

Research on Legal Regulation of Genetically Modified Food

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Abstract: Genetically modified food, as an important achievement in the development of biotechnology, plays the same dual role in human beings as other scientific and technological achievements. Due to the particularity of genetically modified food compared with ordinary food, the possible issues must be regulated by law effectively. Developed countries such as Europe, America, Japan, etc., have set up the examination and approval system, isolation system and labeling system for testing and listing. In the supervision of genetically modified food, America has also established the legal principle of non discrimination. Combined with the current legal regulation situation of genetically modified food in China, measures should be taken to legislate it formally, promulgate practical implementation regulations, establish industry access system, strengthen investment in law enforcement and adhere to the legal principle of non-discrimination. This can ensure that the legal regulation of genetically modified food in China can not only effectively prevent the special safety risks produced by genetically modified food, but also not hinder the normal development of the genetically modified industry.

1. Introduction

In recent years, the issue of genetically modified food has attracted increasing attention. From the golden arowana genetically modified soybean oil event in 2010, the golden rice event in 2012, to the signing of "the national bioengineering food disclosure standard bill" by Obama in 2016, the safety of genetically modified food has been put in front of the people all over the world with the development of history and the progress of science and technology. People pay more attention to the distrust of genetically modified food by consumers [1-2]. There is no definite conclusion about the safety of genetically modified food, especially its long-term safety. The existence of genetically modified food safety risks, the adverse effects of planting genetically modified plants on the environment, and the serious lack of relevant legislation have led to increasingly concerns and risk problems. Therefore, we should not only strengthen the safety research on genetically modified food, but also strengthen the legal regulation of relevant legislation.

2. Concept and Development of Genetically Modified Food

Genetically modified food, also known as genetically modified food, refers to the food produced by animals, plants, microorganisms and their derivatives containing exogenous genes obtained by genetically modified technology. It is a milestone in the field of biological research since 20 years ago. The production of this high-level scientific and technological achievements is known as the "second green revolution".

At present, the planting area of genetically modified crops is growing rapidly. The International Service for the Acquisition of Agri-Biotech Applications (ISAAA) recently released a report that "the planting area of global genetically modified crops has increased by more than 100 times in the past 18 years, reaching 175 million hectares in 2013". "Of the 27 genetically modified crop growing countries in the world, 19 are developing countries and 8 are developed countries". With regard to planting area, China ranks sixth, and the top five are the United States, Brazil, Argentina, India and Canada.

It can be seen from the above data that China, as a developing country with a relatively late start in the field of genetically modified crops, has made great progress in the cultivation of genetically

modified crops. It is undeniable that China has now become a major producer and marketer of genetically modified food. Based on China's current national conditions, such as large population, limited cultivated land area, tight food supply, etc., the Chinese government has increased the support for the research and development of genetically modified technology. Correspondingly, genetically modified food has also entered the Chinese market more widely [3]. However, the fierce "offensive" launched by genetically modified food to the table makes people worried. According to the 2018 annual survey, nearly 80% of the respondents do not support transgene, which makes China very constrained in the face of this new technology.

3. Comparative Analysis on Legal Regulation of Genetically Modified Food

Based on the above issues of genetically modified food, all major consumer countries of genetically modified food, mainly developed countries in the European Union, have taken a series of legal regulation measures for genetically modified food, and the specific situation is shown in Table 1.

Table 1. Legal regulation of genetically modified food in European Union countries

Time	Name	Main content
1990	"Directive 90/219/EEC on the use of blocking by genetically modified microorganisms"	Establishing regulations for the closed use of genetically modified microorganisms and ensuring the safety of genetic engineering
1990	"Directive 90/219/EEC on the intentional release of genetically modified organisms to the environment"	Stipulating the procedures to be followed for genetically modified organisms to enter the environment and put on the market
1997	"Regulations on new food and new food ingredients"	Determining the approval system and labeling system for genetically modified food
1998	"Management law No. 1139/98"	Adding label guide
2000	"Regulations on identification of exogenous pollutants"	Setting strict label requirements system
2000	"Regulations on the marking of genetically modified additives and flavorings"	Expanding the application of mandatory labels
2003	"Regulations on genetically modified food and feed"	Stipulating the basic system of genetically modified food management
2003	"Regulations on traceability and labelling of genetically modified organisms, traceability and labelling of finished products made from genetically modified organisms"	Stipulating tracking system and labeling system of genetically modified food

Due to the strategic significance of genetically modified food to improve national economy and people's livelihood, especially to ensure the total safety of food, China has a basically positive attitude towards genetically modified food in law. On the one hand, it implements the principle of non discrimination law. On the other hand, it also formulates the regulatory legal system for the food safety issues involved.

The specific legal systems of China's current regulations on genetically modified food mainly include "the regulations on the safety management of agricultural genetically modified organisms" promulgated in 2001 and "the food safety law" promulgated in 2009. Among them, the regulations in 2001 established the corresponding management system for the safety of agricultural genetically modified organisms. It includes grading management and evaluation system, test approval system, production, processing and operation license system, labeling system, import approval system, export certification system, and advertising approval system. Basically, a set of safety and approval system, corresponding isolation system and labeling system for genetically modified food test, has been established. However, "the food safety law" in 2009 only introduced the genetically modified food in Article 101, without special provisions on the regulation of genetically modified food. To some extent, it reflects the non-discrimination principle adopted by China in the legal aspect of genetically modified food [4]. To sum up, there are still many deficiencies in the legislation and law enforcement of genetically modified food safety in China, and the legal regulation of genetically

modified food safety needs to be further strengthened in the future.

4. Countermeasures on Legal Regulation of Genetically Modified Food in China

4.1. Incorporating genetically modified food regulation into the scope of formal legislation

As mentioned above, there are no formal legal provisions on the regulation of genetically modified food in China. At present, the main legal basis is "the regulations on the safety management of agricultural genetically modified organisms". The legislative level is relatively low, which cannot adapt to the growing importance of genetically modified food safety supervision. Therefore, it is necessary to add special legal provisions on the regulation of genetically modified food in "the food safety law", and clarify the corresponding genetically modified food marking system, the limited isolation system, the examination and approval system for testing and listing, etc. With the growing importance of genetically modified food safety, special "genetically modified organisms safety law" can be formulated when conditions permit.

4.2. Promulgating supporting regulations on genetically modified food safety supervision with strong operability

At present, "the regulations on the safety management of agricultural genetically modified organisms" are unclear in many specific regulations, which leads to its poor operability and offers a space for the corresponding production and sales units to evade the law. For example, there is no clear regulation on the specific location of the genetically modified ingredients. As a result, edible oil producers put their genetically modified labels in locations that are difficult for ordinary consumers to detect. The specific punishment measures for the violation of the corresponding provisions are too abstract.

4.3. Establishing a strict access system for the genetically modified food industry

The research, production and sale of genetically modified food are all related to the safety of genetically modified food, and thus enterprises must take the corresponding responsibility for the safety of genetically modified food. However, many units without genetically modified food safety awareness and conditions enter the research, production and marketing of genetically modified food due to the lack of such a system. This not only increases the risk of genetically modified food safety accidents, but also greatly increases the difficulty of regulation.

4.4. Increasing the input of publicity, education and supervision in law enforcement to ensure strict law enforcement

There are some issues in the legal regulation of genetically modified food in China, such as low level of legislation, low maneuverability, etc. However, the basic safety risk prevention system is relatively complete. In recent years, some influential genetically modified safety events, such as "golden rice", illegal spread of genetically modified rice, etc., are related to the negligence or even connivance of law enforcement personnel. Therefore, it is necessary to strengthen the corresponding publicity, education and supervision of the corresponding law enforcement agencies and personnel, so that the corresponding laws can be truly implemented.

4.5. Firmly implementing the legal principle of non discrimination

There is a special uncertainty in the safety of genetically modified food, and this uncertainty, guided by the media and relevant people, makes the general public worry about the safety of genetically modified food. Some have even suggested that the research and production of genetically modified food should be temporarily or permanently terminated in the form of laws to put an end to this uncertainty. However, any scientific and technological progress has two sides, and what people should do is to seek advantages and avoid disadvantages as far as possible [5]. Therefore, the special provisions on the legal regulation of genetically modified food can only be aimed at preventing the possible special safety problems, and should not be extended to other aspects. The legal principle of non discrimination should be firmly implemented to prevent the

obstacles to the scientific and technological development of artificial genetically modified food.

5. Summary

The topic of genetically modified food is debated constantly, and remains an open question until now. However, such uncertainty does not mean that we are at a loss for the safety of genetically modified food. Effective legal regulation measures can reduce the potential risks of genetically modified food to ensure the quality of genetically modified food. China is the sixth largest genetically modified crop planting country in the world. Therefore, it is more important to strengthen the monitoring of genetically modified food, keep up with the trend, and timely modify, supplement and adjust the relevant domestic regulatory system. Also, it is necessary to establish a genetically modified food regulatory system similar to that in developed countries such as Europe, America, Japan, etc., and strengthen law enforcement management to implement the corresponding legal regulation.

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