

## Research Article

### The Philosophical Consideration about Food Additives

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**Abstract:** This study mainly analyzes the essential features of food additives technology from the angle of philosophy, explaining the essential characteristics of food additives technology. As for the attitude towards the application of food additives, it is influenced by the public's gender, age, educational level, occupation and monthly expenditure for buying non-staple food and other variables, thus, the attitude towards food additives and green food, as well as the attitude towards using artificial synthetic pigment, public attitude towards food additives that are in accordance with national standards and people's health and safety attitude, as well as the attitude towards food additives and food development is quite dissimilar, which showed a certain difference.

**Keywords:** Food additives, public attitude, philosophy

#### INTRODUCTION

Food is the basic living need for people. With the continuous improvement of living standard, people begin to pay attention to the problem of food safety and hygiene, at the same time, the attention to health and nutrition knowledge has been improved (Gary and Marc, 2009). Now, people enhance their health consciousness and the convenient foods are very popular, all of these made people begin to pay attention to the food additives that had close relationship with the daily life.

Food additives as important indispensable material in food industry, the history of being proposed and being understood was not so long, the history of food additives to form industry was not too long. But it was a long period of time for people to actually use food additives with long history. Food additive plays an irreplaceable role in the food, all kinds of food additives in food can give people more senses and qualities, but at the same time, it also made consumers be concerned about it. Especially, in the recent series of food safety incidents, such as the Sudan Red event, the poisonous rice event, sodium formaldehyde sulfoxylate incident, which seemed that, had a certain relationship with food additives. People are beginning to pay attention to the health and safety problem that is related to food additives, for example, whether the food additives will destroy the nutrients in food? Whether the food additives had poisonous side effect? The problems are brought to the attention of the public, such as whether the application of food additives was safe or not, the labeling of food additives and so on.

The safety of food additives is mainly reflected in two aspects. One aspect is that the technology of some food additives is not mature. So far, including China,

the whole world has done a lot of work on the safety of food additives. Du Rongmao pointed out that the ingredients of some food additive were poisonous, such as nitrite, benzoyl peroxide. This kind of food additives is considered toxic because of its composition, which is harmful to human health, it can cause distortion, mutagenic and carcinogenic. Foreign scholar Branen also proposed that the effect of transgenic technology on the safety of food additives.

#### MATERIALS AND METHODS

**The feature of "being manufactured" in food additives by transgenic technology:** From the study about the history of the birth and development of transgenic technology, we found that it was born with molecular biology research made by Herbert Wayne Poil, gene engineering itself had no purpose, it was an inevitable product of the study of molecular biology when it developed to a certain stage, which was a doomed result of the historical development. From the view of philosophy, it is thought that the development of anything is with the inevitable trend of rising, with the doomed trend, the transgenic technology is doomed to be born.

At present, the result of the molecular biology research are convincing, they think that the ultimate genetic material of life is DNA, genetic information is arranged according to a certain rule, with the form of base sequence stored in genetic vivo (Macer, 1994). The gene is passed from parent to offspring, which can determine sequence of the base sequence and the composition of amino acid, while the composition of amino acid can directly determine the characteristics of organisms. If we can clearly understand the genetic material in the scientific research, then with the help of

a certain biological technology, to realize the transformation of genes in different organisms is very easy, which is decided by the genetic feature of the organism.

It is fully embodied and carried out in the transgenic technology that the experts and scholars should separate the purpose gene from the first host, use molecular scalpel to have proper segmentation between gene and carrier, use the connectivity enzyme to connect the purpose gene with the carrier effectively, transfer the transgenic technology to the new host better, use the technical means to introduce the exogenous genetic material to the cells of the new host, ultimately produce the transgenic technology as people expected, thus, the genetic material can be replicated and recombined in the second host.

Due to the development of transgenic technology, the transgenic technology has been applied more and more widely in the field of food, which resulted in a genetically modified food. Now, using the gene engineering technology to improve the production of enzyme produced by the strain has been applied to the field of food additives. Moreover, some transgenic components can also become a kind of special food additives and put into use, such as the enzyme resistant gene coding protein. But because of the reasons and constraints, the safety evaluation for the transgenic food as well as its products is mainly used the "substantial equivalence" principle, namely, if a new food or food component is substantially equivalent, in terms of safety, they can be treated as the same. But the "substantial equivalence" principle has its limitation, therefore, more comprehensive, more safety and more scientific evaluation methods should be further improved. In our country, there are clear provisions on genetically modified food: once food products (including raw and processed food) contain genetically modified organisms and the expressing products, it should be labeled with "genetically modified food", or "genetically modified food as the raw material" or some other words. If genetically modified food is from the potential allergenic food, it should be marked "this product is transferred genes in the food, please pay attention to food allergy". Although these measures in some extent can regulate the market of genetically modified food, it also exacerbated the consumers fear with the genetically modified food in some degree; meanwhile, it also increased the distrust of the consumers to the safety of food additives.

From the view of philosophical perspective, the appearance from the molecular genetics to transgenic technology is more about the transform from the description of phenomenon to its essence, compared with the theory of Mendel's cross breeding in the traditional industrial society, it is not a tool in the traditional sense, which needs the help of specific functional material, restriction endonuclease and ligase, etc. Specific operation on the gene, which is not just for

the organism itself, but more for the biological internal refinement, through a series of connection, breaking the original reproductive barrier, thus, the transgenic technology as a tool is more diverse and more complicated, its objects are also more detailed, which is full of complexity and profundity.

## RESULTS AND DISCUSSION

**Analysis and survey about the public cognition and attitude towards food additives:** Food is always purchased and consumed by the public, food additives played an irreplaceable role as an important part of food (Dong, 2011). The public's attitude will become the key factor to decide whether to accept or reject the food additives, which can have great influence on the manufacturers and even the entire food industry and food additives industry through their purchasing behavior. Therefore, whether the public can have the necessary knowledge on food additives and have a rational and scientific attitude to it, is not only related to the healthy development of the food industry, but also is related to the public interests, which is also the researching motive and purpose. So, what's degree that the public can understand the food additives? And what kind of attitude adopted to the food additives? These problems are not only related to the interests of the public, but also are related to the future development of the food additives and food additives industry. In order to answer the above questions, on June, 2014, we conducted a survey to Wuhan residents about the cognition and attitude towards food additives. By collecting the first-hand data, we analyzed the public's cognition and attitude towards food additives, which can provide the reference for the development and application of food additives.

**The general public awareness to food additives:** At present, the kind of food additives in China has 23 types, about 1700 varieties, commonly used is about 600~1000 varieties, with the development of food additives' science and technology, the type of food additives is gradually increased. In the face of a variety of food additives, how much the public can understand the type of food additives as well as the specific name of food additives? It can be illustrated in Table 1.

In Table 1, we listed five types of food additives that are common used in daily life, which are preservatives, edible pigment, edible spices, flavoring agent and nutrition fortifier. The result of the survey showed that the public cognition on the five types of food additives is not the same. The rate of public cognition to edible pigment and preservatives is 85.2 and 88.4%, which is very high; the cognitive rate to edible spice reached 56.1%; while the rate of the public cognition to the flavoring agent and nutrition fortifier were 22.7 and 10.8%.

From the table, we know that the people with different level of education have different views on the

Table 1: The situation that the public can understand the type of food additives (people, %)

Item	Preservative	Edible pigment	Edible spices	Flavoring agent	Nutrition fortifier
The number of people	237	246	156	63	30
Proportion	85.2	88.4	56.1	22.7	10.8

Table 2: Public attitude to food additives obeyed by the national standard and people's health safety awareness (people, %)

Item	Male		Female		Total	
	The number of people	Proportion	The number of people	Proportion	The number of people	Proportion
Agree	59	44.4	81	55.9	140	50.30
Comparatively agree	54	40.6	57	39.3	111	40.00
Don't agree	20	15.0	7	4.80	27.00	9.700
Total	133	47.8	145	52.2	278.0	100.0

things, because of the different level and structure of knowledge, the higher the degree that people have, the more accurate judgment that people made on food additives and green food (Marc, 2005).

**Public attitude to food additives obeyed by the national standard and people's health safety awareness:**

The use of food additives have national standard, the use of food additives must be in accordance with the standard requirements of Hygienic Standards for the use of food additives (GB2760-1996) and Hygienic Standards for the use of food nutrition fortifier (GB14880-1994). The amount of the food additives as well as the maximum range must be used according to the above two national standards. Our question is "If the business is in strict accordance with the national standard marked with the use of food additives, can it guarantee the safety of food on human health?" The statistical results are shown in Table 2.

**CONCLUSION**

In general, the public attitude towards food additives is not optimistic. Most of people think that the disadvantages of food additives are more than its

advantages, only a few people think that the advantages of food additives are more than its disadvantages. Considering the situation that people are lack of understanding to food additives and they may be unclear to understand its risks, which added fear to food additives and affected people to measure the pros and cons of food additives. There are a majority of people who support the idea that it is necessary to mark the detailed annotation to food additives, only in this way can it help the public to choose the food, meanwhile, the public can have a better right to know and safeguard the right to choose by their own decision.

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