manufacturers still rely on Excel-based tracking. Manual entries make it hard to manage inventory visibility, real-time responsiveness, and traceability, leading to compliance gaps and delayed responses.



Loss Management

Loss rates in competitive markets can reach 30-40%. Due to inconsistent lot coding by item, process, and equipment, it's difficult to trace and manage lots across systems; especially with different naming rules.



Traceability Management

Global regulations like the FDA FSMA 204 demand real-time tracking from production to consumer. This requires seamless traceability data across all stages of the supply chain.

Digital Optimization Solution for Food Manufacturers

Inventory & Loss Management Made Smarter

Mobile | On-site

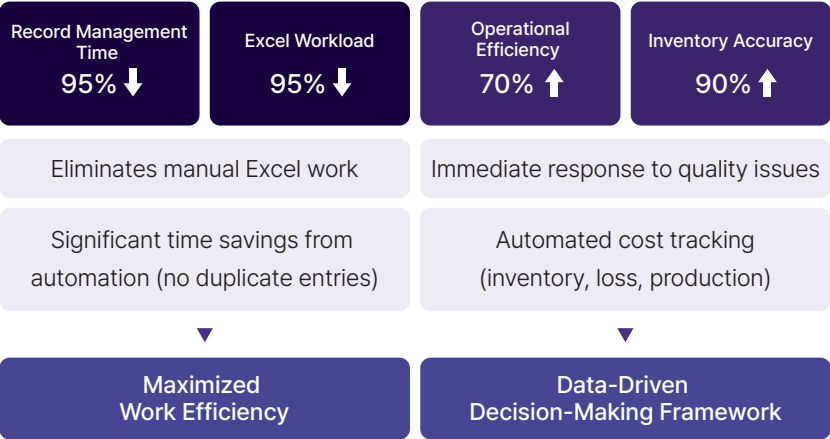
Real-Time Production Management

Record work orders and input production quantities per task in real time.
Track actual production based on expected output and automatically log deviations or adjustments.

PC | Office

Automated Production Logs and Material Tracking

Easily manage monthly and material-specific inventory, quantities, and costs.
Automatically generated production logs allow real-time tracking of material usage and related records.



Real-time QR/barcode scanning provides visibility into inventory levels, process progress, and input quantities.
AI-based demand forecasting optimizes production volumes, minimizes stockouts, and reduces loss-related costs.



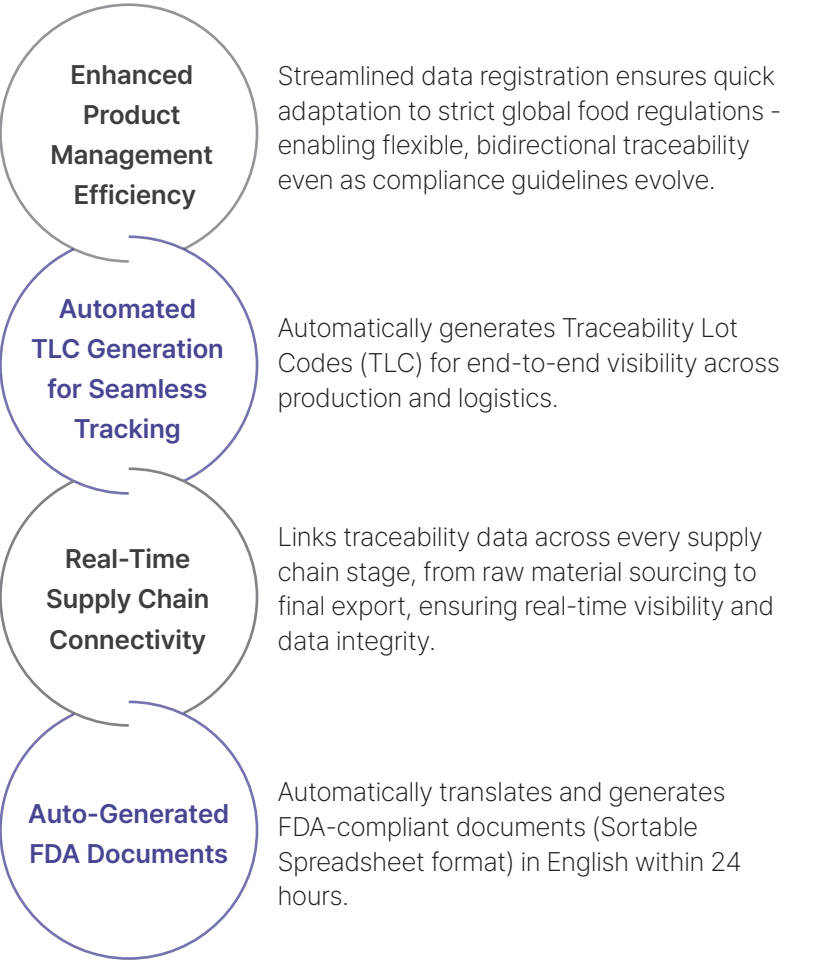
Monitors production waste and measures CO₂ emissions from discarded materials, providing accurate carbon-reduction diagnostics.



Comprehensive dashboard for production, cost, and workforce analysis.
Monthly and yearly reports rank high-loss areas, compare cost-performance gaps, and track raw material price trends.

Optimized for Global Regulatory Compliance

Blockchain-Based Food Traceability Solution



Requirement	Legacy ERP/MES	Blockchain-Based System
Data Integrity	Low (Editable)	Very High (Tamper-Proof)
24H Response	Difficult	Automatable
English Translation	Not Supported	AI Auto-Translation
Supply Chain Sync	Limited	Fully Integrated
Data Standardization	Difficult	Automated

Prevent Data Tampering

Share Transparent Information

Enable Real-Time Traceability

Strengthen Regulatory Trust