+357 96 030922
info@marketpublishers.com

Machine Vision for Post-Harvest Quality Analysis Market - A Global and Regional Analysis: Focus on Application, Product, and Regional Analysis - Analysis and Forecast, 2025-2035

https://marketpublishers.com/r/M964B8339DABEN.html
Date: March 2026
Pages: 145
Price: US$ 4,900.00 (Single User License)
ID: M964B8339DABEN

Abstracts

The global machine vision for post-harvest quality analysis market is expanding rapidly as the agriculture and food processing sectors seek more efficient, accurate, and automated methods for assessing crop quality. Rising consumer demand for uniform, high-quality produce, coupled with increasing food safety regulations, is driving the adoption of machine vision systems capable of detecting defects, measuring size and color, and ensuring grading consistency. Advances in AI, deep learning, hyperspectral imaging, and high-speed cameras are enabling real-time, non-destructive quality assessment across fruits, vegetables, grains, and other commodities. By integrating automated sorting, grading, and monitoring systems, producers and processors can reduce post-harvest losses, improve supply chain efficiency, and enhance market value. While initial investment costs and system complexity remain challenges, growing awareness of yield optimization, food traceability, and labor efficiency continues to fuel market growth globally.

Market Overview

The machine vision for post-harvest quality analysis market revenue was $22.4 million in 2024 and is expected to reach $209.1 million by 2035, growing at a CAGR of 22.11% during the forecast period (2025-2035). Machine vision for post-harvest quality analysis is emerging as a critical solution to reduce food loss, enhance quality control, and improve operational efficiency across agricultural supply chains. By combining high-resolution imaging, AI-driven defect detection, hyperspectral analysis, and automated sorting technologies, machine vision systems enable accurate, non-destructive

+357 96 030922
info@marketpublishers.com

assessment of fruits, vegetables, grains, and other commodities. These innovations allow processors and producers to standardize grading, monitor quality in real time, and optimize post-harvest handling, reducing waste and ensuring compliance with food safety and export standards. Integration with automated sorting lines, digital traceability platforms, and predictive analytics further enhances efficiency, speed, and precision. Driven by rising consumer expectations for high-quality produce, regulatory mandates, and the need for labor-efficient solutions, the market continues to expand globally, supporting sustainable and profitable post-harvest operations.

Industrial Impact

The adoption of machine vision for post-harvest quality analysis is transforming the agriculture and food processing industries by shifting from manual, subjective inspection to automated, data-driven quality assessment. By integrating high-resolution imaging, AI-based defect detection, and hyperspectral analysis, producers and processors can ensure consistent grading, reduce sorting errors, and detect quality issues in real time. A major industrial impact is the reduction of post-harvest losses and enhanced operational efficiency, allowing large-scale farms and processing facilities to optimize labor, improve throughput, and maintain product quality standards. Small and medium enterprises benefit from faster, cost-effective quality control that strengthens supply chain reliability and market competitiveness. Furthermore, digital integration and predictive analytics enable traceability, compliance with safety regulations, and informed decision-making, collectively modernizing post-harvest operations and supporting sustainable, profitable agricultural production.

Market Segmentation:

Segmentation 1: By Application

- Farmers and Growers
- Agri-Businesses and Cooperatives
- Food Processors
- Others

Agri-Businesses and Cooperatives Segment Leads the Market (by Application)

+357 96 030922
info@marketpublishers.com

The agri-businesses and cooperatives segment leads the machine vision for post-harvest quality analysis market because these organizations manage large-scale, centralized grading, packing, and export operations where consistent quality directly impacts revenue. Machine vision systems are extensively deployed at intake, sorting, grading, and pre-shipment stages to standardize inspections, reduce subjectivity, and ensure compliance with buyer specifications. Adoption is further driven by the need to manage variability across widespread sourcing networks and minimize disputes with downstream buyers. Cooperatives benefit particularly from uniform grading rules across member farms, enhancing transparency, trust, and pooled marketing efficiency. For export-oriented operations, rapid, software-led quality assessment has become an essential operational tool, making this segment the dominant driver of market demand.

Segmentation 2: By Harvest Type

- Fruits
- Vegetables
- Grains and Pulses
- Nuts
- Others

Fruits Segment Dominates the Market (by Harvest Type)

The fruits segment leads the machine vision for post-harvest quality analysis market due to the high sensitivity of fruit quality to appearance attributes like color, size, shape, and surface defects, which directly impact grading, pricing, and market acceptance. Post-harvest handling challenges such as bruising and rapid decay make automated, software-led inspection critical at packhouses, export consolidation centers, and receiving points. Growth in this segment is driven by the need to standardize grading across distributed sourcing networks and multi-destination supply chains, reducing disputes over lot quality during transit. Machine vision platforms create consistent, image-based quality records that enhance decision-making, speed, and traceability, making fruits the primary driver of adoption and innovation in the market.

+357 96 030922
info@marketpublishers.com

Segmentation 3: By Business Model

One-Time Purchase

Subscription-Based

Subscription-Based Segment Dominates the Market (by Business Model)

Subscription-based offerings lead the machine vision for post-harvest quality analysis market because they provide flexible, scalable, and continuously updated solutions that adapt to seasonal changes, new crop varieties, and evolving buyer standards. This model allows operators to expand inspection across multiple facilities while maintaining centralized control, integrating quality data directly into daily workflows. Recurring licensing supports seamless updates to algorithms and inspection protocols without operational disruption, making subscription platforms the preferred choice as machine vision systems shift from pilot projects to enterprise-wide adoption.

Segmentation 4: By Platform

Cloud-Based

On-Premise

Cloud-Based Segment Dominates the Market (by Platform)

Cloud-based deployment leads the machine vision for post-harvest quality analysis market due to its ability to centralize data from multiple locations, providing real-time visibility and unified dashboards across the supply chain. It enables rapid implementation, remote access, and standardized reporting without heavy local infrastructure, making it ideal for distributed operations. The model is particularly valuable in export-oriented supply chains, where suppliers, buyers, and quality teams require a shared reference for inspection outcomes. By combining centralized oversight with localized execution, cloud platforms ensure consistent grading and quality control across geographically dispersed post-harvest operations.

Segmentation 5: By Region

+357 96 030922
info@marketpublishers.com

North America

Europe

Asia-Pacific

Rest-of-the-World

North America Leads the Market (by Region)

North America leads the machine vision for post-harvest quality analysis market due to the early integration of quality control as a critical commercial and legal risk management function. Large produce importers, processors, and distributors in the U.S. and Canada operate under strict buyer specifications and liability standards, driving early adoption of software-based inspection to standardize grading, reduce shrinkage, and support dispute resolution. The region’s high digital maturity, including ERP adoption, centralized procurement, and multi-site warehouse networks, reinforces demand for cloud-based platforms that harmonize quality data across locations. Labor constraints further accelerate adoption, making automated inspection a practical and strategic solution for consistent, reliable post-harvest quality management.

Recent Developments in the Machine Vision for Post-Harvest Quality Analysis Market

In April 2025, Sun World partnered with Clarifresh, an AI-driven quality management platform, to provide growers and packer-shippers in Egypt and Italy with advanced tools for optimizing quality control and enhancing supply chain consistency.

In November 2024, AgroFresh announced a collaboration integrating Rubens Technologies' hand-held AI scanner and Escavox trackers into FreshCloud, underscoring its commitment to data -driven quality control.

How can this report add value to an organization?

Product/Innovation Strategy: Key players in the machine vision for post-harvest quality analysis market are focusing on developing AI-driven imaging platforms that integrate multispectral and hyperspectral cameras, 3D vision, and deep learning algorithms for

+357 96 030922
info@marketpublishers.com

defect detection, grading, and sorting. Innovations include real-time quality scoring, automated bruise and decay detection, predictive shelf-life modeling, and cloud-based analytics. Companies are also investing in partnerships with hardware manufacturers, agribusinesses, and logistics providers to ensure seamless integration into packing lines and supply chains. The strategy emphasizes accuracy, speed, and scalability to improve consistency and reduce post-harvest losses.

Growth/Marketing Strategy: Market expansion has been fueled by rising demand for standardized quality control, export-oriented supply chains, and labor efficiency in post-harvest operations. Players use pilot demonstrations, case studies, and integration with ERP and warehouse management systems to showcase efficiency gains and ROI. Expansion strategies focus on high-value commodities like fruits and vegetables, multi-facility operations, and regions with stringent quality standards. Marketing emphasizes cost reduction, faster throughput, traceability, and compliance with buyer specifications.

Competitive Strategy: Leading companies differentiate through advanced AI models, proprietary imaging algorithms, cloud deployment capabilities, and strong integration with packhouse and logistics workflows. Competitive benchmarking evaluates inspection accuracy, speed, multi-commodity support, and ease of deployment across geographies. Firms strengthen their position through strategic alliances with agribusinesses, cooperative networks, hardware vendors, and software integrators. Success depends on delivering reliable, scalable solutions that reduce manual grading, enhance traceability, and support global supply chain quality standards.

Research Methodology

Data Sources

Primary Data Sources

The primary sources involve industry experts from the machine vision for post-harvest quality analysis market and various stakeholders in the ecosystem. Respondents, including CEOs, vice presidents, marketing directors, and technology and innovation directors, have been interviewed to gather and verify both qualitative and quantitative aspects of this research study.

The key data points taken from primary sources include:

validation and triangulation of all the numbers and graphs

+357 96 030922
info@marketpublishers.com

validation of report segmentations and key qualitative findings

understanding the competitive landscape

validation of the numbers of various markets for the market type

percentage split of individual markets for geographical analysis

Secondary Data Sources

This research study involves the usage of extensive secondary research, directories, company websites, and annual reports. It also utilizes databases, such as Hoover's, Bloomberg, Businessweek, and Factiva, to collect useful and effective information for an extensive, technical, market-oriented, and commercial study of the global market. In addition to core data sources, the study referenced insights from reputable organizations and resources such as the USDA Economic Research Service (ERS), the Food and Agriculture Organization (FAO) of the United Nations, the International Food Policy Research Institute (IFPRI), and leading agri-tech platforms such as Farmonaut and EOS Data Analytics (EOSDA) are essential. These sources offer comprehensive insights into precision agriculture, digital farming, sustainability practices, and technology adoption, which have a significant impact on map tool production worldwide.

Secondary research has been done to obtain crucial information about the industry’s value chain, revenue models, the market’s monetary chain, the total pool of key players, and the current and potential use cases and applications.

The key data points taken from secondary research include:

segmentations and percentage shares

data for market value

key industry trends of the top players in the market

qualitative insights into various aspects of the market, key trends, and emerging areas of innovation

+357 96 030922
info@marketpublishers.com

quantitative data for mathematical and statistical calculations

Data Triangulation

This research study involves the usage of extensive secondary sources, such as certified publications, articles from recognized authors, white papers, annual reports of companies, directories, and major databases, to collect useful and effective information for an extensive, technical, market-oriented, and commercial study of the machine vision for post-harvest quality analysis market.

The process of market engineering involves the calculation of the market statistics, market size estimation, market forecast, market crackdown, and data triangulation (the methodology for such quantitative data processes has been explained in further sections). A primary research study has been undertaken to gather information and validate market numbers for segmentation types and industry trends among key players in the market.

Key Market Players and Competition Synopsis

The machine vision for post-harvest quality analysis market is witnessing rising competitive intensity as food processors, packers, and exporters increasingly adopt automated inspection systems to ensure product quality, reduce waste, and comply with strict food safety standards. Market participants are integrating advanced imaging technologies, including hyperspectral imaging, 3D vision, and AI-driven defect detection, to improve the accuracy and speed of sorting, grading, and contamination detection across fruits, vegetables, grains, and processed food products. Key Technology, a member of Duravant, introduced upgraded optical inspection systems designed for high-throughput food processing lines, combining multi-spectral cameras with real-time analytics for precise grading. Meanwhile, Compac, part of TOMRA Food, strengthened its market position by integrating machine vision with advanced packhouse automation solutions to enable end-to-end digital quality monitoring and traceability across post-harvest supply chains.

Some prominent names established in this market are:

Clarifresh Ltd.

AgShift, Inc

+357 96 030922
info@marketpublishers.com

AgroFresh Solutions, Inc.

Agrinorm

FreshControl

Aptean

Keelings Knowledge

Radford Software

Intello Labs

Robovision

Neolithics

Rubens Technologies

Escavox

Agrograde

This report can be delivered within 1 working day.

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

4 REGION

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

5 MARKETS - COMPETITIVE BENCHMARKING & COMPANY PROFILES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Figures

LIST OF FIGURES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Machine Vision for Post-Harvest Quality Analysis Market - A Global and Regional Analysis: Focus on Application, Product, and Regional Analysis - Analysis and Forecast, 2025-2035

Product link: https://marketpublishers.com/r/M964B8339DABEN.html

Price: US$ 4,900.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/M964B8339DABEN.html