Technological progress of soybean oil refining industry

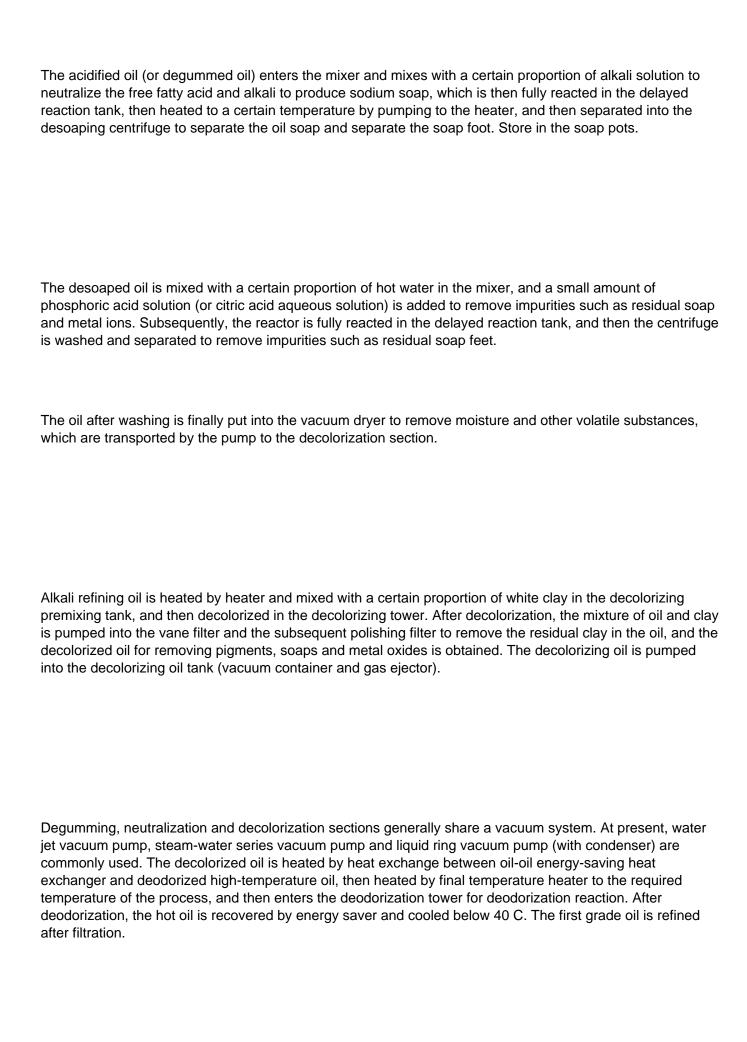
Soybean oil is one of the most commonly used edible oils in the world, and it is also the most demanding edible oil in China. In recent years, soybean oil production has increased steadily at home and abroad as soybean oil demand has increased year by year.



According to the report of the Ministry of Agriculture in May 2017, China's edible vegetable oil output in 2016/2017 was 26.3 million tons, of which soybean oil output was 15.62 million tons. It was predicted that China's edible vegetable oil output in 2017/2018 would be 26.85 million tons, of which imported soybeans were in demand. The soybean oil production increased by 15 million 920 thousand T, an increase of 300 thousand T compared with the previous year. China's soybean oil processing scale has been growing rapidly under the stimulation of market demand, and now accounts for about 60% of the total domestic vegetable oil production, and the production capacity has ranked first in the world.

At present, the five largest soybean crushing enterprises in China are China Food Group, Yihai Jiali Group, Jiusan Group, Bohai Group and China Grain Storage Group. The annual crushing volume of soybean of China Food Group and Yihai Jiali Group is more than 10 million tons.

Because soybean oil accounts for a large proportion of the total output of vegetable oil and is the largest edible oil in China, the state attaches great importance to the research and development of its processing technology. In recent years, food safety and nutrition, energy saving and environmental issues have attracted more and more public attention. Meanwhile, moderate processing of soybean oil has been widely advocated, thus promoting the development of new soybean oil refining process. In this paper, the application status of soybean oil refining technology in China and the research progress of new technology are briefly introduced.
Refining technology of soybean oil
The traditional technology of soybean oil continuous refining has been very mature after many years of development. Its microwave drying machinery and equipment technology can be divided into three sections: degumming, neutralization, decolorization and deodorization.
The division of soybean oil refining process is introduced below.
Soybean crude oil is filtered and impurities removed, then pumped into the production line, heated to a certain temperature by heater, and then into the mixer. In the mixer, the crude oil is fully mixed with a certain proportion of phosphoric acid solution (or water), and then into the delay tank for further conditioning. The non-hydrated phospholipids in the oil are converted into hydrated phospholipids.



In order to recover free fatty acid and other condensate, reduce pollution and load of vacuum system, the gas in deodorizer is cooled in fatty acid trap. When the gas passes through the packer's fillers, fatty acids and other volatile substances are cooled by circulating cold fatty acids. The recovered fatty acid distillate
accumulates in the fatty acid storage tank.
In the vacuum system of deodorization section, four-stage steam jet vacuum pump (small and medium-sized production line) and closed-circuit lye freezing water vacuum system (large and medium-sized production line) are often used at the present stage.