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Meat Speciation Testing Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Species (Cow, Chicken, Horse, Swine, Sheep and Others), By Technology (Polymerase Chain Reaction, Enzyme-Linked Immunosorbent Assay and Others), By Form (Raw, Cooked and Processed Meat), By Region and Competition, 2020-2030F

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Abstracts

Market Overview

Global Meat Speciation Testing Market was valued at USD 4.72 billion in 2024 and is expected to reach USD 9.07 billion in the forecast period with a CAGR of 8.03% through 2030. Driving growth in the global meat speciation testing market is the increasing incidence of food fraud, particularly species mislabeling. Several high-profile scandals have led to heightened public awareness and stricter food regulations worldwide. Authorities such as the European Food Safety Authority (EFSA), U.S. Department of Agriculture (USDA), and Food Safety and Standards Authority of India (FSSAI) have introduced more rigorous protocols for species identification, compelling meat producers and processors to adopt advanced testing methods like PCR (Polymerase Chain Reaction) and DNA barcoding to ensure compliance and protect consumer trust.

Key Market Drivers

Escalating Food Fraud & Species Mislabeling

The rising prevalence of food fraud—particularly in meat products—continues to challenge food safety systems globally. Species mislabeling, where one type of meat is

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deliberately or accidentally substituted for another, has become a frequent concern. In 2024, nearly 1 in 5 food fraud cases worldwide involved animal-origin products, highlighting the scale of the issue. This is especially critical in processed or ground meat, where visual identification is impossible. As trust in food labeling diminishes, governments and companies are investing heavily in meat speciation tests to ensure transparency and prevent consumer deception.

The frequency of species mislabeling in meat has grown significantly in recent years. Between 2020 and 2023, there was a 42% increase in substitution cases in certain European markets, driven largely by economic pressures and fragmented supply chains. Many incidents involved lower-cost meats like horse or pork being sold as beef or lamb. Such practices not only mislead consumers but also carry legal, ethical, and religious implications. The spike in these incidents is driving more widespread adoption of DNA-based testing methods across supply chains to uphold accuracy and prevent brand damage.

Food companies face increasing scrutiny as consumers demand accountability and transparency in product sourcing. In one recent audit, 14% of supposedly halal-certified meat products were found to contain traces of undeclared pork DNA, raising alarm among both regulators and religious organizations. This incident underscores the critical need for rigorous testing and certification systems. With multicultural societies growing globally, compliance with religious and ethical meat standards is no longer optional but a business imperative. Advanced molecular diagnostics are becoming a frontline tool in preventing such violations and maintaining consumer trust.

Technological advancements in DNA testing have made species identification faster, more accurate, and cost-effective. Multiplex PCR systems, for example, now allow simultaneous detection of multiple meat types in a single test, with adoption rates growing across meat processing hubs. In fact, in several developed regions, demand for multiplex PCR testing has risen by over 25% since 2021, as manufacturers seek to catch both intentional and accidental adulteration. As governments tighten regulations and penalties for fraud, companies are proactively integrating meat speciation protocols into quality control processes to avoid recalls, fines, and reputational losses.

Key Market Challenges

High Testing Costs & Limited Infrastructure

High testing costs continue to pose a significant barrier to the widespread adoption of

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meat speciation testing, particularly among small and medium-sized enterprises (SMEs) and manufacturers in low-to-middle-income countries. Advanced molecular testing technologies like PCR, LAMP, and DNA sequencing require specialized instruments, reagents, and skilled personnel—all of which demand substantial upfront investment. The recurring cost of consumables, calibration, and maintenance further adds to the burden, making routine testing financially unviable for many. Additionally, certification requirements and third-party testing charges can increase operational expenses, especially for businesses exporting to regions with stringent import regulations. This economic pressure discourages companies from incorporating testing into their standard quality control procedures. As a result, despite the clear need for species authentication to prevent fraud and ensure compliance, many producers delay or avoid testing altogether due to concerns over return on investment.

Infrastructure limitations further exacerbate the challenge, particularly in remote or developing regions. Reliable access to electricity, refrigeration for reagents, and contamination-free laboratory environments are essential for accurate testing—yet these basic requirements remain inconsistent in several countries. Even where testing facilities exist, they may be too far from production centers, causing delays in sample transport and result turnaround. This lag undermines real-time quality assurance, increasing the risk of fraudulent or mislabelled meat reaching consumers. In some cases, lack of government-accredited labs or delays in establishing regulatory frameworks hinder companies from complying with international standards.

Key Market Trends

Growing Adoption of Portable & Rapid Testing Technologies

The shift toward portable and rapid testing technologies is transforming how meat speciation is conducted across the food supply chain. Traditional laboratory-based methods, while accurate, are time-consuming, costly, and often centralized—leading to delays in quality assurance and regulatory compliance. In contrast, portable testing tools such as LAMP (Loop-mediated Isothermal Amplification), handheld PCR devices, and biosensors offer quick and reliable on-site results without the need for specialized lab infrastructure. These tools are particularly valuable for slaughterhouses, border inspection units, and decentralized processing facilities where immediate verification of species is essential. They reduce turnaround time from days to under an hour, enabling rapid decision-making and minimizing the risk of contaminated or mislabeled meat entering the market. This transition is accelerating as companies seek operational efficiency, lower testing costs, and compliance with increasingly time-sensitive food

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safety regulations.

The growing appeal of these rapid technologies is also linked to their adaptability and user-friendliness. New portable devices are being designed with simplified workflows, built-in data recording, and compatibility with digital traceability platforms. As a result, even non-technical staff in production settings can perform basic testing without the need for advanced training. This democratization of testing is especially beneficial in developing countries, where laboratory infrastructure may be limited or absent.

Key Market Players

VWR International LLC

ALS Limited

Eurofins Scientific SE

International Laboratory Services Ltd.

Genetic ID NA, Inc.

Neogen Corporation

LGC Science Group Ltd.

AB Sciex LLC

Scientific Analysis Laboratories Ltd

Report Scope:

In this report, Global Meat Speciation Testing market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

Meat Speciation Testing Market, By Species:

Cow

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Chicken

Horse

Swine

Sheep

Others

Meat Speciation Testing Market, By Technology:

Polymerase Chain Reaction

Enzyme-Linked Immunosorbent Assay

Others

Meat Speciation Testing Market, By Form:

Raw

Cooked

Processed Meat

Meat Speciation Testing Market, by Region:

Asia Pacific

China

India

Japan

South Korea

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- Australia

Europe

- France
- Germany
- United Kingdom
- Italy
- Spain

North America

- United States
- Mexico
- Canada

South America

- Brazil
- Argentina
- Colombia

Middle East and Africa

- South Africa
- Saudi Arabia
- UAE

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Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in Global Meat Speciation Testing market.

Available Customizations:

With the given market data, TechSci Research offers customizations according to the company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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