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Pharmacognostical Research Study of Sesamum Indicum and Zingiber Offcinale as Multipurpose Skin Care

Md. Rageeb Md. Usman[1*], Punam Vasant Patil[2], Vandana Anil Mali[3]

[1*, 2]Department of Pharmacognosy, Smt. Sharadchandrika Suresh Patil College of Pharmacy, Chopda, Maharashtra, India
[3]Department of Pharmaceutical Chemistry, Sharadchandrika Suresh Patil College of Pharmacy, Chopda, Maharashtra, India

***Corresponding Author:**Dr. Md. Rageeb Md. Usman
*Department of Pharmacognosy, Smt. Sharadchandrika Suresh Patil College of Pharmacy, Chopda, Maharashtra, India

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Abstract:
For centuries, the natural oils have found their importance as a fragrance with a curative potential on the body, mind and spirit. These aroma molecules are very potent organic plant chemicals that make the surroundings free from disease, bacteria, virus and fungus Their versatile character of antibacterial, antiviral, anti-inflammatory nature along with immune booster body with hormonal, glandular, emotional, circulatory, calming effect, memory and alertness enhancer, is well documented by many scientists Many pilot projects and studies have been conducted on humans to decipher their nature and role with disease and disorder These oils are known for their energy specific character, as their potency is not lost with time and age. The stimulation properties of these oils lay in their structure which is closely in resemblance with actual hormones the penetration potential of these oils to reach the subcutaneous tissues is one of the important characters of this therapy. Their effects are also complex and subtle due to their complex structure and chemical properties. The mechanism of their action involves integration of natural oils into a biological signal of the receptor cells in the nose when inhaled. The signal is transmitted to limbic and hypothalamus parts of the brain via olfactory bulb. These signals cause brain to release neuron messengers like serotonin, endorphin etc., to link our nervous and other body systems assuring a desired change and to provide a feeling of relief. Serotonin, endorphin and noradrenalin are released from calming oil, euphoric, and stimulating oil respectively to give expected effect on mind and body.
Keywords: Sesamum Indicum, Zingiber Offcinale, Zingiber Offcinale, Anti-Bacterial

INTRODUCTION

The science of Ayurveda had utilized many Naturals oils to make cosmetics for beautification and protection from external affects the natural content of in the botanicals do not cause any side effects on human body; instead enrich the body with nutrients and other useful minerals. The natural oils and their products when used for their aromatic value in skin care preparation are termed as herbal. The increase demand for the natural products has created new avenues in cosmetics market. Herbal medicine have long history of use and better patient tolerance as well as acceptance medicinal plants

have a renewable source which is due only hope for sustainable supplies of cheaper medicines for the world growing populations. There are a number of Naturals oils that are used for their medicinal and therapeutic properties, Aromatherapy derived its name from the word aroma, which means fragrance or smell and therapy which means treatment. This therapy is a natural way of healing a person's mind, body and soul. Many ancient civilizations like Egypt, China and India have used this as a popular complementary and alternative therapy from at least 6 000 years. Aromatherapy has established itself for the treatment of various arrays of complications and conditions. Literature survey reveals that this therapy has gained a lot of attention in the late 20th century and is very popular in the 21st century too, and due to its importance, popularity and widespread use, it is recognized as aroma science therapy. The natural oils have gained their importance in therapeutic, cosmetic, aromatic, fragrant and spiritual uses. Aromatherapy uses natural oils, as the main therapeutic agents, which are said to be highly concentrated substances extracted from flowers, leaves, stalks, fruits and roots, and also distilled from resins. Natural oils are a mixture of saturated and unsaturated hydrocarbons, alcohol, aldehydes, esters, ethers, ketones, oxides phenols and terpenes, which may produce characteristic Odors. They are colourless pleasant-smelling liquids with high refractive index. These oils are so potent and concentrated that they work on pressure points and rejuvenate. The natural oils in plants are present indifferent areas like, pockets and reservoirs, glandular hairs, specialized cells, or even in the intercellular spaces. Essences evaporation from the plants, shields them from bacterial attack and a warming aura due to essences protects the plant from temperature fluctuations There are various methods by which they are administered in small quantity like inhalation, massage or simple applications on the skin surface and rarely, they are taken internally Inhalation and the external application of these oils for the treatment of mental and physical balance are the very basics of aromatherapy. The therapy of these oils is known to relieve the stress, rejuvenate and regenerate the individual for a next day's work. Olfactory nerves from nose to the brain are the site of action for these natural oils. These oils have well proven antibacterial, antibiotic, and antiviral properties and many published reports elsewhere as well as folkloric practitioners have suggested them to be useful in many other diseases like Alzheimer, cardiovascular, cancer and labour pain in pregnancy etc. There is an increased trend nowadays to use this therapy in the treatment of cancer and sleep disorder Their organic character and to act in a supportive manner with the body, provide a feeling of wellbeingness It was found that the locomotors activity of mice increased significantly by inhalation of rosemary natural oils, which are used in phytotherapy as activating and refreshing remedy for exhaustion. The use of aromatherapy in holistic medicine has taken a long leap within a couple of years On reviewing the literature on this therapy, it is found that numerous studies have been carried out to study the effects of this therapy on human brain and its

Table No.1 Plants used in aromatherapy

Natural oils	**Parts of Plant**
Bergamot, lemon, lime, sweet orange,	Fruit peel
Sea-buckthorn, mandarin	Fruit
Cinnamon	Bark
Citronella, lemongrass, petit grain,	Leaves
palmarosa, patchouli, hemp	Entire plant
Geranium, lavender, rosemary	Entire plant
spike lavender	Flowers
Ginger, vetiver	Roots
Jasmine, neroli (orange blossom),	Flowers
rose, ylang ylang	Flowers

Emotions. Its role in mood, alertness, and mental stress in healthy subjects was a topic of hot discussion among scientific community recently. Some researchers tried to investigate the effects on work ability, reaction time, and some spontaneous actions on the brain through electroencephalograph patterns and functional imaging studies this therapy was found to be superior when compared to synthetic Odors. Synthetic fragrances generally contain irritants, like solvents and propellants causing irritation in some people. According to aroma therapists, synthetic Odor does not match the importance of natural oils as they are deficient in natural or vital energy; however, this has been remained a matter of debate between Odor psychologists and biochemists.

Pharmacological actions of natural oils

Many natural oils were screened for variety of pharmacological potentials. Important pharmacological actions of natural oils are summarized in some of the pharmacological actions of natural oils are discussed below.

Antibacterial

Many natural oils were screened for their antibacterial activity against Gram-positive and Gram-negative bacteria along with antifungal properties. These natural oils are well studied for their antibacterial properties and beyond doubt they have shown some very promising results on salmonella, staphylococci and other oral pathogens. They can be very good alternatives for antibiotics if properly and thoroughly studied for these effects of there One such oil is Basil natural oil; this oil showed a good antimicrobial potential. It has bactericidal properties against Aeromonas, Hydrophile and Pseudomonas fluorescens the investigation of antibacterial effects was positive to prove its potential for oral bacteria like Fusobacterium nucleatum, Porphyromonas gingivalis, Streptococcus mutans, Actinobacillus actinomycetemcomitans, and Streptococcus sobrinus. Manuka oil was most potent among the eucalyptus oil, rosmarinus oil, lavandula oil and tea Jojoba Oil Jojoba is native to Mexico and the American Southwest, where its oils have been extracted from its seeds and used medicinally by Native American tribes. “I don't see much in the way of allergic reactions to [jojoba], either. I haven't seen that be as popular [as some other natural oils], so I just don't have a lot of experience with it, researchers found jojoba oil may have anti-inflammatory and wound-healing effects, among other skin benefits. tree oil for antibacterial potential From 15 genera of oral bacteria, 161 isolates were sensitive to Melaleuca alternifolia (tea tree) oil, indicating its health care properties for oral hygieneStaphylococcus epidermis, Hedychium gardnerianum and Pittosporum undulatum (P. undulatum) were susceptible to natural oils from the leaves of P. undulatum and Hedychium gardnerianum with the highest activities against Staphylococcus aureus and Staphylococcus epidermis. P. undulatum additionally, have good antithrombin activity also.

Antifungal

alternifolia (tea tree) oil tested positive for its all-constituents Melaleuca for in vitro antifungal activity except beta-myrcene. Hammer et al. identified that most of the components of tea tree oil had wide range of fungicidal potential, especially against dermatophytes and filamentous fungi [68]. In one of the reports, the germinated Aspergillus niger conidia was more susceptible to non-germinated one. The natural oils obtained from the fresh leaves of Melaleuca ericifolia (M. ericifolia), Melaleuca armillaris (M. armillaris), Melaleuca leucadendron (M. leucadendron) and Melaleuca styphelioides exhibited good activity against Asper- gillus nigerMany plants like M. piperita, black mustard (Brassica nigra), Angelica archangelica, Cymbopogon nardus, Skimmia laureola, Artemisia sieberi and Cuminum cyminum have been tested positive for their antifungal activity. They are in the initial phase of clinical trials and if the results are as per the expectation, they will be a very good alternative for existing antifungal drugs which are not frequently used for their

Antiviral

The antiviral activity evaluated by Deans and Ritchie for the natural oils of M. ericifolia, M. leucadendron, M. armillaris and Melaleuca styphelioides on kidney cells of African green monkey through plaque reduction assay on herpes simplex virus type 1, gave the remarkable

Anti-oxidant

The natural oil from seeds of Nigella sativa L. is a potent antioxidant in vitro, with effective hydroxyl radical scavenging activity. Kanuka (Kunzea ericoides), Manuka (Leptospermum oparium) and Leptospermum petersonii possess good anti- bacterial activity and antioxidant properties. The natural oil from the M. armillaris has marked antioxidant potential; it alters the parameters of superoxide dismutase, improves vitamin E and vitamin C concentrations [28].

The free radicals produced during inflammation, can induce gene mutations and posttranslational modifications of various proteins. If not, remove may turn injurious radicals to the whole system. This mechanism is generally countered by antioxidant properties of compounds. Various plants like Thymus vulgaris, C. Limon, E. globulus and Cupressus sempervirens have shown their anti-inflammatory effects on animal study

Insect/mosquito repellant action

Insect repellency/toxicity results were promising from the natural oils of Nepeta parnassica, on the Culex pipiens molestus.

Best natural oils for sensitive skin Sensitive

Skin can be either dry or oily, and can sometimes occur alongside allergies, eczema, and other skin conditions. Sensitive skin is a lay term rather than a medical diagnosis. It is generally used to describe skin with reduced tolerance to the application of cosmetics and personal care products. In surveys, approximately 50% of women and 40% of men may report having sensitive skin. If you have sensitive

The following natural oils use in skin care preparation

Coconut Oil

Coconut oil is easily absorbed into the skin and is known to have many health benefits, including those from vitamins E and K, as well as its antifungal antibacterial and antiviral properties. Coconut oil also reducing inflammation, which may result from UVB rays. Moisturizing dry skin, including in people with condition such as eczema. “In general, coconut oil is a great option for almost everybody, except if you have oily skin and your acne prone, I would not use it on the face.

Olive Oil

Olive oil contains vitamins A, D, E, and its heavy consistency, it is a great choice for an allbody application, and you may even want to try an olive oil cleanser or bar of soap for a clean that won’t dry out your skin

Sunflower Seed

Oil Sunflower seed oil is widely available, high in vitamin E, and absorbs easily into the skin, making it an excellent choice as a natural moisturizer. Found that in infants sunflower oil better protected the skin’s barrier and didn’t cause or aggravate atopic dermatitis (a form of eczema), as compared with olive oil

Shea Butter

Derived from the nuts of the African Shea tree, Shea butter is a tallow-like substance that is commonly found in a solid form, but it melts at body temperature, and is sometimes used as a

moisturizer and hair product, Unrefined, organic Shea butter can also be combined with olive oil or coconut oil to create a smoother texture for application.

Jojoba Oil
Jojoba is native to Mexico and the American Southwest, where its oils have been extracted from its seeds and used medicinally by Native American tribes. “I don't see much in the way of allergic reactions to [jojoba], either. I haven't seen that be as popular [as some other natural oils], so I just don't have a lot of experience with it, researchers found jojoba oil may have anti-inflammatory and wound-healing effects, among other skin benefits.

Almond Oil
Made from pressed raw almonds, almond oil is full of health benefits, such as vitamin E, zinc, proteins, and potassium. It has a lighter texture than olive oil and Shea butter, which many find appealing to use on the face. Sweet almond oil can result in allergic responses, so she recommends avoiding it if you have sensitive skin

Natural oils for acne-prone skin
With acne, it’s crucial that you remove excess oils and bacteria without drying the skin, as this can lead to increased oil production. Inflammation can be another contributing factor to acne breakouts. Both rosemary and frankincense are known for treating acne by reducing microbial and inflammation. Clary sage is also used for acne and on oily skin. The following oils may also help acne-prone skin types.

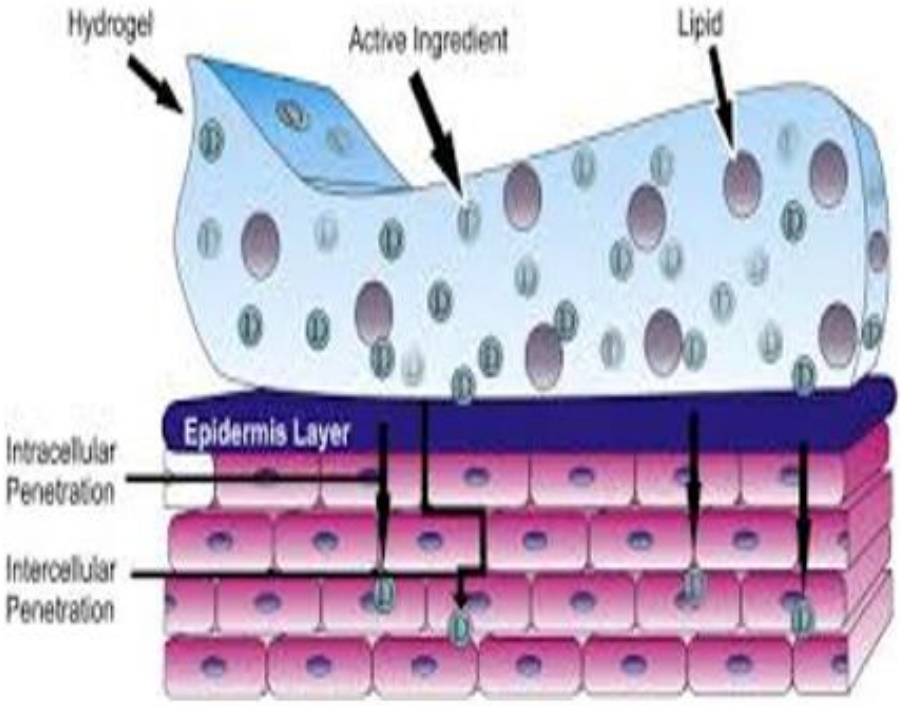
Natural oils for a skin
rash Certain natural oils also have the ability to balance out moisture and alleviate itchiness of skin rashes. These include atopic dermatitis (eczema) and psoriasis. One 2015 study Trusted Source found that combining thyme with lavender helped treat eczema in mice, leading researchers to believe that this natural oil blend could benefit humans with the skin disease, too

Natural oils for pigmentation
Whether you have acne scars or age spots from sun exposure, certain natural oils may help even out your skin tone when used as a serum.

Grape seed Oil
Containing vitamin E and natural fatty acids, grape seed oil is lightweight compared with other natural oils. It also offers antioxidant, antimicrobial, and anti-inflammatory properties, grape seed oil is less commonly used for skin than the other oils, but she’s optimistic about its potential use for this

Emulgel
Emulgel is the promising drug delivery system for the delivery of hydrophobic drugs. Emulgel, an interesting topical drug delivery system, has dual release control system, i.e., gel and emulsion. Emulgel have several merits like greaseless, easily spreadable, easily removable, emollient and transparency. Emulgel is oil in water or water in oil emulsion carrying drug to be incorporated in gel base to obtain jellified emulsion. Emulgel shows the controlled and better release effect of drug by virtue of combined effect of gel and emulsion with increased stability. Emulgel is prepared both in oil- in- water and water- in- oil type emulsion mixed with gel. Oil- in- water type is used for lipophilic drugs and water- in- oil type is used for hydrophobic drugs’ delivery. The emulgel have many advantages like thixotropic, greaseless, easily spreadable, easily removable, emollient, non-staining, biofriendly, pleasing appearance, transparent and cosmetically acceptable, which also have a good skin penetration and long shelf- life. The emulsion and gel preparations have their own properties. But the gels show some limitations as hydrophobic drug delivery. This limitation is

overcoming by emulgel. By the use of gelling agent classical emulsion can be converted in to emulgel some factors will affect the absorption of drug through every route. Some factors like skin thickness, skin pH, hydration, inflammation, partition coefficient, molecular weight and other factors affect topical route. The topical delivery system has many advantages and also disadvantages. The main advantage is avoidance of first pass metabolism and gastrointestinal incompatibility. Nearly all topical preparations are applied on the skin. They penetrate



through the skin and give the action in right site The skin is the body's largest organ, made of water, protein, fats and minerals. Your skin protects your body from germs and regulates body temperature. Nerves in the skin help you

benefits naturals oils

- For A Squeaky Spotless Skin: gives you clear skin, free from dirt, oil, and sweat.
- Frees Your Skin From Flakes: Blistered skin looks hideous!
- Helps In Removing Dead Cells
- Adds Glow To Skin
- Removes Dark Patches
- Removes Acne Scars
- Prevents Ingrown Hair
- For Smooth Skin
- Improve the Smoothness Of Your Skin
- Promotes Clear Complexion

NEED

Emulgel Containing Natural oils are induced with the goodness of natural ingredients and herbs which are a grey way to tackle skincare issues. They help in reduction of scars, stretch marks and are also beneficial in reducing signs of ageing like wrinkles and fine lines. It tightens the skin thus reducing wrinkles and repairs the skin, helping in fighting from sun damage as well. Emulgel Containing Natural oils tend to give a soothing and relaxing sensation to the skin, helping our skin rejuvenate. Known for their antiseptic and aromatic properties, ingredients like lavender, orange,

lemon, etc. are a great pick for a de-stress skincare routine as they have soothing fragrance and also help in giving natural moisture to the skin.

EXPERIMENTAL WORK

Preparation of Emulgel

Emulgel are prepared by incorporating gel and emulsion. The emulsion and gel are prepared separately and mixed together. For preparing emulsion, aqueous phase and oil phase are taken separately and mixed together. Then the gel is prepared by using gelling agent. After preparing gel and emulsion, they are mixed with gentle stirring. The chemicals are used as oil phase are Water and alcohol are used as aqueous phase

Preparation of Natural oils emulgels

Emulgels were prepared by using varying concentration of penetration enhancers (Sesame oil, Ginger oil,) surfactants (Tween 80) shown in table 2. For formulating Natural oils emulgel, weight of each ingredient was adjusted according to their respected HLB (Hydrophillic-Lypophyllic Balance ratio). The gel phase was prepared by mixing the required weight of carbopol-940 in sufficient quantity of distilled water on continuous stirring to make lumps free. The oil phase of emulsion was formed by mixing required amount of all Oils (penetration enhancers) one by one in oil phase on continuous stirring. Oils was dissolved in methanol in separate volumetric flask and then mixed with oil phase on continuous stirring. Aqueous phase of emulsion was prepared by mixing tween 20 in small amount of distilled water. In required amount of propylene glycol (permeation enhancer), in water DMDM Hydentoin was added as preservative. Mixed this solution with aqueous phase on continuous stirring. Both oil and aqueous phases were heated separately at 70-80ºC for 5-8 minutes and then cool them at room temperature. After cooling, oil phase was added slowly in aqueous phase on continuous stirring to make O/W emulsion (having HLB value 8.7-8.8). It is necessary to add these phases at room temperature because at high temperature droplets of oil will coalesce and at very low temperature, they will freeze. Mixed this O/W emulsion into gel phase on continuous stirring by aid of magnetic stirrer. pH was adjusted at 6.8 by adding Triethanolamine drop wise and required weight was obtained by adding distilled water on continuous stirring until required consistency was attained. These emulgel formulations were stored in aluminum collapsible tubes for evaluation

Physical evaluation of Natural oils emulgel

Physical evaluation of natural oil emulgel formulations including homogeneity, transparency, viscosity, texture, drug content and pH were inspected

Antibacterial activity

The all formulated emulgels were evaluated for their antibacterial activity through Ditch plate Technique Nutrient agar media was used for bacterial growth to see the bactericidal/bacteriostatic activity (Staphylococcus epidermidis). Then took the fresh pus from face pimple of any volunteer via the cotton and applied this pus by sterilized loop onto agar plate. Observed the bacterial growth at these plates after 24 h at 25ºC±0.5. Then added optimized emulgel (1gm) in this agar plate. Now streak across the agar at right angle to the edge of plate and incubate for 24 h at 25ºC±0.5. By using crystal violet dye, checked microbial growth under microscope.

RESULTS AND DISCUSSION

Determination of Natural Oils Solubility and partition coefficient (Ko/w)

The solubility of oils in n-hexane was 0.00407±0.25mg/ml, 0.00185±0.45mg/ml in methanol, 0.00084±0.67 mg/ml in PBS (at pH 6.8).

The Partition coefficient (Ko/w) for oils was 3.6. From this value, it was shown that given drug comprised of about sufficient lipophilicity that is beneficial to develop the topical drug.

Physical evaluation of Natural Oils emulgel formulations

Physical characteristics like homogeneity, texture, pH, phase separation, viscosity and

Smoothness of all prepared Natural Oils emulgels were observed. Results have shown that all oils emulgel formulations were smooth, good homogeneity, transparent and lumps free. pH value of all formulations was lied in range of 6.7-6.8 ± 0.1, considered suitable for skin application. All formulations have good consistency as the viscosity of these has lied in range of 640-671*103 (cps). Spread ability values of all-Natural oil emulgel formulations were in range of 0.034±0.1 to 0.046± 0.1 g.cm/s while extrudability values of these formulations were lied in range of 0.95± 0.01 to 1.31 ± 0.01g/cm. Both these parameters have indicated that EG4 easily spread (0.042±0.1 g/cm) on applying small amount of the shear stress and having good extrudibility value (1.27± 0.01) proving its excellent consistency as compared to others. The changes were observed on human volunteers for any skin irritation/lesion/abrasion after each day and have reported no any lesion, skin irritation or abrasion on skin, confirmed its suitability to skin. The physical evaluation has revealed good homogeneity, transparency, viscosity, extrudibility, spreadability and stability for prolonged time period. The optimized Natural Oils emulgel has no skin irritation and has shown excellent results for skin care. The provided results are in accordance with previous reports.

Table.No.1: Evaluation Parameter of Natural oil

Sr.no	Parameters	Observation
1	**Color**	Clear Translucent Gel
2	**Odor**	Aromatic
3	**Consistency**	Good
4	**pH**	pH 5.0
5	**Viscosity**	293.15-343.15*
6	**Irritability**	Non-irritant

Antibacterial activity

The result for antibacterial activity of optimized EG4 was 85% inhibition that confirmed its antibacterial effectiveness to skin against microbes. The optimized emulgel has strong antibacterial and antimicrobial activities, so considered safe for transdermal use. The similar findings have been reported in previous studies of herbal oils. Natural oil is a source of polyunsaturated fatty acids such as alpha-linoleic acid and related chemicals in Natural oil seem to decrease inflammation. Natural Oils have also good analgesic and anti-inflammatory activity due to the presence of vitamin C. That is why optimized oils emulgel formulation has thought to be useful for rheumatoid arthritis and other inflammatory (swelling) diseases as literature supported.

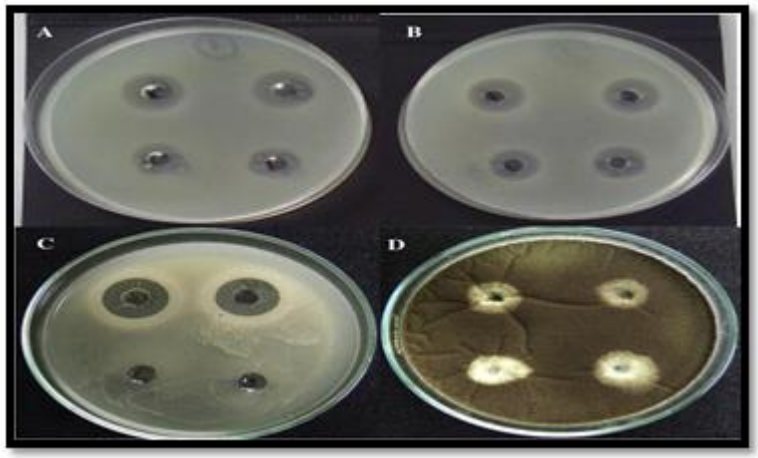


Fig.No.1: Antibacterial activity

CONCLUSION

In topical drug delivery system, a large number of formulations are used, but they also have their own disadvantages. Most of these disadvantages are overcome by emulgel preparation. The emulgel have proven as most convenient, better, and effective delivery system through the project. Incorporation of emulsion into gel makes it a dual control release system to further solve the problems such as phase separation, creaming associated with emulsion, and improvement of stability. Emulgel needs constituents as like the emulsion and gel preparation.

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