

# Application of HACCP to expeller pressed oil

expeller pressed oil is directly consumed by people, and it is also a raw material for a variety of foods. Its importance in people's daily life is obvious. Its safety is a major issue related to people's health and national economy and people's livelihood. People pay more attention to food safety. Today, once a safety problem occurs in a expeller pressed oil company's products, it will bring significant losses to the company, which has become a key factor affecting the competitiveness of the oil industry [1-2].

The application of HACCP in the food industry has experienced the development of the past few years.

As a scientific, efficient, simple, reasonable and professional food safety management system, HACCP has been applied in China's oil industry. However, for a variety of reasons, most of the HACCP certifications for edible oils in oil processing plants in recent years have only been certified for CCP (critical control points) during the production and final packaging stages. For example, our company's literature only mentions the SSOP (Sanitary Standard Operating Procedure) control of the temperature of the storage area of the edible oil factory. The expeller pressed oil literature also only analyzes the step of edible oil packaging, which adds provisions for edible oil labels. Leader machinery did not set the steps of decolorization and deodorization as CCP when the hazard analysis of rice bran oil refining process. In fact, these two steps have been called "magic process" by foreign oil processing industry. The extent to which some of the parameters can control some of the chemical hazards remains to be further studied. The hazard analysis is also focused on PET (polyester) packaging. The edible oil leaves the processing plant and goes through a long period of transportation, storage and sales in the distribution process.

Can you get to the daily consumption of people, then how can you really make the edible oil safer? How does HACCP really guarantee the safety of edible oil? This paper combines the source of edible oil safety issues with the current application of HACCP in the edible oil processing industry. Further discussion of the problems that HACCP must pay attention to in the application process of edible oil industry can provide a reference for China's oil and fat industry to effectively control the safety of edible oil by implementing HACCP.

1 Current HACCP plays a role in the edible oil industry. Compared with some management systems, the HACCP system is a preventive system for controlling hazards based on Good Manufacturing Practices (GMP) and SSOP. Its main control objective is Food safety [8-10]. As HACCP applies to other food industries, HACCP plays an important role in the oil industry. HACCP is able to identify all possible hazards from the source of expeller pressed oil processing and establish preventive measures based on science. It transfers the raw material requirements of the oil processing enterprise to the raw material supplier to ensure the safety of the raw materials and reduce the original harm of the food. For example, the chemical production aids such as soy, citric acid, food grade alkali and lubricating oil required for the production of salad oil must be strictly controlled.

The HACCP system also enables oil companies to reduce quality management costs and reduce the risk of producing and selling unsafe products.

The HACCP system makes it easier to design and manufacture new processes and equipment by predicting potential hazards and proposing control measures.

reliable. Some oil processing plants not only process an edible oil product, but also expand and

rebuild it. The application of HACCP can identify new possible hazard steps in the expansion and reconstruction process, such as when producing new oil products. There will be new and different hazards, which are controlled through different key steps in the production process. The use of HACCP can make the design and selection of production processes and equipment more reasonable. The HACCP system provides an ideal and full range of food safety monitoring and control methods for production companies and government supervisory agencies, making the food quality management and supervision system more complete and the management process more scientific. HACCP has designed the word "safety" into the product processing process to prevent it from happening. This preventive food safety control system naturally provides the most economical and effective means for food manufacturers and government supervision agencies. HACCP has been recognized by government oversight agencies, media and consumers as the most effective food safety control system, and it has gradually become a global food safety control system. The HACCP system certificate is a permit to enter the international market. Implementing the system is tantamount to demonstrating to the public that the company is a company that regards food safety as the number one, thereby increasing people's confidence in the products and improving their competitiveness in the same industry. And provide effective and favorable evidence for yourself in litigation related to quality and safety. Emphasis on HACCP audits in the trade in edible oils can reduce the cumbersome inspection procedures for refined oils. China has re-developed ecological agriculture and expanded the proportion of non-polluting crops. Since the beginning of 2007, China's requirements for genetically modified oils and fats have been described in the label, which makes China's edible oil enterprises pay more attention to the corresponding requirements, understand various safety and health requirements, and produce foods that meet the requirements. The above example illustrates the enormous role that HACCP has played in the oil and fat industry in recent years. However, HACCP is a very flexible management system, and its practicality is very strong. The problems encountered by HACCP in the actual application process are endless. Its application in the oil and fat industry is the same, and there are many places for improvement.

2 Analysis of safety problems in edible oil production and consumption process If you want to implement the HACCP food safety from "farm to table" in the edible oil industry, we must first understand that it is really possible for consumers to produce in the whole process of production and consumption. What are the safety implications? The following is an analysis of the causes of oil safety accidents worldwide in recent years. There are seven major sources of major hazards to personal safety in edible oils.

(1) New processes, expansion of production lines and unqualified products produced during the wrong operation. For example, in the case of oil production by leaching, the contaminated edible oil is not contaminated by the solvent or the lubricating oil or oil in the process.

(2) Improper storage causes oil quality changes, resulting in harmful substances in the oil.

(3) Harmful in the raw materials and during normal operation. For example, oil seeds are contaminated with aflatoxin or contaminated with organic pesticides, mainly organic phosphorus, organic chlorine and carbamate pesticides for oil crops.

(4) During the transportation process, the rented containers may have previously been contaminated by industrial oil. False behavior not only causes the quality of the product to decline, but also may endanger people's health. In particular, the intrusion of tung oil, cottonseed oil, sesame oil, hemp oil, etc., can cause serious damage to the human body.

(6) Improper eating methods can also cause short-term or long-term harm to the human body. For example, when the oil is used, the oil temperature is too high and repeated use to form polycyclic aromatic hydrocarbons.

(7) The effect of trans-fatty acids and other substances on human health. Raw material reception ? Raw material storage ? Cleanup ? Softening ? Rolling stock ? Leaching ? Filtration ? Mixed oil evaporation, stripping (hair oil) ? Filtration ? Degumming ? Deacidification ? Decolorization ? Deodorization ? Dewaxing ? Adding antioxidants ? Packing ? Storage and transportation ?(Grading) Sales ?Placed after purchase ?Edation 1 The whole process of expeller pressed oil production until consumption The above seven safety issues are almost the source of all major expeller pressed oil safety problems, combined with the current HACCP in the expeller pressed oil industry.

The current status of application, combined with the safety status of oil products and the production and consumption process of expeller pressed oil (shown in Figure 1), can be seen: The first and second safety problems occur within the oil processing plant, and the probability of occurrence is very small. It is easy to be found by producers in the production process, and it has been better controlled in more regular expeller pressed oil processing plants. The third safety issue is in the procurement of raw materials from expeller pressed oil processing plants, and today's HACCP applications in the expeller pressed oil industry can pass the requirements of raw materials for oil processing companies to raw material suppliers, so that such safety problems can be solved. For example, the sources of chemical production aids such as soybeans, citric acid, food grade bases, and lubricating oils mentioned in some existing literature may be controlled by HACCP.