Improving the Efficiency of Essential Oil Extraction Machine by Ohmic Heating

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ABSTRACT

Essential oil is extracted from certain herbaceous plants with pleasant odor. Due to the special smell, essential oil has been paid attention to food industry, perfume business and medical area in recent years. Mostly the extraction of essential oil is conducted by distillation, the concrete process is make the vanilla become mince or grind, then put it into distiller and extract by high- temperature steam. The high- temperature steam will carry the fragrant composition and enter the cooling tank. After cooling, it will get the mixture of essential oil and fragrant water. The mixture will divide layer gradually because it can ’ t mix to each other after several hours. By this way, it can get the natural essential oil to get the upper oil. In this experiment, it will improve efficiency of traditional type essential oil extracting machine with ohmic heating. Ohmic heating is by passing alternating current through materials, heat will generate inside materials. According to previous report, this technology can breakdown the cellular tissue, which indicates high thermal efficiency, high product yield, and decrease the energy lost. In this project, a prototype of essential oil extractor with ohmic heating technology will be constructed and the product will compare with traditional type essential oil extractor. The results show that improving type essential oil extractor got a large improvement in yield, and the products do not have apparent different when compare with traditional type essential oil extractor.

Keywords : ohmic heating, distillation, herb(vanilla), essential oil, extract

Table of Contents

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