Edible vegetable oil refining technology

Vegetable oil is a necessity for human life, one of the main nutrients in food, and an important raw material for the food industry, light industry, and pharmaceutical industry.

The production and processing of edible vegetable oils plays an important role in the entire national economy. As people's concerns about their health status increase and the market demand continues to increase, the refining technology of plant oil is receiving more and more attention and attention.

The unrefined vegetable oil obtained by microwave drying mechanical pressing or solvent extraction is referred to as wool in the process of producing grease. The main ingredient of the oil is glycerol tri-fat vinegar (ie triglyceride).

In addition to this, there are various impurities. These include suspended impurities (sand, grass clippings, etc.), peptized impurities (phosphorus esters, etc.), oil-soluble impurities (free fatty acids, hydrocarbons, etc.) and moisture. These impurities are derived from pollution from harvesting, storage, and processing. Their presence reduces the quality and value of the oil.

, shortened the shelf life of grease.

Therefore, it must be removed according to the requirements of the use of various synthetic oils and fats through different process routes. This is the oil refining technology and oil refining technology to be introduced in this paper. Countries such as the United States, Germany, Japan, and Malaysia have established a relatively complete refining industry system since the 1960s. In recent years, due to the serious backlog of food secondary oil in our country, the market demand has also promoted the rapid development of refining technology.

At present, the widely used refining technology is divided into mechanical decontamination, hydration degumming, neutralization deacidification, adsorption decolorization, distillation deodorization, and freeze degreasing. In this process, a large number of chemical common parts and standard parts, such as pumps, compressors, heat exchangers, flow meters, pipeline valves, instruments, etc., are involved, and involve centrifugal separation technology, vacuum technology, automatic control technology, etc. Technology and more advanced testing methods and machinery manufacturing technology.

Mechanically mixed

The mechanism of removing impurities is mainly achieved by gravity sinking, filtering or separation from J. Gravity sinking and lowering the nature of the suspended impurities and the weight of the grease to make the impurities fall

The device is simple and easy to operate. Filtration can realize solid-liquid separation. In our country, we use intermittent plate-and-plate filter presses; semi-continuous disk filters, quick-opening filters or vibrating filters; continuous-operated centrifuges.

Hydration degumming

The purpose of hydration degumming is to remove the gelatinous impurities from the wool. Phosphate, a by-product of hydration degumming, has a high nutritional value and can be used as an edible phospholipid or a medicinal phospholipid after further drying, concentration and refining. The operating conditions are i knocking at 80 °C, and the water addition is 3.5 times the phospholipid content. The main components of phospholipids are lecithin (phosphocholine) and cephalin (phosphorus, acid ethanolamine), in which lecithin is neutral and cerebral phospholipid is slightly acidic. Phospholipids have strong water absorption. The addition of water causes the volume of phospholipid molecules to expand. Under the action of heating and stirring, the phospholipid colloidal particles dispersed in the oil gradually merge, and the macromolecules with a specific gravity greater than that of the oil are then dispersed from the oil. Settling or separation.

If the finished product is required to be high-grade cooking oil or salad oil, the degumming shall be carried out by acid refining method, that is, adding a certain amount of sulfuric acid (or phosphoric acid, oxalic acid) solution according to the quality of the hair oil, stirring, separating the oil feet after the reaction is completed, and then adding a certain amount. Hot water wash. The oil obtained by hydration is called degummed oil.