

Interpretation of Key Food Regulations in Food Labeling Standards

Xiangqin Yang, Binwei Ren

¹School of Smart Health, Hainan Technology and Business College, Haikou, Hainan, 570100, China

²Department of Environmental Protection Engineering, Hainan Technician College, Haikou, Hainan, 571100, China

ABSTRACT

Food labels serve as the statutory identity markers and information interfaces for prepackaged foods, directly ensuring food safety traceability and safeguarding consumers' right to know. This paper examines the hierarchical relationship among mandatory requirements in current laws and national standards from both legal logic and compliance practice perspectives. Focusing on critical issues such as ingredient list authenticity, nutritional data accuracy, functional claim boundaries, and allergen warnings, it dissects compliance challenges and legal vulnerabilities encountered by enterprises during implementation. It proposes that, based on improving top-level standard design, enterprises should establish full-lifecycle internal control defense systems and social co-governance mechanisms.

KEYWORDS

Food labeling; Labeling standards; Food regulations

1 Introduction

The widespread circulation of prepackaged foods has amplified information asymmetry between producers and consumers, shifting the focus of food safety governance from mere hazard control to transparency-centered risk communication. Under this logic, food labels have evolved from superficial packaging decorations into statutory contracts that convey product substance, define risk boundaries, and bear legal responsibility. Despite regulatory red lines established through standardized frameworks, industry compliance management remains mired in reactive, lagging responses. Product updates and process innovations continually expand regulatory gray areas, while profit-driven mislabeling and borderline practices persistently erode market trust. Therefore, label compliance must transcend mechanical adherence to operational guidelines and ascend to the theoretical level of the rule of law. By dissecting the legal foundations underlying regulations and addressing implementation challenges, we can clarify the boundaries of obligations. This approach alleviates the tension between regulatory rigidity and commercial flexibility, propelling the food industry toward a path of high integrity and adherence to the rule of law.

2 Legal Basis for Food Labeling Regulations

2.1 Components of China's Food Labeling Legal Framework

China's food labeling regulatory framework exhibits a distinct multi-tiered, pyramid-shaped structure, forming a rigid constraint framework for corporate compliance operations. At the top tier, laws and regulations, along with their implementing rules, establish the legal obligation for prepackaged foods to bear labels, while setting fundamental requirements such as prohibiting false content and claims related to disease prevention or treatment. The intermediate tier comprises various specialized management measures that function as the technical constitution for labeling. These measures provide detailed technical specifications for layout, text, numerical values, and formatting of label content. Additionally, supplementary elements include special provisions regarding labeling found in product standards for special dietary foods, health foods, and specific categories ^[1]. This framework encompasses not only mandatory regulations but also numerous recommended standards. In judicial practice, these often transform legal effect. Once a company declares compliance with a recommended standard on its label, that standard becomes a mandatory constraint for that product. This complexity in legal sources requires compliance entities to possess systematic regulatory interpretation capabilities.

2.2 Legal Rationale for Mandatory Food Labeling Requirements

The design logic behind mandatory labeling requirements is deeply rooted in the principles of risk prevention and substantive fairness. The core purpose of legally mandating the disclosure of elements such as food name, ingredient list, net content, producer information, production date, and shelf life is to eliminate hidden risks in market transactions through compulsory disclosure of information. For instance, the requirement for ingredients to be listed in descending

order and the obligation to expand compound ingredients aim to reveal the actual material composition of food, preventing producers from gaining unfair competitive advantages by concealing low-cost or potentially risky raw materials. The labeling of production dates and shelf life directly protects the right to life and health, based on the perishable nature of food, and establishes temporal boundaries for product safety liability. From a legal perspective, these mandatory requirements constitute legitimate restrictions on corporate freedom of commercial expression, deriving their justification from the priority protection of public health interests. Each mandatory labeling item corresponds to specific regulatory objectives: traceability demands producer information, safety concerns dictate date and storage conditions, while fair trade principles require net content and specifications. Thus, mandatory labeling is not merely a technical specification but a statutory duty imposed by law upon producers and operators. Any omission or ambiguity constitutes a violation through omission.

2.3 Food Labeling Compliance Safeguards the Value of Consumer Right to Know

The consumer right to know forms the cornerstone of modern consumer protection legal systems, with food labels serving as the material vehicle for realizing this right in food consumption. Within highly industrialized food production chains, consumers cannot visually discern a product's intrinsic quality, nutritional value, or potential risks. Labels thus serve as the sole channel for authentic information connecting producers and consumers. Compliant labeling fundamentally represents producers fulfilling their duty to inform consumers. By translating specialized, obscure food science information into accessible, standardized labeling language, it empowers consumers to compare, evaluate, and select products ^[2]. If label information is false, misleading, or flawed, it directly leads consumers into erroneous perceptions, causing them to transact against their true intentions. This not only infringes upon consumers' right to know but further undermines their autonomy in choice and their right to fair transactions. Therefore, the strict legal regulation of labeling corrects market imbalances. By institutionalizing information provision, it ensures consumers exercise their rights in a transparent environment, upholding the substantive justice of consumer contracts.

3 Food Labeling Practices Confront Regulatory Enforcement Challenges

3.1 Legal Risks from Inaccurate Ingredient Lists and Nutritional Data

In food labeling compliance, verifying the accuracy of ingredient lists and nutritional facts presents the highest concentration of legal risks. Challenges in ingredient labeling primarily stem from the blurred boundaries between the carry-over principle for compound ingredients and the exemption of processing aids from declaration. When handling multi-tiered raw materials, many enterprises often fail to trace additive components in upstream ingredients accurately. This leads to unintentional omissions on final product labels, which courts frequently deem labeling defects or even substantive violations of the law. Simultaneously, inaccuracies in nutritional data are increasingly prominent. Some small and medium-sized enterprises, seeking to reduce costs, directly apply database values or data from similar products without actual testing. This practice overlooks the influence of raw material batch variations and processing techniques on nutrient retention rates, leading to declared values that deviate beyond permissible rounding intervals and error margins ^[3]. Such data falsification or distortion not only risks administrative penalties from random inspections but also exposes companies to significant financial losses and reputational crises.

3.2 Challenges in Compliance with Functional Claims and Promotional Language

With the explosive growth of the functional food market, claims and promotional language on food labels have become a major enforcement challenge. Current regulations strictly delineate the boundaries between ordinary foods, health foods, and pharmaceuticals, explicitly prohibiting ordinary foods from claiming health benefits or disease-treating effects. However, under market competition pressure, numerous companies engage in borderline marketing using suggestive language, homophones, or selectively quoted scientific literature. These claims often lack sufficient scientific evidence or deliberately confuse concepts like "no added" versus "free from," misleading consumers. For instance, labeling products as "no sucrose" while heavily adding fructose or artificial sweeteners may technically comply with specific terminology definitions, but it constitutes misleading the average consumer. Regulations impose strict conditions and standardized terminology for nutrition claims and functional claims. Any modifiers or exaggerated statements beyond the approved list are deemed false advertising. Companies' inability to balance marketing innovation with regulatory boundaries has led to widespread compliance issues.

3.3 Dilemma of Mandatory Allergen Labeling and Warning Statement Implementation

Despite the Codex Alimentarius Commission (CAC) and Western countries having long mandated allergen labeling, China's allergen labeling remains a recommended provision, rather than a mandatory one. This transitional regulatory status has led to significant discrepancies in implementation. Driven by liability concerns, some companies mechanically list all potential allergens, rendering warnings superficial and losing their precision. Others disregard entirely the risks of cross-contamination from shared production lines, omitting any warnings and posing serious health hazards to consumers with allergies. Furthermore, for mandatory warnings on products containing aspartame, irradiated foods, or genetically modified ingredients, companies often diminish font size and color contrast for aesthetic packaging design, failing to meet the statutory requirement for conspicuousness. This deviation reflects inadequate corporate understanding of labels' warning function—treating them as aesthetic designs rather than risk disclosures. This approach not only violates the life-first legislative spirit but also creates significant liability risks.

4 Standardized Management of Food Labeling and Regulatory Compliance Pathways

4.1 Pathways for Improving the Legal and Regulatory Framework for Food Labeling

The fundamental solution to labeling chaos lies in optimizing top-level institutional design and refining legal provisions. Current efforts should accelerate the revision of core standards to eliminate cross-conflicts and regulatory gaps. Legislation must further clarify the boundaries of discretion between labeling defects and food safety issues, establishing detailed benchmarks for administrative penalties on labeling violations to prevent disproportionate penalties for minor offenses and reduce opportunities for speculative claims. Regarding standards, allergen labeling should be upgraded from recommended provisions to mandatory requirements, aligning with international regulations to enhance food safety safeguards^[4]. Furthermore, specialized regulatory documents should be issued for emerging e-commerce sales models and digital labeling. These should establish the legal validity and display standards for electronic labels, permitting enterprises to extend non-mandatory information via QR codes. This approach resolves the tension between limited packaging space and the explosion of information. Building a logically rigorous, scientifically sound, and forward-looking regulatory and standards system is the legal foundation for guiding the industry toward standardization.

4.2 Establishing Enterprise-Wide Compliance Control Mechanisms for Food Labeling

Enterprises must abandon the misconception that label review is merely a final step in the packaging design process. Instead, they should establish compliance control mechanisms spanning the entire product lifecycle—from R&D and procurement through production to sales. During the R&D phase, regulatory departments should be involved early to assess formula compliance and pre-evaluate ingredient sources, ensuring the final product's legal standing. In the supply chain, establish rigorous supplier documentation review systems that require upstream providers to submit detailed specifications and test reports to ensure the authenticity of ingredient list information at its source. Internally, companies must establish cross-departmental labeling review committees where regulatory, R&D, quality control, and legal personnel conduct multi-layered verification of label content. This includes substantive reviews of nutritional data calculations and the scientific validity of functional claims. Implementing an information management system enables version control for labels and regulatory update alerts. Upon any regulatory change, immediately initiate risk assessments and replacement plans for existing packaging materials.

4.3 Strengthening Multi-Stakeholder Participation in Social Co-governance of Labeling

Standardized governance of food labeling cannot be fully achieved through administrative oversight alone. A collaborative governance model must be established, featuring government leadership, corporate self-regulation, and societal coordination. Regulatory authorities should transform their oversight approach by leveraging big data and artificial intelligence to develop intelligent monitoring platforms for identifying labeling violations, thereby enhancing the precision and efficiency of supervision. They should also regularly publish guidance through case studies. Industry associations should serve as bridges, developing group standards and industry labeling self-regulation codes that exceed national standards, while establishing industry blocklist systems and credit-based penalty mechanisms^[5]. Concurrently, extensive public education on food safety should be conducted to enhance consumers' ability to recognize and understand labels, empowering them to become effective forces in monitoring compliance. Third-party professional institutions should be encouraged to participate in label review and certification services, providing compliance support through market-based approaches. Establishing smooth complaint and reporting channels while protecting internal whistleblowers will foster a societal atmosphere of shared concern and oversight for food labeling, compelling enterprises

to elevate the standardization of their labeling practices.

5 Conclusion

Food labeling standards form the foundational component of technical standards in the food industry, serving as a systemic safeguard for consumer interests and market order. Through an examination of legal principles and an analysis of implementation barriers, this paper explores the structural tensions inherent in current compliance management. Addressing labeling chaos requires a more comprehensive approach than a single-dimensional one. Macro-level efforts must enhance top-level institutional frameworks to fill regulatory gaps. At the same time, micro-level initiatives should drive enterprises to establish end-to-end internal control mechanisms that transform the compliance ecosystem. Furthermore, mobilizing diverse societal forces to form a closed-loop supervision system is essential, shifting from unilateral regulation to collaborative governance.

Funding

Hainan Provincial Higher Education Teaching Reform Research Grant Project "Research on Talent Demand and Curriculum Reconstruction for Pharmaceutical Production Technology Majors Against the Background of Rapid Pharmaceutical Industry Development" (NO: Hnjg2024ZC-172)

About the Author

Xiangqin Yang, M.S., Lecturer, Research Areas: Medicine, Chemistry, Food Science.

References

- [1] Zheng Xuan, Ling Li, Pan Suhua, et al. Key Inspection Points for Labels of Imported Prepackaged Foods [J]. Chinese Journal of Food Hygiene, 2024, 36(02): 186-189.
- [2] Tian Ming, Feng Jun, Yin Shutao, et al. Recommendations for Improving China's Food Claim Management Based on International Experience [J]. Chinese Journal of Food Science, 2023, 23(11): 465-470.
- [3] Xu Lulin. Legal Requirements for Food Packaging Labels and Protection of Consumer Right to Know [J]. Shanghai Packaging, 2025, (5): 17-19.
- [4] Liang Hanyu. Evolution of Prepackaged Food Labeling Regulatory Systems and Analysis of Complaint Risks [J]. Food Safety Guide, 2025, (13): 165-168.
- [5] Chen Fang, Li Minyi, Gu Jiewen, et al. Analysis of Labeling Requirements for Prepackaged Food Exports to Republic of Korea [J]. China Food Safety, 2025, (03): 100-104.