

## ESSENTIAL OIL OF ROSE CENTIFOLIA L. FLOWER SHOW AN ANTIMICROBIAL ACTIVITY

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### ABSTRACT

Rose centifolia L. Oil revealed wide spectrum of antibacterial antifungal properties against some pathogen including *Bacillus Staphylococcus aureus*, *Pseudomonas aeruginosa* (Eris R.Ulusoy2013). Essential oil of *Rosa centifolia* show various pharmacological properties have been attributed in preparation of Attars, Body perfumed, Body massage oil and Hair oil, which is in therapeutic effect on body (Zargari et.al1992). Thus a very basic and practical study is required. The n-hexane flower extract of *Rosa centifolia* L. oil was prepared and analyses for its antimicrobial activity. A low effect was found against *Staphylococcus aureus*, a gram positive test organism by susceptibility disc method. 25% inhibition was found against *staphylococcus aureus* by the Durham's diffusion tube indicating antimicrobial properties with lower inhabitanace in plant flower.

**KEYWORDS:** *Rosa centifolia* L., N-Hexane, Antimicrobial, *Staphylococcus aureus*.

### INTRODUCTION

Some Historical evidence show that Rose oil is originated from Greece. Rose oil is the essential oil extracted from the Patel of *Rose centifolia* L.(Zargari et.al.1992).

Most species of flower have essential oil in addition to their antioxidant properties they posses antibacterial and antifungal activity. The flower contain camphor 41%, germacrene 16%, transpinocarveol 11% which were found to possess inhibitory activity against Gram positive bacteria and some Fungi (Juteac et, al. 2002).

Rose are the most popular and widely used medicinal plant all over the world. Rose plant originated from middle east and cultivated all over the world. (Krussman1981).

The most important component of Rose oil is Terpene, Glycosides, Flavonoids, Anthocyanin and n-Hexane (Almasirad et.al.2007, Schiber et.al. 2005).

Pharmacological activities of Rose oil evaluated by several in vitro and vivo (Maleev et.al.1972).

Essential Rose oil has been administered as aromatherapy so it demonstrated that Rose oil can be absorbed in to the body via the skin or the olfactory system (Dye 1997).

Many studies view that olfactory stimulation by Rose oil could produced instant change in physiological parameter including muscle tension, blood presser, pulse rate, skin temperature, electro dermal activity and brain activity(Digo et. al.1998).Rose oil also showed beneficial effect in reducing menstrual pain and bleeding (Marzule et.al.2013).

The essential oil contain various component which impart the antimicrobial activity. Compound such as methyl pyrimidine, beta glucopyranosyltriene isolate from flower showed the antifungal and antibacterial activity against many gram positive and gram negative organisms.(Arjun et.al.2002). Such a compound has been investigated by the well agar diffusion medium method.

There is a great scope for the use of essential oil in various prepossess. The study of Essential oil of *Rose centifolia* L. flower show an antimicrobial activity, reveals that, many component explored in essential oil but to do a best exploration, a basic and practical study is required, the present studies are aim that the qualitative analysis on the antimicrobial studies of the extracted essential oil by flower petale,used Disc susceptibility method and Durham fusion tube method (for volatile compound).

### MATERIALS AND METHOD

The fresh *Rose centifolia* L. Flower were collected and then shade air dried. The essential oil were extracted using the solvent extraction method (Guenther 1972).

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Table 2: Effect of rose essential oil extract Disc and nHexane Disc on the test organism (Dif. Diffusion 1st<sup>st</sup> to 3<sup>rd</sup> inhibition obtain in mm).

Microorganism	Essential oil tube (24hrs)	nHexane Control tube (24hrs)
Staphylococcus aureus ATCC 25923	—	—
Staphylococcus epidermis	14	
Pseudomonas aeruginosa	16	
Escherichia coli ATCC10148		

From table 2: standardised disc diffusion method obtained against four test microorganism. Result found with in 24 hours, the hexane disc are put as control can not reach up to inhibition against four microorganism. The solvent does not found any antibacterial activity. From the data of table we observed that the essential oil show an inhibitory zone diameter 16mm against Pseudomonas and very low activity found against Staphylococcus epidermis zone of 14mm diameter. No activity was found against the other microorganism.

### CONCLUSION

The most bioactive compound found in plant of Rose centifolia L. such as Alcohol, Alkaloids show the antimicrobial activity. But in flower essential oil of Rose centifolia L. bioactive Alcohol absent and thus none of the other compound possess effective for antimicrobial activity. Because alkaloids Liriodenine present reported having anti microbial activity (Khan et.al. 2002).

### REFERENCES

- Eris, R. Ulusoy S.2013.Rose, Clove, Chamomile. Essential oil and pine Turpentine Inhibit Quorum sensing in Chromobacteriumvialaceum and Pseudomonas aeruginosa. J. Essent oil, Bear PL. 16: 126-135.
- Zargari, A. 1992. Medicinal plant, 5<sup>th</sup> ed. Tehran: Tehran University Press, 280-284.
- JuteauMassoti, Bessiere V. and Dherbomez JM. 2002. Antibacterial and Antioxidant activities of Artemisia annua essential oil Fitoterapia, 73(6): 412.
- Krussman G. 1981.The complete book of Roses, Portland, Oregon: Timber Press.
- Almasirad, et.al. 2007. Composition of historical Rose oil sample (Rosa damascene Mill, Rosaceae), J. Essent. Oil Res.
- Schiber A. Mihalev K.,Berardini N., MollavP.,Carle R. 2005. Flavonal glycoside from distill petale of Rosa amascene Mill Z. Naturforsch C, 60: 379-384.
- Maleev, A., Neshtev G., Stoianov S., Sheikov N. 1972. The Uker protective and antiinflametary effect of Bulgarium rose oil. EKSP. Med. Morfol, 11: 55-60.
- Dye J.1997. Aromatherapy for women and childbirth, UK.Canial Company; Saffron Walden, 206: pp.
- Diego et.al.1998.positively affect mood, EEG. Patterns of alertness and math computation Int J. Neurosci, 96: 217-224.
- Van Toller S, Behan J, Howells P. et.al. 1993. An analysis of spontaneous human cortical EEG Activity to orders. Chem. Senses, 18: 1-16.
- Marzouk TMF, ET AL.2013The effect of aromatherapy abdominal massage on alleviating menstrual pain in nersing student: A prospective randomized cross-over study. Evid Based Complement Alternat Med. Article ID, 742421: 06 Page.
- Kim YJ; et.al.2011.Self aromatherapy massage of the abdomen for the reducing menstrual pain in nurse; a place bo- control clinical trial.Eur J. Integr Med. 3: e 165-e168.
- Arjun 2002. Antibacterial compound from Alangiam flower; Fitoteropia, 73(6): 128.
- Guenther E. 1972. "The Essential Oil" Vol. 1.2 and 5. Robert. Krieger Publishing Company.
- Jacques F. Acar 1980. Chapter 2 "Antibiotic and Laboratory Medicine", Edited, V L.orian, William and Wilcine Publication.
- Agnihotri S and Vaidya ABD 1996.Anovel approach to study the antibacterial properties of volatial component of selected Indian Medicinal hurbs. Indian Journal of Experimental Biology, 34: 172.
- Khan MR, kihara M. and Ômoloso AD.2002. Antimicrobial activity of champacafitoterapia, 73(7-8): 744.

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