



SHORT COMMUNICATION

Use of Phytoessence in making of Soaps and Body lotion

Dipen Parande, Dr. A. S. Limaye and Dr. S.L. Laware

Department of Botany, Fergusson College, Pune, M.S. (India)

ABSTRACT

It is well known that plants are an important source of secondary metabolites and biochemicals used for a variety of purposes including pharmacy, medicine and industry. The purpose of this research was to extract essential oils from different plants, investigate their properties and use them in making important commercial products like soaps and body lotion. Steam distillation was used as the extraction method to obtain essential oils. The essential oils were screened for their antimicrobial activity against *Escherichia coli* by the Disc Plate method. Results revealed that essential oils are inhibitory against the tested bacterial strain. The essential oil of lavender (*Lavandula bipinnata*) and flower extracts of Aztec marigold (*Tagetes erecta*) and Night jasmine (*Nyctanthes arbor tristis*) were tested for their anti-oxidant activity. Results showed that these flower extracts possess free radical scavenging property. The essential oils were further used in making of Bar soap, Liquid hand wash soap and a Body lotion.

KEY WORDS: shops, oils, bacteria, zone of inhibition

INTRODUCTION

Phytoessence or an essential oil is a concentrated, hydrophobic liquid containing volatile aromatic compounds from plants. As they evaporate when exposed to air at ordinary temperatures, they are also known as volatile or "ethereal" oils. An oil is "essential" in the sense that it represents the essence or active constituent of the plant. Chemically, essential oils are derived from terpenes and their oxygenated compounds. The essential oils are used in perfumes, cosmetics and bath products, for flavoring food and drink, and for scenting incense and household cleaning products. When used in lotions, essential oils moisturize the skin and are beneficial for dry, irritated and dehydrated skin. They reduce wrinkles, acne and are good skin cleansers. They form the base of aromatherapy. Aromatherapy is an alternative branch of medicine that uses essential oils, for psychological and physical well-being. The essential oils are particularly effective in dealing with anxiety, depression and stress related disorders.

The essential oil obtained from *Lavandula bipinnata* has an antibacterial property. The essential oil of marjoram is antibacterial and antifungal. Rosemary oil is an effective antimicrobial against Gram positive bacteria and Gram negative bacteria and yeast.

Antioxidants are substances that may protect your cells against the harmful effects of free radicals. The reason that antioxidants are important to human physical well being comes from the fact that oxygen is a potentially toxic element since it can be transformed by metabolic activity into more reactive forms such as superoxide, hydrogen peroxide, singlet oxygen and hydroxyl radicals, collectively known as active oxygen. These molecules are formed in living cells by various metabolic pathways. The essential oil obtained from the flowers of Aztec marigold (*Tagetes erecta*) has an antioxidant activity. The aqueous extract of flowers, petals and orange coloured calyx of Night jasmine (*Nyctanthes arbor tristis*) has an antioxidant activity. The essential oil of *Blumea lacera* has analgesic, hypothermic and tranquilising properties.

The flowers of Bakul (*Mimusops elengi*) are acrid, astringent, cooling and anthelmintic. 1

MATERIALS AND METHODS**Plant material**

The plants of Blumea (*Blumea lacera*) and Patchouli (*Pogostemon cablin*) were collected from the hilly areas of Mahabaleshwar. Feather-leaved lavender (*Lavandula bipinnata*) was collected from the wild areas of Pune. The plants of Marjoram (*Origanum marjorana*), Peppermint (*Mentha piperata*) and Vetiver grass (*Vetiveria zizanioides*) were collected from a farm in Pune. Similarly Night Jasmine flowers (*Nyctanthes arbor tristis*) and

rose flowers (*Rosa*) were collected from gardens. Aztec Marigold flowers (*Tagetes erecta*) were bought from the market. The collected plant material was screened for its volatile oil content.

Extraction of Essential oils

We extracted volatile oils by the method of steam distillation using Soxhlet apparatus. Distilled water was used as a solvent on which the plant extract was collected.

We used the following essential oils in our products

Sr. no	Name of Phytoessence	Botanical source	Plant parts used for extraction	Colour of Phytoessence	Odour of Phytoessence
1.	Lavender	<i>Lavandula bipinnata</i> (Labiatae)	Leaves and flowering tops	Brown	Sweet, light aroma with a woody undertone
2.	Marjoram	<i>Origanum marjorana</i> (Labiatae)	Fresh or dried leaves and flowers	Pale yellow/amber	Warm, woody, spicy-camphoraceous aroma with a herbaceous undertone
3.	Vetiver	<i>Vetiveria zizanioides</i> (Graminae)	Roots	Amber brown	Deep, sweet, rooty odour like that of a damp forest floor.
4.	Rose	<i>Rosa centifolia</i> (Rosaceae)	Rose petals	Clear to pale yellow	Deep, sweet, rosy aroma
5.	Peppermint	<i>Mentha piperata</i> (Labiatae)	Leaves	Pale yellow	Characteristic and pleasant
6.	Patchouli	<i>Pogostemon cablin</i> (Labiatae)	Leaves	Dark brown	Strong, spicy herbaceous smell

Purification of essential oils

Ether was used as solvent for the purification of volatile oils. Ether was added to the mixture of essential oils and water. The volatile oils are soluble in ether. So two layers are formed- one layer of water and the other layer of ether in which the volatile oil is soluble. The layer of ether is separated from water using a separating funnel. Ether being more volatile than the oil evaporates first and leaves behind the pure essential oil in the flask.

Anti bacterial activity

The essential oils were tested for their antibacterial activity against *Escherichia coli*. The technique employed to test this activity was the Disc Plate method. Nutrient Agar medium was prepared for the culture of this bacterium. The bacterial culture was inoculated on to the Nutrient agar medium. 1ml of pure essential oils was diluted with 1ml of water (1:1 ratio). Small paper discs were soaked in the essential oils mixed with water and then placed on the medium.

RESULTS

A "Zone of inhibition" was seen around the discs placed on the medium.

Antioxidant activity of flower extracts

The essential oil of lavender and flower extracts of Night jasmine and Aztec marigold were tested for their antioxidant (free radical scavenging) activity using DPPH (2,2-diphenyl 1-picrylhydrazyl) reagent.

The colour of the reagent changed from violet to yellow. The spectrophotometric readings were then observed and they showed that these extracts have a high antioxidant activity.

Making of Soaps

Procedure

We used the process of saponification to make the bar soap and the Liquid hand wash soap. Saponification is commonly used to refer to the reaction of a metallic alkali (base) with a fat or oil to form soap.

Ingredients of our bar soap

Sunflower oil, Stearic acid, Sodium hydroxide, Glycerine, Sodium laureth sulphate, Aqua (Distilled water), Sodium chloride, Aloe gel (*Aloe barbadensis*), soapnut (*Sapindus laurifolius*), Night jasmine flower extract (*Nyctanthes arbor-tristis*), Bakul flower extract (*Mimusops elengi*), Lavender essential oil (*Lavandula bipinnata*), Marjoram

essential oil (*Origanum marjorana*), Vetiver essential oil (*Vetiviera zizanoides*), colourant.

Ingredients of our Liquid Handwash soap

Castor oil, Potassium hydroxide, Boric acid, Distilled water, Glycerine, Sodium laureth sulphate, soapnut (*Sapindus laurifolius*), Aloe gel (*Aloe barbadensis*), Aztec Marigold flower extract (*Tagetes erecta*), *Blumea lacera* leaf extract, Peppermint essential oil (*Mentha piperata*), Patchouli essential oil (*Pogostemon cablin*), Lavender essential oil (*Lavandula burmanni*), colourant.

Making of Body Lotion

Procedure

60 ml of olive oil and 20 gm of an emulsifier (beeswax) are taken in a beaker. The beaker is kept on a water bath and heated, checking every thirty seconds until the ingredients have completely melted. Distilled water is poured slowly into the mixture and it is stirred briskly with a stick blender until all the ingredients blend together. The lotion is allowed to cool down for some time, during which it will become thicker.

Ingredients of our body lotion

Emulsifying wax, Olive oil, Distilled Water, Aloe gel (*Aloe barbadensis*), Vitamin E, Milk, Pineapple juice, (*Ananas comosum*), Coconut water, Rose water, Rose essential oil (*Rosa centifolia*), colourant.

CONCLUSION

The formation of “Zone of inhibition” indicates that growth of organisms did not take place around the discs. This proves that the essential oils have antibacterial property.

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Correspondence to Author : Dipen Parande , Department of Botany, Fergusson College, Pune, M.S. (India) . E - mail: abhilimaye123@gmail.com