

Lessons from US and EU: A Comparative Study of the Food Inspector System

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Abstract

The food inspector system characterized by specialization is the core content of food safety supervision. This article compares and analyzes the current food inspector system in China through the analysis of the system composition, characteristics and operating mechanism of the food inspector system in the United States and the European Union. In terms of the legal system, management mechanism, and technical specifications, it revolves around the problems and dilemmas faced by the frontline personnel of grassroots supervision in food safety inspections. The article attempts to propose a "triangular" structure and a professional food inspector system with Chinese characteristics.

Keywords

Food Inspector; Specialization; Food Safety.

1. Introduction

In recent years, China's food safety work has achieved certain results, but the food safety situation is still severe, and the inspector system is an important factor. The "Thirteenth Five-Year Plan for National Food Safety" clearly states that by 2020, a professional team of food inspectors will be basically established. However, due to institutional reforms and other reasons, the development of a team of professional food inspectors has been slow. Although the academic circles have discussed the food inspector system, they paid more attention to policy measures and suggestions, yet lacked in-depth discussion on the professional institution of food inspectors. Developed countries such as the United States and Europe have established a food inspector system earlier, and formed a professional food inspector team with professional qualifications, laying a foundation for the scientific and effective food safety supervision. Meanwhile they have accumulated a lot of practical experience in the legal system, personnel management and technical specifications. This article analyzes the system composition, characteristics and operating mechanism of the European and American food inspector systems, comparatively analyzes the current situation and existing problems of China's food inspector system, and learns from the mature experience of developed countries to provide resources for the construction and improvement of the Chinese inspector system.

2. The Connotation of the Specialization of Food Inspectors

Sociologist Carl Sanders (1933) conducted a systematic study on the issues of "professionalism" and "specialization". He believed that "professionalism" refers to a profession that requires specialized skills for a specific group of people-which requires special intelligence and abilities to complete. Its purpose is to provide specialized services to the society. And "specialization" is a process of a profession striving to become a professional and continuous improvement. It has two basic meanings. One is to continuously improve professional knowledge and skills in practice; the other is to be a profession and gain social and legal status. Recognized professional

status. Bryan and Mullendore (2000) conducted a research on professional standards, and proposed the "four haves" standards for professional occupations, namely, to have compensation, social status, autonomy (professional authority), and social service, which clarified the profession. The application of practical skills, problem-solving ability, and good professional ethics of professionalization have laid the foundation for modern professional theory. In general, specialization refers to the process of continuous improvement in professional knowledge, practical skills and professional ethics in a certain industry in society, reflecting the process by which ordinary professional groups become a profession and obtain social and legal recognition.

According to Sanders' theory, the professionalization of food inspectors refers to the process of food safety supervision becoming a professional profession. Through targeted food-related professional knowledge training for individuals and continuous improvement of professional capabilities, they have passed national vocational qualification certification, becoming an inspector with certain theoretical knowledge and practical skills in food industry, competent in food safety supervision duties. The essence of the professionalization of food inspectors is to abandon the empirical supervision work model and form a food safety supervision model based on food-related majors and the concept of professional inspection. With the continuous requirements for food safety, the professional level and professional status of food inspectors have become increasingly prominent.

As the intensiveness of edible agricultural products and aquaculture continues to increase, the scale and automation of the food processing industry continue to deepen and the food supply chain continues to extend. However, the potential safety hazards are also multiplied. With the rapid development of science and technology and the introduction of high technology, the division of labor in the processing industry is becoming more and more refined. The application of new materials, new resources, and new technologies has increased food safety risks; the principle of prevention-oriented food safety supervision requires early detection of food safety hazards and timely warnings. Traditional food supervisors are urgent need to professionalize.

3. Analysis of European and American Food Inspector System

3.1. Features of the US Food Inspector System

The United States is the first country in the world to implement a food inspector system. In the process of promoting food safety government control, it has gradually improved the professionalization of food inspection and the professional system of inspectors through legal systems, management mechanisms, and technical specifications. Safety has laid a solid foundation.

3.1.1. System of Laws and Regulations

In 1906, the United States promulgated the Pure Food and Drug Act, which gave the Ministry of Agriculture the responsibility of food safety supervision and provided a legal basis for food safety inspections; the Federal Food and Drug Administration was established in 1930 and professional inspectors were set up professional standards, classified management according to the professional knowledge and skills of food inspection; The Federal Food, Drug, and Cosmetics Act was promulgated in 1958, which clearly stipulated the responsibilities and basic powers of food inspectors, as well as inspection technical standards and procedures. Authorized inspectors can enter any area of the company, inspect the company, and take legal measures for the problems found. The FDA Food Safety Modernization Act promulgated in 2011 further stipulates that all aspects of food processing must be inspected by inspectors, clarifying the professional qualifications of employees and stipulating that inspectors must undergo training and obtain unified certification before starting their jobs. The FDA has formulated a set

of regulations for inspector training, management, and on-site inspection, which has greatly improved the food inspector system.

3.1.2. Rigorous Management Mechanism

FDA has the Office of Regulatory Affairs (ORA), which is the supervisory department of inspectors. The inspector’s occupation code is GS-0696 (GS being Government Service). ORA is relatively independent and does not overlap with other FDA departments. In 2011, ORA had 4,400 full-time inspectors (an additional 2,000 are planned for the next 5 years), responsible for all FDA controls the inspection of products (including food, drugs, cosmetics, medical devices, etc., but excluding meat products, which are supervised by the United States Department of Agriculture). In addition, there are an equal number of food chemists, epidemiologists, and others food scientists, as part-time inspectors, assist in carrying out on-site inspections. The FDA has 5 regional offices, 20 local offices, 150 permanent checkpoints/border checkpoints, and 13 directly affiliated laboratories across the country. The law guarantees the right of inspectors to perform their duties independently, and at the same time implements a strict management system, implementing hierarchical management according to different duties and tasks, as shown in Table 1 below. it presents inspector duties and tasks at different levels.

Table 1. Inspector duties and tasks at different levels

Some inspector’s occupation code	Inspector duties and tasks
GS-5	Newly hired inspectors competent for inspection work carry out inspections under the guidance of superiors
GS-7	Work under the guidance of superiors in the initial stage. After the expiration of the period, the inspection can be carried out independently, and the guards, labels and packaging of the enterprise can be checked
GS-9	Perform inspection duties, complete sampling, collect evidence, put forward legal disposal opinions, and write inspection reports
GS-11	Inspect companies with more complex production processes, conduct investigations into serious violations of laws or public safety incidents, and undertake the training of lower-level inspectors
GS-12	Serve as the inspection team leader, draw up inspection plans, undertake inspections of enterprises using new technologies that need to explore new inspection methods, communicate with state and local governments, and interpret regulations
GS-13	Serve as the person in charge of the prosecutor's agency in the jurisdiction, responsible for personnel management and assessment, reviewing inspection reports, judging whether the lower-level legal disposal measures are appropriate, and making judicial recommendations

The law has clear regulations on the qualification, employment and annual assessment of inspectors.

Qualifications. Applicants must have a corresponding professional background in biology, chemistry, etc., and at the same time have a certain knowledge of food safety laws, and strong communication skills;

Recruitment. The state organizes a unified examination where each applicant is assessed one by one to ensure the quality of inspectors;

Assessment and accountability. the FDA mainly monitors the performance of inspectors and evaluates their actual performance through three methods: regular on-site review of inspectors' inspections and disposal results, review of the inspection report of the inspector and the inspection report of the audit sample. Meanwhile the law stipulates strict "accountability" and punishment clauses;

In order to avoid the phenomenon of favoritism and fraud when inspectors work in one place for a long time, the law stipulates that inspectors must be regular in rotation. The inspection report written by the inspector shall be kept for at least five years for future reference.

3.1.3. Professional Inspection Technical Specifications

Based on the "Federal Food, Drug, and Cosmetic Act" and related laws and regulations, the FDA formulates unified on-site inspection standards, procedures, and disposal specifications to ensure the quality, consistency and efficiency of inspections. At the same time, these technical specifications are regularly updated and released simultaneously. Specialized inspection technical specifications make food safety inspection scientific and standardized, and avoid randomness. The technical specifications mainly include:

On-site inspection technical guidelines. The "Food Inspection Instruction Manual" clearly stipulates the technical guidelines for on-site inspection, including: inspection (official identification of compliance), investigation (warning, punishment, closure of the enterprise until criminal proceedings), sampling (testing of food quality and safety performance), seizure (a legal act that seriously threatens the health of humans and animals is found), rectification (administrative measures that are found to have hidden safety hazards or illegal acts), and litigation (legal assistance for companies that have objections to the inspection results and disposal).

Inspection technique guidelines. The FDA has formulated more than 500 pages of food inspection guidelines, including "Compliance Project Guidelines", "Compliance Policy Analysis Guidelines", etc. These inspection guidelines are detailed, specific, and creative, while ensuring that the company and the inspector have symmetrical information.

Food safety risk control system. In 1995, the FDA formulated the world's first management system for food production and processing risk control, "Hazard Analysis and Critical Control Point" (HACCP certification), which has been implemented in almost all food companies, including all other exports to the United States. National food production enterprises. HACCP certification has become a technical criterion implemented by food companies all over the world.

3.2. Features of the EU Food Inspector System

3.2.1. A Unified System of Laws and Regulations

After experiencing major food safety incidents such as mad cow disease, the European Union has established the most stringent food safety legal system and an inspector management system based on risk management principles. The "Green Paper on Food Safety" was released in 1997, laying the basic legal framework for food safety, and the "White Paper on Food Safety" was released in 2000, which established the basis for EU food legislation and put forward the concept of supervision throughout the entire process from field to table; released in 2002 (EC) Regulation No. 178/2002 (referred to as the "Basic Law" of EU Food Safety); Regulations (EC) No. 854/2004 and No. 882/2004 were issued in 2004 to establish a unified food safety regulation at the EU level and establish the four principles of risk assessment, protection of consumer rights, early warning of hidden dangers, and transparency of information, which clearly stipulate the qualifications, responsibilities, tasks, and inspection frequency of food inspectors. On the basis of EU regulations, each member country supplements and refines

relevant content, which together constitute the legal framework of the food inspector system. For example, the German "Food and Feed Safety Act" refines and supplements EU regulations. Europe and the United States learn from each other's experience. The laws and regulations of their food inspector systems have many similarities, but the two have their own characteristics. See Table 2.

Table 2. Laws and regulations of the European and American inspector system

	Laws and regulations	Main Content
US	Federal Food, Drug and Cosmetic Act	Provides FDA's legal handling of company inspections, investigations, sampling, and violations
	Food Safety Modernization Act	Stipulate that all aspects of food processing must be supervised and inspected by inspectors; the duties and tasks of inspectors; professional qualifications; training and re-education
	Food Inspector Instruction Manual Compliance Program Guide Compliance Policy Analysis Guide	The three manuals constitute the technical specifications for inspectors, which stipulate the process and content of on-site inspections and the compliance requirements for enterprises
EU	EC178/2002 Food Basic Law	Sets the general principles and overall requirements of food safety
	EC882/2004 Inspector Inspection Regulations	Official supervision and inspection regulations, basic risk prevention and control, procedures and content of enterprise inspections
	EC854/2004 Specific food inspection regulations	Specifies the on-site inspection requirements for edible animal-derived products

3.2.2. Strict Management Mechanism

The first is the qualification requirements. The European Union stipulates that inspectors must have more than four years of work experience in the food industry (familiar with food production management, technology or testing), as well as strong communication skills. They must undergo professional training and pass official qualification certification before entering the job. The second is training and continuing education. Inspectors from each member country must regularly participate in training and continuing education on food safety theoretical knowledge, professional practice and inspection skills every year to improve inspectors' professional capabilities and continuously adapt to the latest regulatory situation. Training or continuing after the education is over, they must accept professional knowledge assessment (see Table 3). The third is to formulate uniform and detailed on-site inspection specifications for inspectors, which not only provides inspection basis for inspectors, but also restricts inspection work and inspectors' behavior. Europe and the United States attach great importance to the professional training of food inspectors, and all have systematic and detailed training and continuing education mechanisms.

3.2.3. Improved Technical Specifications

The EU has formulated unified food safety supervision principles and inspection technical specifications to ensure the overall food safety level of the EU. As the EU member states have independent sovereignty and legal systems, food safety inspections include two levels. One is the inspection of food companies by inspectors, which mainly check the "compliance" of the company's compliance with regulatory requirements. When an enterprise is suspected of

breaking the law, the inspector can take corresponding measures (warning, punishment, criminal prosecution, etc.) until the temporary closure of the enterprise (the official closure of the enterprise must be decided by the court). The second is the European Food Safety Agency personnel appointed by the European Commission to supervise and inspect the implementation of food regulations in each member state. If a member state is found to have not fulfilled relevant obligations, it will be notified by an official letter of rectification or punishment, but the final decision will be determined by the European Court of Justice.

4. Features and Deficiencies of China's Food Inspector System

4.1. The System of Laws and Regulations

In terms of the legislative concept, China is the pilot program first, while Europe and the United States are the legislative first. The Food Safety Law revised in 2015 clearly requires the establishment of a food safety inspector system, but the relevant laws and regulations have not yet been promulgated so far. China adopts the "pilot first" legislative paradigm. The advantage is that it can summarize the problems that have occurred in the early trials, provide mature experience for later formal legislation, and improve the quality of legislation. The disadvantage is that the trial period is often too long, causing long-term trials and failures. At present, the food inspector system is only seen in the pilot "regulations or regulations" issued by individual provinces and cities. For example, Anhui, Yunnan, Sichuan, Heilongjiang Province and Nanjing have successively formulated relevant "Food Inspector Management Measures (Regulations)". Some regulations have been made on the responsibilities, powers and obligations of the government, but none of them have completed the provincial legislative procedures. It is still the policy of the government department. In addition, the supporting regulations, such as personnel qualifications, recruitment, training, and assessment, are almost blank.

4.2. Inspector System

The food inspector system mainly includes three aspects: inspector body, management mechanism and professional ability.

Main body composition. The personnel responsible for food inspectors in China are scattered in three different departments. One is the civil servants of the market supervision bureaus at the city and county levels who are engaged in food safety supervision, whose main responsibility is the daily inspection of food companies; the other is the administrative law enforcement inspectors, whose responsibilities are positioned. It is law enforcement inspection, counterfeiting and handling of cases, and generally does not undertake daily inspections of enterprises; third is the technical personnel of inspection agencies, which are mainly responsible for technical inspections of food quality, and participate in "administrative license review" as "technical experts" when necessary. At present, there is no clear legal positioning and professional technical guidelines for "food inspectors" in China, or even a unified legal concept of "food inspectors". The sum of the duties and powers of the above three types of personnel is equivalent to that of European and American inspectors, but European and American inspectors are all government employees with national professional qualifications. They are both supervisors and law enforcement personnel and technical experts. They are professional supervisors of the "one specialization and multiple abilities" type, and they are responsible for almost all daily supervision, law enforcement inspections and permits of food safety.

Management mechanism. At present, China has not established a unified inspector management mechanism. Due to the different departments and identities of the three types of personnel involved in food inspections, the management requirements and methods are different, and they are currently classified and managed according to their units, such as those

who undertake daily food inspections. The personnel of the Market Supervision Bureau shall conduct management and performance evaluation in accordance with the current civil servant regulations. The inspectors who are responsible for law enforcement inspections shall be subject to management and evaluation in accordance with the regulations of the institutions. Experts and technical personnel who are responsible for food licensing reviews shall be evaluated in accordance with the technical requirements. Institutional regulations conduct management assessments. Europe and the United States have formed a relatively mature mechanism for the management of food inspectors, which implements management and assessment according to law, and the results of the annual comprehensive evaluation serve as an important basis for their competence or promotion.

Qualifications, training and capacity enhancement. At present, general administrative personnel at the basic level are responsible for the inspection work, and basically do not have the professional knowledge of food safety inspection. In recent years, the newly hired food inspectors only have academic requirements and have not assessed the professional knowledge and ability. Therefore, most of them do not have the level of specialization in food inspection. In general, the current professional quality of the inspector team in China is not high, and the construction of the professional team is slow, resulting in low supervision efficiency and poor overall effect, which seriously affects the actual effect of food safety supervision.

4.3. Technical Specifications

As China has not formed a unified national on-site inspection technical specifications and determination standards, there are regional differences in the determination of food safety hazards and risks. The lack of rigorous and rigid regulations in the on-site inspection procedures, and the fact that there are many principled regulations and poor specific operability in the content of the inspection, resulting in greater randomness in the on-site inspection process, unclear inspection responsibilities, and inadequate measures, etc. Disadvantages: In the on-site inspection, there are problems such as unclear regulations and large flexibility in the handling and punishment of illegal phenomena, and the results of the inspection may show the phenomenon of "favor cases" that vary from person to person. Europe and the United States have designed a set of technical specifications and procedures with strong operability and detailed and clear content for on-site inspections. There are clear, specific and strong operability regulations on the investigation, punishment, and disposal of illegal activities, which effectively guarantees the uniformity of inspectors.

5. Constructing the "Triangular" Structure and Implementation of China's Specialized Food Inspector System

Food safety laws and regulations require that the most stringent standards, the most stringent supervision, the most severe penalties, and the most serious accountability should be used to accelerate the establishment of a scientific and complete food safety governance system. Strengthen governance according to law, and accelerate the establishment of China's inspector system with a professional approach. The inspection relationship among the law, professional approach and technical specification is shown in Fig 1.

5.1. Speed up the Construction of the Legal System

A unified and sound food inspection legal system is an important cornerstone and fundamental guarantee of the food inspector system. Accelerate the top-level design at the national level. Based on the current pilot experience in some provinces and cities, learn from the European and American legislation to formulate the "National Food Inspector Management Regulations" as soon as possible to clarify the legal status of the inspector profession. Improve the legal system related to food inspectors, and establish a food inspector system in China as soon as

possible based on professional concepts and legal principles. Improve the food safety information disclosure system, clarify the scope, channels, procedures and time limit of information disclosure, and publicly release food safety inspection information in accordance with the law.

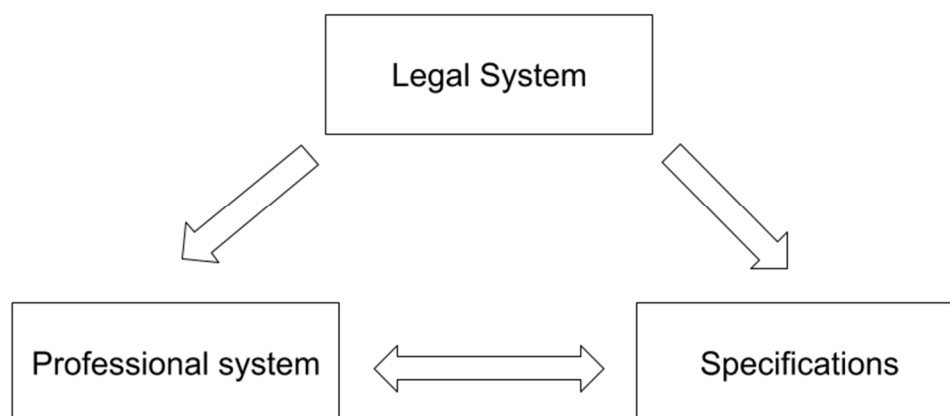


Figure 1. "Triangular" structure of food inspector system

5.2. Establish an Inspector Management System with a Professional Approach

A team of inspectors with high professional quality is the core of the inspector system. It is necessary to speed up the formulation of inspectors' qualifications, recruitment, training, assessment, promotion and other regulations, and establish an inspector management mechanism that meets the needs of China's food safety governance. First, formulate standards for the professionalization of inspectors, formulate China's food inspector qualifications and employment standards, and clarify the technical and professional identity of food inspectors. Secondly, in view of the current situation of inspectors in our country, a group of supervisors with specific food expertise and inspection experience can be selected from among supervisors, and they will gradually transition to full-time inspectors through professional training; existing technical personnel with food license review qualifications. In the process, select and deploy a group of professional and technical personnel with food-related knowledge; establish a database of inspection experts to attract more senior technical personnel from food technology institutions, scientific research institutes, and universities as part-time inspectors. Third, formulate professional management methods for inspectors, implement hierarchical management of inspectors, clarify the duties, powers, and remuneration of inspectors, and implement a nationally unified food inspector performance appraisal, reward, punishment, and accountability mechanism. Fourth, establish professional training, continuing education and assessment mechanisms to improve the theoretical level and practical ability of inspectors.

5.3. Speed up the Formulation of Inspection Technical Specifications

Scientific and professional inspection technical specifications are the technical cornerstone of the food inspector system. Drawing lessons from the "Food Inspection Guidelines" of the European Union, especially the FDA, and combining with China's actual conditions, speed up the formulation of a nationally unified "Food Inspection Guidelines." Based on the principles of professionalism, rigor and detail, pay attention to the standardization and operability of on-site inspections; clarify the main tasks, inspection contents, procedures, requirements and problem handling methods of on-site inspections, guide inspectors to carry out inspections in a

standardized manner, and be able to follow On-site inspections, keenly discovering the hidden safety hazards of the enterprise, put forward on-site inspection and handling opinions in accordance with the law, and at the same time put forward professional quality management improvement suggestions to the enterprise.

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