Extraction Of Essential Oil Using Steam Distillation

The main objective of this research is to introduce a new novel method to extract essential oil from various plant materials. This new solvent free method, which does not use any chemical solvents or water, should be able to produce a higher yield with a better quality of essential oil. This study also embarks on the following specific objectives ; to extract and compare essential oils extracted from both solvent free method and hydro distillation method in terms of yield, time of extraction and temperature for extraction ; to analyze the essential oil produced from solvent free method and hydro distillation method using Gas Chromatography (GC) and to elucidate the chemical constituents of the essential oil using Gas Chromatography-Mass Spectrometry-Mass Spectrometry (GC-MS/MS) ; to establish a correlation between bioactivity of the extract through antioxidant activity test for essential oil extracted using solvent free method and hydro distillation method ; to propose a suitable design for the pilot scale reactor of solvent free method for possible commercialization and industrial applications.

What are essential oils? Uses and side effects Young Living Essential Oils: World Wide Leader in Essential Oils How To Use Essential Oils: 16 Tips for Essential Oil Safety The essential guide for beginners to the use of essential oils. In our book, we have a chapter that guides us to steam distillation and production of essential oils at

home and in the company. Steam current distillation is a technique that allows the extraction of essential oils and aromatic waters from aromatic herbs and medicinal plants; in other words, with steam current distillation, we obtain aromatic waters from which the essential oil is extracted.

Tagetes erecta (cv.Mint marigold) is not only grown for ornamental purposes but also used for essential oil extraction. Essential oils are natural plant products which accumulate in specialized structures such as oil cells, glandular trichomes and oil or resin ducts. In present study, extraction of essential oil from marigold will be carried out through solvent extraction method by using two solvents, petroleum ether and n-hexane. Gas chromatography analysis will be carried out for quantitative and qualitative analysis of oil.

Essential oils are often used in aromatherapy, a form of alternative medicine that employs plant extracts to support health and well-being. The essential guide for beginners to the use of essential oils. In our book, we have a chapter that guides us to steam distillation and production of essential oils at home and in the company. Steam current distillation is a technique that allows the extraction of essential oils and aromatic waters from aromatic herbs and medicinal plants; in other words, with steam current distillation, we obtain aromatic waters from which the essential oil is extracted. This book puts the power of natural healing in your hands. This simple guide distills the knowledge needed to unlock the potential of commonly available essential oils. Start making nutritious, all-natural, affordable remedies to treat a

variety of conditions, for your skincare and home cleaning products.

The production of essential oils from natural sources is a highly profitable nowadays. The herbaceous perennial of cooking ginger has been used in culinary uses and home remedies since ancient time. Cooking ginger is also known scientifically as Zingiber Officinale spp. The extraction process of ginger is conducted by undergoes the sample of rhizome which part of the plant contains the active compound of essential oil and pungent compound using hydrodistillation method. The components of the essential oil will be decomposed and will create new components that is unidentified if the extraction process undergoes in high temperature. Hence this study is focused to optimize the condition of hydrodistillation which are the size of sample and time of experiment conducted to extract the essential oil from ginger to yield better essential oil without decompose its components. Then the essential oil obtained will be diluted in n-hexane before analyzed it by Gas Chromatography using the Flame Ionization Detector, (GC-FID). The result obtained from the analysis will be compared between the data gained from the analysis of the reference compound of cineol and compare the result between the data obtained with the reference data of cineol and hydrocarbon. Qualitative analysis shows the powder size yields more essential oil than slices size while quantitative analysis shows the samples of Eoil1 and Eoil2 did yield the marker compound of 1, 8-cineol.

Egyptian hieroglyphs, Chinese scrolls, and Ayurvedic literature record physicians administering aromatic oils to

their patients. Today society looks to science to document health choices and the oils do not disappoint. The growing body of evidence of their efficacy for more than just scenting a room underscores the need for production standards, quality control parameters for raw materials and finished products, and well-defined Good Manufacturing Practices. Edited by two renowned experts, the Handbook of Essential Oils covers all aspects of essential oils from chemistry, pharmacology, and biological activity, to production and trade, to uses and regulation. Bringing together significant research and market profiles, this comprehensive handbook provides a much-needed compilation of information related to the development, use, and marketing of essential oils, including their chemistry and biochemistry. A select group of authoritative experts explores the historical, biological, regulatory, and microbial aspects. This reference also covers sources, production, analysis, storage, and transport of oils as well as aromatherapy, pharmacology, toxicology, and metabolism. It includes discussions of biological activity testing, results of antimicrobial and antioxidant tests, and penetration-enhancing activities useful in drug delivery. New information on essential oils may lead to an increased understanding of their multidimensional uses and better, more ecologically friendly production methods. Reflecting the immense developments in scientific knowledge available on essential oils, this book brings multidisciplinary coverage of essential oils into one all-inclusive resource.

Cinnamomum Zeylanicum is a very popular spice and

very useful substances in medicines and food, said to be originated from the island Sri Lanka, southeast of India. The plant is also playing an important role in aromatherapy due to its chemical constituent and also its aroma and scent. It contains cinnamaldehyde, an aromatic compound that have a very pleasant smell that can relax and soothe the mind and body, and also eugenol that have a strong aromatic odor and a spicy, pungent taste. The aims of this research are to extract and obtain essential oils from Cinnamomum zeylanicum using hydro distillation technique and ultrasonic extraction method, to analyze the chemical compound present in the essential oil using Gas Chromatography-Mass Spectrometer (GCMS), and to use the extracted essential oil in aromatherapy as a perfume oil. The hydro distillation method is used to obtain the essential oil from Cinnamomum Zeylanicum by grinding the leaves into a fine powder, weighing and then extracted the essential oil by Soxhlet apparatus while by ultrasonic extraction, the samples will soak in a mixture of ethanol and water in ultrasonic bath then will centrifuge to separate the solid and liquid. Next, the sample will be analyzed by GS/MS technique after rotary evaporating to separate between oil and water, in order to determine the chemical composition in the leaves of the plant. The percentage of essential oil yield is calculated as the weight of essential oils divided by the weight of leaf powder. Then, the essential oil will be tested as aromatherapy oil by using sensory evaluation. The result showed only essential oil by hydrodistillation contains eugenol and others 29 volatile and aromatic compounds while the essential oil

by ultrasonic extraction, it contains no eugenol but more antioxidant compound. The time of extraction and weight of dry leaves should be varied in order to get better results in term of yield and active compound in the essential oil.

Pure Jasmine essential oils are primarily used in the perfumery industry and have a very high commercial value due to its therapeutic properties. As Jasmine essential oils are composed of heat-sensitive chemical compounds, the use of conventional steam distillation technique would inevitably inflict thermal degradation to the natural fragrance. In this experimental work, solvent extraction method using ethanol as solvent was employed due to its mild extracting condition and lower operating cost. Three different petal condition were used, which is dry petal,wet petal, and normal petal respectively. The extract compositions were compared using gas chromatography analysis. Preliminary results showed that volatile oil compounds were successfully isolated from Jasmine flowers using these conditions. It was found that the main constituents of the essential oils were benzyl acetate and benzyldehyde. Further studies also revealed that the composition and yield of essential oils was mainly influenced by the different types of petal condition used. The most optimum concentration which is Benzyl Benzoate Concentration 2.6370% and Benzaldehyde Concentration 1.0780% was extracted using dry petal condition . Low yield of the jasmine essential oils can be improved in future study by carrying out the research in larger scale.-Author.

Essential oils are also known as volatile oils, ethereal oils or aetherolea, or simply as the oil of the plant from which they were extracted. Essential oils are generally used in perfumes, cosmetics, soaps and other products, for flavoring food and drink, and for adding scents to incense and household

cleaning products. Various essential oils have been used medicinally at different periods in history. Medical applications proposed by those who sell medicinal oils range from skin treatments to remedies for cancer, and often are based solely on historical accounts of use of essential oils for these purposes. Interest in essential oils has revived in recent decades with the popularity of aromatherapy, a branch of alternative medicine that claims that essential oils and other aromatic compounds have curative effects. Oils are volatilized or diluted in carrier oil and used in massage, diffused in the air by a nebulizer, heated over a candle flame, or burned as incense. This book describes about the physicochemical properties, chemical composition, distillation, yield, quality of essential oils, process of extraction of essential oils, manufacture of essential oils, products derived from essential oils and so on. The book in your hands contains formulae, processes, and test parameters of different types of essential oils derived from different natural sources. This is very helpful book for new entrepreneurs, professionals, institutions and for those who are already engaged in this field.

Microwave-assisted hydrodistillation (MAHD) has recently been developed for the extraction of essential oils from plant materials. In this study, microwaveassisted hydrodistillation was investigated for the extraction of essential oils from lemongrass and start anise and the results were compared with those of the conventional hydrodistillation in terms of extraction time, extraction yield/efficiency and chemical composition. Microwave-assisted hydrodistillation was efficient in extraction in terms of extraction time and energy saving. Lemongrass and star anise was in the ratio of 1:10 with water and the essential oils components were identified using GCMS. There were significant different in the extraction yield of essential oils from both of the method and higher yield were obtained from MAHD method. Results of analysis

from gas chromatography-mass spectrometry indicated that the use of microwave in hydrodistillation did not adversely influence the composition of essential oils. Microwave-assisted hydrodistillation was found to be environmentally friendly due to its shorter extraction time and therefore lower energy consumption.

The Basil (Ocimum basilicum) essential oil was a significant interest as a new high-value essential oil especially in pharmaceutical, aromatherapy aid and cosmetics industries which give large opportunities for global marketing. Traditional extraction method Hydodistillation (HD) used to obtain essential oil have several drawbacks which are longer time consuming, have low extraction yields, and higher operational costing. At present the most appropriate technique to improve the quality of essential oil was by using Microwave assisted Hydrodistillation (MAHD) which able to overcome the drawbacks like mentioned above is introduced. This study obtained to identify the effect of the extraction time, yield and composition of Basil essential oil for HD and MAHD. Ratio of Basil and water used was 1:8 were placed in the HD and MAHD setup. The essential oil components were identified by using GCMS. The result shows MAHD can obtained higher yield at lowest extraction time due to more efficient heat transfer involved with microwave. The dominated compound was Methyl cinnamate (34.38% and 66.26%) an oxygenated compound for both HD and MAHD. As a conclusion MAHD obtained greater yield with shorter time and high percentage of oxygenated compounds compared with HD. Furthermore MAHD shows a good alternative method to produce essential oil of Basil.

The objective of this research is to extract essential oils from M. koenigii leaves by using ultrasonic-assisted solvent extraction method. The major constituent of M. koenigii has been reported as caryophyllene and 3-carene which is

responsible for the aroma and flavor. This research has focused on the influence of ultrasonic, various natures of solvents, sonication times and also drying method towards the extraction of M.koenigii essential oil. Two types of solvents are used in this research which is ethanol and hexane. In this research, the methods of drying, grinding, extraction, separation and analysis are used and the sample is separated from solvents by using a rotary evaporator to get the essential oil. The sample was analyzed by using a GC-MS to identify the component of M. koenigii essential oil. In this research, the most suitable solvent to produce higher percentage yield is by using ethanol (ultrasonic-assisted solvent extraction of fresh leaves for 30 minutes) and the percentage of oil yield also increased with increasing the time. The major component in M. koenigii leaves is caryophyllene and hexane on the other hand is the best solvent to be used to extract caryophyllene. -Author- Gaharu or it scientific named Aquilaria malaccensis is one of the most precious trees in the world. It is one of the most expensive natural products existing today. Gaharu is also known as Agarwood, eaglewood, aloeswood, oud, chen-xiang, and jingkoh. Gaharu grade C from peninsular Malaysia was used in this study. Conventional extraction method such as ultrasonic extraction and Soxhlet extraction is not effective, lower yield and the reaction time to produce gaharu essential oil take longer extraction time. Microwave assisted extraction method was identified as one of the extracting methods account to the economical, high yield and ease of the operation. By doing microwave assisted extraction, the time and temperature is observed by analyzing the data. The pressure performed at atmosphere (1atm), and temperature range is from 60°C to 100°C. For overall result, the yield percentage obtained is 0%. This is because the parameters that used in this experiment are not suitable for gaharu using

microwave assisted extraction method. Low yield of the gaharu essential oils can be improved in future study by carrying out the research in larger scale.

Essential oil is a valuable essence that is isolated from plant material using various techniques. Essential oil carries the aroma of the plant which it be extracted. Essential oil has their own usefulness for example to be used as in medicinal purpose, aromatherapy industry, pharmaceutical industry, as an insect repellent, and many more.Citronella oil is one of the examples of essential oil that have highly demand in the industry from time to time. The current techniques used in producing essential oil in the industry have their own advantages and disadvantages. Solventless extraction technique is a new technique that has been studied to produce essential oil with high yield, high quality, low cost, low time consuming, and environmental friendly. Optimization by using Response Surface Methodology through Central Composite Design (CCD) is required to study the optimum condition for this technique to produce high yield of essential oil, before it is able to be commercialize to the industry. The effect of temperature and time of extraction has been studied in this research. Through the study, the maximum essential oil produced by this technique is at 100°C and 10 hours, that is 1.354%. The oil produced at this condition is then being analyzed by using Gas Chromatography Mass Spectrometry (GCMS) to identify the active compound inside the plant material. In order to compare the yield and quality of oil produced, solvent extraction method was also conducted in this experiment. The yield has been calculated and the oil has been analyzed by using gas chromatography, (GC). Based on the comparison between these two techniques, it is proved that essential oil produced by using solventless extraction technique is higher in quality compared to essential oil produced by solvent extraction technique.

Essential oils are becomingly increasing popular because of their health benefits. These oils are often used in aromatherapy, a form of alternative medicine that employs plant extracts to support health and well-beingEssential Oils serves a wide range of importance and helps the body on physical, emotional and energetic levels. These oils serves important needs to human health in immune system, hormones, gut/digestive health, respiratory health and help us manage and improve moods, focus, rest/relax as well as get rid of toxic household products.What really are essential oils? Essential oils simply put are plant extracts. Though derived from different plants, these plant substrates that captures its host plant's scents, flavor, properties and "essence". Essential oils derived from plants differs in characteristics due to the unique property of each plants they are derived from. Essential oils are obtained by passing its host plant parts through distillation (via water and steam) or mechanical process like cold pressing. Once the chemical substances from the plants have been extracted, they are mixed with a carrier oil base to produce the end product.The processes employed in producing the oils is crucial as these processes go a long way to determine the quality and properties of the oils. The processes of extraction employed are also crucial because essential oils that employ chemical processes are not well received as true essential

oils.History of Essential OilsThe use of essential oils can be dated as far back as 4,500 BC in Egypt. The ancient Egyptians have been using these aromatic plant oils for several healing ointments and cosmetics production. They had sourced these oils from essential plants such as Onion, Grapes, Myrrh, and Cedar, creating various herbal mixtures of these oils to proffer different solutions.However, around 3,000 - 2,000 BC, these aromatic oils were reportedly available in the Chinese folks' traditional medicine and the sourced Indian's traditional medicine. These are from various plants, including Sandalwood, Cinnamon, and Ginger. They were in Greece history within 600 - 300 BC.Furthermore, various chemists recorded the active components present in essential oils between the 18th and 19th centuries. Currently, these oils are being used across the world and amongst varying cultures for their various purposes. They have also found use in the pharmaceutical fields; used for varying purposes and are quite beneficial. However, it is essential to note that the ingestion of some essential oils can be very harmful. This harmful effect can be because most of these oils are created majorly for aromatherapeutic purposes. Some of these oils are also used for food production; they are approved safe by the Food and Drug Association, since the 20th century. However, this use is only under stringent supervision to ensure that food poisoning

does not occur.How to Build and Store a Collection of Essential OilsEssential oils are quite volatile and flammable; hence you mustn't expose them to air and excess heat. Direct sunlight can also hurt their coloration and consequently tamper with their constituents. Therefore, you must keep them stored in a cool and dry place and leave them stored in amber bottles rather than plastic bottles. How to Produce Essential OilsThe extraction of essential oils from the various plant materials occurs when introducing these plant parts to a suitable solvent. There are different extraction methods, and the quality of the oils varies based on extraction. However, some extraction techniques are ideal for some plants, while others might not be. Also, various tools or equipment are involved in the extraction process. Methods and Equipment Employed in Making Essential OilThe conventional methods employed in making essential oils include: Distillation: There are thr

To extract an essential oil the method used is extraction without using organic solvent. The conventional method used is hydro distillation (HD) that applies heat principle. However, a new green technique for essential oil extraction that is microwave which is applies wave principle was developed in recent years. Solvent-free microwave extraction (SFME) is a combination of microwave heating and dry distillation performed at atmospheric

pressure without added any solvent or water. SFME with presence of carbonyl iron powder (CIP) was compared with HD for the extraction of essential oil from vanilla (Vanilla planifolia) with different type of raw material sizing. SFME extracted essential oil with higher value of percentage yield and concentration which allowed substantial savings of costs in terms of time, energy and plant material. SFME is an environmental friendly technique as it was rejected less carbon dioxide (CO2) compared to HD technique. The strength of aroma of extracted essential oil from both methods was compared by calculating the degree of concentration. The loss of the aroma depends on the degree of concentration. By using high performance liquid chromatography (HPLC) system the presence on vanillin in the extracted oil was identified and has been compared in terms of presence of impurities quantity and concentration. Vanilla treated by SFME and HD were viewed by scanning electron microscopy (SEM) and the results reveal that vanilla structure treated by SFME was being more ruptured compared to conventional HD technique.

A large number of herb materials contain Essential Oils with extensive bioactivities. Acknowledging the importance of plants and its medicinal value, extraction of Essential Oil had been done using Steam Distillation method. In this project Steam Distillation was used to extract oil from different plant

materials like eucalyptus leaves, curry leaves, hibiscus leaves, lemon leaves, marigold flowers, rose flowers, orange peels etc. Research has confirmed centuries of practical use of essential oils, and we now know that the 'fragrant pharmacy' contains compounds with an extremely broad range of biochemical effects. Essential oils are so termed as they are believed to represent the very essence of odor and flavor. The recovery of Essential Oil (the value added product) from the raw botanical starting material is very important since the quality of the oil is greatly influenced during this step. There are a variety of methods for obtaining volatile oils from plants. Steam distillation method was found to be one of the promising techniques for the extraction of essential oil from plants as reputable distiller will preserve the original qualities of the plant. The distillation was conducted in Clevenger apparatus in which boiling, condensing and decantation was done. Analysis of Essential oil was done using Gas Chromatography-Mass Spectrometer apparatus, which gives evaluates Essential Oil qualitatively and quantitatively. Volume of Essential Oil obtained was changing w.r.t temperature and time of heating. Agarwood species is also known as Aquilaria maleccencis which is a genus in the family of Thymelaeceae. In Malaysia, the tree of Aquilaria maleccencis is called as karas and its fragrant wood is known as gaharu. Nowadays, agarwood widely

used in essential oil production industry, meditation field and incense which has been classified as one of the most highly valuable products in the world market due to its therapeutic properties. This research objective are to compare microwave extraction and hydrodistillation for their efficiency in the extract of agarwood essential oil and to analysis chemical compounds contained in a sample of agarwood by using gas-chromatography flame ionized detector (GC/FID) and gas-chromatography mass spectrometer (GC/MS). In the present work, microwave extraction has been compared with a conventional technique, hydrodistillation in terms of extraction time, extraction yield, efficiency, chemical composition, quality of the essential oils and cost of the operation. Agarwood essential oil normally has more than a hundred components and it can be analyze by using GC/FID and to determine the major compounds, GC/MS will be use to detect the compounds. For this research, microwave extraction is identified as one of the extracting methods account to the economical, high yield and ease of the operation.

Essential oils are composed of a wide range of bioactive chemical compounds. They traditionally found application as flavour, fragrances and medicinal aroma. Today, the essential oils are sought-after for innumerable applications starting from markers for plant identifications to base for

semi-synthesis of highly complex molecules. The extraction of highly delicate essential oils from plants remains a crucial step in all these applications. By using microwaves to mediate the extraction, it is possible to maintain mild conditions and effect superior extraction. However, apart from laboratory trials, essential oil extraction using microwave energy is largely an unexplored area. In the current work, an integrated procedure for microwave extraction followed by volatiles sampling and analysis from selected botanical raw materials (viz. black pepper, Piper nigrum and coriander Coriandrum sativum) was developed. There are two problems to overcome in the extraction from solid plant materials: that of releasing the essential oil from solid matrix and letting it diffuse out successfully in a manner that can be scaled-up to industrial volumes. Towards this end, an innovative volatiles extraction unit was conceived, designed and developed that used thin layer, for microwave exposure and rotational mixing, to mitigate the effects of thermal gradient and non-uniform exposure of bulk matter. The effect of varying the microwave field on the essential oils extracted was studied. The microwave field that coupled in the region of extraction was estimated from temperature rise measurement using the microwave power equation (with water as reference dielectric). The essential oil extracted under different microwave

fields were compared using gas chromatography-mass spectrometry (GC-MS) and data analysis with SAS statistical software. The microwave field at the site of extraction was sensed by symmetrical placement of biomaterial sample and a reference, in a rotational extractor, such tha.

This study is about Extraction of Patchouli Oil Using Steam Distillation. The objective of this research is to study the feasibility of the optimum condition of steam distillation in patchouli oil extraction process. Patchouli oil extraction is still new but has gained large market demand for the benefit on therapeutic and healing properties of this essential oil. However, cost-effective route have yet to be develop. This research has identified two scope of study to achieve the objective which is to vary the effect of different extraction time and sample mass on the yields. In this extraction, part of the plant used is the leaves and stick. Firstly, the raw material is exposed 3 hours under direct sunlight and 3 days in room temperature. Dried patchouli plants are then cut to 2 cm in size. Then, the leaves are stacked in the extraction vessel. High pressured steam passed through the plant material from the bottom of the vessel. Hot steam will force open the pocket in which the essential oil of the patchouli was kept. Next, the steam which contains the essential oil passed through cooling system to condense the steam which would separate the essential oil from water.

Pure oil is extracted with this method. For this equipment with the range of 7 hours extraction time and 2 kg to 4 kg sample masses, the optimum extraction time is at 7 hours with 3 kg sample mass.-Author.

Aquilaria species from the family of Thymelaeceae are the main source of gaharu, which has been classified as one of the most highly valuable, non-timber products in the world market. Its distinctive fragrance has been valued in many cultures and it is widely used in religious ceremonies, medication, incense, perfume and toiletry products. Currently, the method used for extracting gaharu essential oil is by using hydrodistillation. However, this method is inefficient which it produced low yield of oil and longer time of extraction and thus increasing the production cost. To overcome those problems, this study will be conducted to improve existing method of extraction by using ultrasonic assisted steam distillation. Parameters involve in this study is pretreatment time and gaharu-to-water ratio and both are manipulated to gain high yield of oil with optimum and maximum. The results from this study is the gaharu essential oil yield is increasing with the increment of both pretreatment time and gaharu-to water ratio until it reached a condition where the yield of oil become constant. The best pretreatment time obtained is at 9 hours with oil yield of 0.1276% and the gaharu to water ratio of 1:20.which gave

0.1295% oil yield. Author.

The Complete Technology Book of Essential Oils (Aromatic Chemicals) Reprint-2011ASIA PACIFIC BUSINESS PRESS Inc.

Pure essential oils are derived from various part of the plant. These essential oils have a very high commercial value due to its properties. They are widely used in the various fields of industries, such as perfumery industries and pharmaceuticals. Conventional technique to extracts this oil such as steam distillation is unsuitable since it induce thermal degradation of compounds in the oils. It is for this reason that the extraction of essential oils using supercritical fluid extraction method is said to be the most effective method. It also can avoid contamination of the oil. This extraction technique employed carbon dioxide (CO2) as solvent due to CO2 is stateless, odorless, non-toxic and chemical inertness and would not contaminate the environment and products. Thus, the material residues can be used without pretreatment. Beside that, the low critical properties make CO2 the most preferable solvent in this technique. The used of co-solvent also affect the extraction of these essential oils because it could modify the CO2 selectivity towards the fragrances compound. This can in turn produce higher quantity of products. For this purpose, two co-solvent had been employed, viz. ethanol and methanol. Essential oil is one of an important concentrated liquid that possesses many physical, chemical and pharmacological properties. Extraction of essential is one of the main issues in the last decade. Conventional treatment consisting of hydrodistillation and steam

distillation has many disadvantages and finds difficult to purify essential oil. Now, it is much easier to extract essential oil with the invention of new greener technologies that reduce the involvement of solvent, decrease the extraction time, energy and descent the interaction of the concentrated volatile liquid with atmospheric oxygen through the application of vacuum. The book 'Technology of Perfumes, Flavours & Essential Oils' covers various methods including Creating a Perfume, Flower Perfumes and Their Formulat ions, Packaging of Perfumes, Testing a Perfume, Aerosol Spray, Aromatic Perfumery Compounds, Scents and Perfumes, Spray (Perfumes), Floral Oils, Manufacturing Processes of Flavours, Non-Alcoholic Flavours, Flavours Fruits (Whiskey, Vodka, Grape Butter Scotch and Rum), Terpeneless Menthol Crystals, Trends in Trade of Essential Oils, Demand for Essential Oils, Super-Critical Fluid Extraction (SCFE) Technology-For Spice Extraction, Citronella Oil, Clove Oil, Extraction of Essential Oils by Super Critical Fluid (Carbon Dioxide) Method from Flowers, Herbs and Spices, Eucalyptus Oil, Ginger Oil, Jasmine Flower Oil, Production Technology of Jasmine for Essential Oil, Lemon Grass Oil, Palm Oil Crushing Unit, Essential Oils by Steam Distillation, Composition of Essential Oil from Flo wers of Keora, Distillation of Eucalyptus hybrid Oil, Turmeric (Curcuma Longa L.) Leaf Oil, a new Essential Oil for Perfumer Industry, Essential Oils and Flavours, Technology of Essential Oils, Essences and Ottos : Preparation of Essences, Natural Essences, Marketing of Artificial Essences, Preparation of Ottos, Rose and Keora Water,

Toilet Water, Technology of Flavours, Role of Perfumer, Quality Control in Aromatic Plants, Palmarosa Oil, Chemical Composition of Lemongrass Varieties, Kewda Essential Oil and Attar, Palmarosa Oil, Sandalwood Oil, Technology fo Palmarosa Oil, Lemongrass Oil, Patchouli Oil, Rose-Scented Geranium, Basil Oil, Turpentine Oil The book has been written for the benefit and to prove an asset and a handy reference guide in the hands of new entrepreneurs and well established industrialists.

This brief provides a valuable reference for the contribution of essential oils in the green chemistry, mainly in terms of their characteristics corresponding to their compositions, the development of their extraction technologies including both conventional and green process (e.g. microwave, ultrasound), and their sustainable applications as antioxidants, antimicrobials, insecticides, green solvents and synthons for the green synthesis.

The use of herbs and plants in food industry has a long history.The diversity among the components of the plants has resulted in their use in many applications including in flavors as well as in medicine.The conventional method for the extraction of essential oils are is hydrodistillation (HD), soxhlet in which the essential oils are evaporated by heating a mixture of water and plant materials followed by the liquefaction of the vapors in a condenser. This method suffers from several disadvantages including losses in the volatile compounds, long extraction time and degradation of some components through thermal process. Microwave heating has an incontestable place in analytical and

organic laboratory practices as a very effective and non-polluting method of activation.In this book, microwave-assisted hydrodistillation (MAHD) was used to extract an essential oil from the Ginger, and Limon grass. Then results compared with the conventional hydrodistillation method.The MAHD resulted in a shorter extraction time compared to the Hydrodistillation (HD), the extraction yield obtained by MAHD is slightly higher than that from HD.And microwave power is very efficient in the extrac In the wake of energy crisis, the alternatives for energy sources are much demanded. the use of herbs and plants in food industry has a long history. the disversity among the components of the plants has resulted in their use in many applications including flavors and medicine. The conventional methods for the extraction of essential oils such as Hydrodistillation (HD)and soxhlet in which the essential oils are evaporated by heating a mixture of water and plant materials followed by the liquefaction of the vapors in a condenser. These methods suffers from several disadvantages including losses in the volatile compounds, long extraction time and degradation of some components through thermal process.Microwave heating has an incontestable place in analytical and organic laboratory practices. In this book, microwave-assisted hydrodistillation (MAHD)was used to extract an essential oil from ginger. Results were compared with conventional hydrodistillation method. Results show that MAHD faster in extraction time, yield and costs compared with HD method.

The essential guide for beginners to the use of essential oils. In our book we have a chapter that guides us to steam

distillation and production of essential oils at home and in the company. Steam current distillation is a technique that allows the extraction of essential oils and aromatic waters from aromatic herbs and medicinal plants; in other words, with steam current distillation we obtain aromatic waters from which the essential oil is extracted. We will find in addition a list of essential oils with properties, dedicated sheets, where to buy them, production and all the information on the uses of essential oils, use and dilutions of carrier oil.The Beginner's Guide to Essential Oils puts the power of natural healing in your hands. This simple guide distills the knowledge needed to unlock the potential of commonly available essential oils. Start making nutritious, all-natural, affordable remedies to treat a variety of conditions, for your skin care and home cleaning products.There are countless uses for essential oils. Uses range from the preparation of creams, perfumes, do-it-yourself remedies, personal care, personal hygiene, hair skin care to medical preparations. Recently, the use of essential oils has arrived in the culinary field: there are several chefs who make flavour dishes with a few drops of essential oils. Not all essential oils are edible so they cannot be used in the kitchen or for international use.Explore the many modern applications of essential oils, from herbal medicine to aromatherapy to natural beauty. Discover profiles detailing the aromas and therapeutic actions of essential oils from the most common to the most sought after. Breathe easily with eucalyptus essential oils, perfume the room and your wardrobes with lavender essential oil or the most particular patchouli. With guidelines for safe use during pregnancy and instructions on dilution formulas for babies and children. Mix the healing power of essential oils in your life with the Essential Oils Beginner's Guide! The Essential Guide for Beginners, deals with the classification of oils, from a very detailed explanation of the various types of uses. Essential

oils can have invigorating, draining, relaxing, stimulating properties... Dissolved in carrier oils, they can create ointments that can be applied in a wide variety of circumstances. A reference section illustrated from A to Z helps to identify the most useful oils, as well as sharing advice on application methods and massage techniques. Updated safety recommendations help you learn how to use them for maximum benefit. Explore the multitude of benefits of essential oils and aromatherapy: we will provide tools to address a variety of health problems, including specific advices for children, women, men and the elderly.

Jasmine essential oils are primarily used in the perfumery industry and have a very high commercial value due to its therapeutic properties. As Jasmine essential oils are composed of heat-sensitive chemical compounds, the use of conventional steam distillation technique would inevitably inflict thermal degradation to the natural fragrance. In this experimental work, solvent extraction method was employed due to its mild extracting condition and lower operating cost. Two different solvents were used, which are ethanol and methanol, respectively. The extract compositions were compared using gas chromatography analysis. Preliminary results showed that volatile oil compounds were successfully isolated from Jasmine flowers using these solvents. It was found that the main constituents of the essential oils were benzyl acetate and benzyldehyde. Further studies also revealed that the composition and yield of essential oils was mainly influenced by the different types of solvents used. The most optimum yield which is 14.53% was extracted using ethanol. Low yield of the jasmine essential oils can be improved in future study by carrying out the research in larger scale.

The term "aromatherapy" indicates the use of aromatic essences also known as essential oils or volatile oils, to

ensure well-being, to prevent the disease or to treat certain morbid affections. For "aromatherapy" means a holistic healing method that can act on the physical, mental and spiritual through the 'use of essential oils. This manual brings us to discover all the secrets of the essential oils in the treatment of health and beauty, in the care of body and soul to make us feel at peace and harmony in a natural way, thanks to the aroma-massage and use of essential oils extracted from flowers, herbs, trees, roots and fruits. Essential oils are highly volatile substances, which thanks to this feature can easily reach our nose. Among the complementary therapies, aromatherapy is one of the best known and one that is growing rapidly worldwide. Its therapeutic value is increasingly appreciated by researchers and doctors. Essential oils are precious fluids, sweet-smelling, extracted from many varieties of plants Index of the work: - Extraction of essential oils - Use of essential oils - Properties essential oils - Action on the digestive system - Action on the cardiovascular system - Action on the nervous system - Action on the endocrine system - Action on the immune system - Action on the pulmonary system - Action on the urinary system - Action antitoxic Silver fir Laurel Sweet orange Basil Benjamin Bergamot Birch Cajeput Chamomile Camphor Cinnamon Cypress Citronella Eucalyptus Jasmine Geranium Juniper Hyssop Lavender Cedarwood Lemon Mint Myrrh Myrtle Neroli Niaouly Patchouli Petitgrain Pine Grapefruit Rose Rosemary Sage Sandal Tea Tree Timo Red Ylang ylang Ginger

Essential oils are highly concentrated essences of aromatic plants. It can be extracted using a variety of methods such as steam distillation and solvent extraction. Essential oils have a very high commercial value due to its therapeutic properties. It is widely used in aromatherapy, medicine and as well as flavoring food and drink industries. To get the approximately

pure essential oil from raw material, conventional extraction technique like steam distillation is used. Steam distillation is unlikely solvent extraction. This is because steam distillation is to produce essential oils but solvent extraction will produce oleoresin. Pure essential oil can be derived from a part of ginger plant that is the ginger rhizome by using steam distillation method. The extraction of the ginger essential oils began when steam contact to the ginger in the extraction tank. The steam carried out the essential oils from the ginger out of the rhizome and go through the condenser. Then, the steam with the essential oils will be condensed into liquid phase and will be collected in the beaker. Lastly, the two liquids will be separated. To get high quality and quality of essential oils, the fire from burner that burned the tank and produce steam in the tank must be well controlled. Apart from being effective, this study might as well discover potential savings in its operational cost and also environmental friendly.

Essential oil is an aromatic liquid that is extracted from various parts of the plants. It contains the true essence of the plant and has many therapeutic benefits. Patchouli essential oil from the extraction of dried Patchouli (Pogostemon Cablin) leaves is the important ingredient in many fragrance products like perfumes and also use widely in medical field. This experiment use ultrasonication-assisted solvent extraction method that comprises two set of experiments in order to investigate the effect of ultrasonic and type of solvent on extraction process. Ethanol, hexane and acetone are the solvents used for the first experiment. The best solvent among three is chosen to be used in second experiment. In the second experiment, ultrasound is used in order to investigate its effect compared to the experiment without using ultrasonic. The qualitative and quantitative analysis has been done in order to show the objectives were achieved.

Qualitative analysis involved the chromatogram analysis from GCMS while quantitative analysis is based on the percent yield. From qualitative analysis, ethanol gives the highest peak area (27.92%) than hexane (20.01%) and acetone (20.42%). In addition, average peak area for ultrasonic method (50.18%) is better than without using ultrasonic (42.40%). Meanwhile, for qualitative analysis, ethanol can extract highest yield (2.87%) compared to hexane (2.53%) and acetone (2.00%). Then, by using ultrasonic, it gives higher average yield (2.27%) than without using ultrasonic (1.67%). Therefore, from these analyses, the best solvent used for solvent extraction is ethanol because it produced highest quality and most yields of patchouli oil. This experiment also has the better result when it involves the ultrasonication method.-Author.