

Research progress in extraction technology of linseed oil



In recent years, with the progress of science and technology, the nutritional value and health function of linseed oil have attracted the attention of scientists in many fields, such as medicine, food, agriculture and so on. Several extraction processes of flaxseed oil were reviewed, including squeezing, solvent extraction, supercritical extraction and enzymatic extraction. The advantages and disadvantages of various processes and factors affecting the extraction efficiency of linseed oil were discussed.

[Microwave drying machinery](#) and equipment to extract linseed oil. The content of unsaturated fatty acids in flaxseed oil is over 70%. The content of oleic acid is 10%-30%, the content of linoleic acid is 10%-30%, and the content of alpha-linolenic acid is 45%-65%[1]. Alpha-linolenic acid plays an important role in the prevention and treatment of cardiovascular diseases, lowering blood cholesterol, enhancing immunity and delaying aging.

Flaxseed oil is extracted from flaxseed by [flaxseed extractor](#). The main evaluation indexes of the extraction process are oil yield (proposed oil quality/flaxseed quality) or extraction rate (proposed oil quality/flaxseed oil quality). The extraction process of linseed oil is reviewed in this paper.

Extraction process of linseed oil

1.1 microwave drying press method

Microwave pressing is the basic process of cooking oil.

The pressing method is to separate oil from oil directly by physical pressure, which is divided into hot pressing and cold pressing. The whole process does not involve any chemical additives. Cold pressing is directly processed under natural conditions. Cold pressing method can ensure the safety and hygiene of products, and the natural nutrition is not destroyed. It is an ideal processing method, but the oil yield is low. Hot pressing needs to fry raw materials. The oil yield is higher than that of cold pressing, but the color of oil is darker.

1.2 solvent extraction method

Solvent extraction method is to use solvent oil to soak the oil raw material, and then extract it at high temperature. It is processed by "six degreasing" process (degreasing, degumming, dehydration, decolorization, deodorization and deacidification). Common solvents include light gasoline six, petroleum ether, etc. In addition to the direct leaching of flaxseed to produce oil, the crushed cake can be further leached as raw material to produce oil and maximize the oil in flaxseed. In addition, solvent extraction can also effectively remove toxic substances cyanide.

summary

Linseed oil, which is rich in alpha linolenic acid, is one of the most popular health care edible oils in the world. The extraction methods of flaxseed oil are rich and varied. Because of the simple technology and low technical requirements of microwave pressing, it is the main extraction method of flaxseed oil at present. The disadvantage of solvent extraction is that organic solvents are mixed in the middle, which makes it difficult for subsequent refining. Biological enzyme and supercritical fluid extraction as a new extraction technology have broad prospects. Especially supercritical fluid extraction (SCE), which is simple and pollution-free, is expected to be a large-scale method for preparing edible flax oil.