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Drugs in Ayurveda for Herbal Sanitizers: A Critical Review

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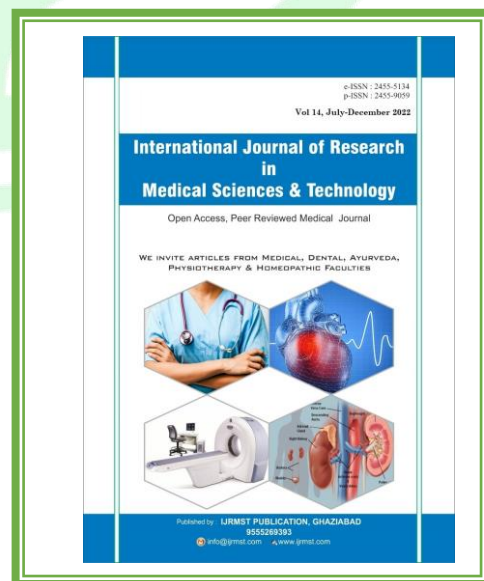
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ABSTRACT

As the Coronavirus (Covid-19) is spreading rapidly worldwide. The symptoms include respiratory illness, commonly fever, tiredness, dry cough, breathlessness & chest tightness. There are many ways to prevent the Coronavirus disease (Covid-19) pandemic, such as maintaining social distancing, wearing a protective mask, avoiding getting outside the house, avoiding touching any surface, avoiding touching on face, and one of the best measures is to maintain the hand hygiene. Hand hygiene is the best tool in preventing the infection caused by the disease. It is a simple, affordable and very effective method to achieve this use of hand sanitizer is useful and very important measure. In recent weeks, as the death toll has climbed & the panic surrounding /coronavirus has mounted. The need of hand sanitizers has greatly increased. The purpose of this study is to prepare the herbal hand sanitizer incorporating the leaves extracts of *Ocimum sanctum* (tulsi), *Azadirachta indica* (neem), Citrus lemon, Aloevera (kumari), Eucalyptus (tailparni), Ethyl alcohol and water. The properties and chemical composition of each drug and the method of preparation of Herbal Hand sanitizer have been included.

Keywords: Antimicrobial; Antiviral; Antiseptic; Ethyl alcohol; Hand sanitizers; Infection.

INTRODUCTION

Corona virus disease (Covid- 19) is an infectious disease caused by newly discovered Coronavirus which is spreading rapidly worldwide. The symptoms include respiratory illness, commonly fever, tiredness, dry cough, breathlessness & chest tightness. Most people recover from the disease without any special treatment. More rarely the disease can be serious & even fatal. No vaccine has developed till date. All that one can do for being safe and unaffected is following the prevention methods. One of the important

methods of prevention is hand hygiene. That is washing hands frequently or by sanitizing the hands is the best stool of prevention of Covid-19. Hand Sanitizer is the real need of this situation. Hand sanitizer are believed to be effective methods to mitigate the risk of catching & spreading the Covid-19. In recent weeks, as the death toll has climbed & the panic surrounding coronavirus has mounted. The need of hand sanitizers have greatly increased.

The purpose of the this study is to review information regarding preparation of the

herbal hand sanitizer incorporating the herbs like ocimum sanctum (tulsi), Azadirachtaindica (neem), citrus lemon & Eucalyptus oil. Alchemy of Herbs, Wikipedia. Dravyagunavijnyan by Prof. Dr. A.P. Deshpande, and articles were referred for this literature study. The paper explores the advantages of the combination of the drugs and content used for herbal hand sanitizer.

DEFINITION & USES OF HAND SANITIZER

Hand sanitizer is a liquid or gel generally used to decrease infectious agents on the hands. Hand sanitizers are also called hand antiseptic or hand rub agents applied to the hands for the purpose of removing common pathogens. (Hand Sanitizer definition in English Oxford Dictionaries 2017) Although the effectiveness of hand sanitizer is variable, it is employed as a simple means of infection control in a wide variety.

Herbal hand sanitizers are more cheaper than other market sanitizer. They are made by natural herbs which are present almost everywhere in the surroundings & are natural and safe. Other market sanitizers can cause the dryness of the hands on the other hand herbal hand sanitizers does not causes the dryness of the hands.

COMPOSITION WITH INGREDIENTS:

This herbal hand sanitizer includes the following the ingredients.

1. Deionized water – 30.00 %
2. Ethyl alcohol – 61.00 %
(Reynolds, S.A., Levy, F., Walker, F.S., 2006)
3. Ocimum sanctum (*tulsi*) leaf extract – 2.00 % .
4. Azadirachtaindica (*neem*) leaf extract – 1.00 % .
5. Lemon (*Matulunga*) – 2.00 % .
6. Aloe vera(*kumari*) – 1.00 % .
7. Eucalyptus oil(*tailparni*) – 3.00 % .

The properties of above each drug mentioned above are explained in the following tables i.e. **Table no.1** (Deshpande,A.P., Ranade,S., 2014- a), (Kothari,S.K, Battacharya,A.K, Ramesh,S., Garg,S.N., Khanuja,S.P.S, 2005), (Mittal R, Kumar R, Chahal HS, 2018), **Table no.2** (Deshpande,A.P., Ranade,S., 2014 - b), (Sidhu,O.P., Kumari,V., Bhel,H.M., 2004), (Singla,D., Saini,K., 2019), **Table no.3** - (Deshpande,A.P., Ranade,S., 2014 - c), **Table no. 4** - (Deshpande,A.P., Ranade,S., 2014-d), (Surjushe,A., Vasani,R., Saple,D.A., 2008) & **Table**

no.5 - (Deshpande,A.P., Ranade,S., 2014),
(Ayepola,O., Adeniyi,B.a., 2008).

METHODS OF PREPARATIONS OF 1 LITRES OF HERBAL HAND SANITIZER –

1. Take 300 ml of water.
2. Add 20 ml of tulsi leaves extract.
3. Add 10 ml of neem leaves extract.
4. Add 20 ml Of fresh lemon juice.
5. Then boil the solution.
6. Add 40 ml of eucalyptus oil.
7. Add 610 ml of ethyl alcohol .

ADVANTAGES OF HERBAL HAND SANITIZER-

- It is cheaper than the other market hand sanitizers.
- All contents are easily available everywhere in the surrounding throughout the year.
- The method of preparation is more easier
- It has antimicrobial, antiviral, antibacterial and antiseptic properties.
- Soothes to hand

DISADVANTAGES OF HERBAL HAND SANITIZER –

Validity has certain limitations. Research must be carried out for their standardization.

DISCUSSION

The literature of herbal hand sanitizer explores the mechanism of action of their content. The ingredient of herbal has sanitizer are extract of ocimum sanctum (*tulsi*)- it has an active components which acts as natural antimicrobial agent (Mittal R, Kumar R, Chahal HS, 2018). Azadirachtaindica (*neem*)- antibacterial and antiviral properties (Singla,D., Saini,K., 2019). Citrus lemon (*Matulunga*) - antiviral and immune booster. Most importantly it acts as a preservative (Here by Design 2018). Aloevera (*Kumari*) - Aloeverahas hydrating properties, hence help to keep the skin moistened (Surjushe,A., Vasani,R., Saple,D.A., 2008). Eucalyptus (*Tailparni*) oil - It has antibacterial properties (Ayepola,O., Adeniyi,B.a., 2008), Water and Ethyl Alcohol. The individual drug profile shows some common properties. The herbal remedy is capable of eliminating the coronavirus compound from the hand. The properties of each drugs is explained according to

modern science as well as by *Ayurvedic* principles and properties .

CONCLUSION

This paper concludes that the ingredients use for the herbal hand sanitizer possesses the antiviral, antiseptic, antimicrobial & antibacterial properties hence can be used safely and effectively as the preventions of Covid – 19 disease.

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TABLES:

Table no.1 -Qualities of *Ocimumsanctum(tulsi)* leaves

Family	Chemical composition	Attributes	Use in herbal hand sanitizer
Labiatae	Phytochemical constituents of tulsi are oleonic acid, ursolic acid, eugenol, carvacrol, rosmarinic acid, linalool, beta – caryophyllene.	<i>Guna – laghu, snigda, teekshna.</i> <i>Rasa – katu, tikta.</i> <i>Vipak – katu.</i> <i>Virya – ushna</i>	it has an active component which acts as natural antimicrobial agent like eugenol., linalool and rosmarinic acid.

Table no .2 -Qualities of *Azadirachtaindica (neem)*leaves

Family	Chemical composition	Attributes	Use in herbal hand sanitizer
meliaceae.	nimbinin, nimbic acid, nimbidin, azadirachtins, nimonol, quercetin, beta – sitostreol.	<i>Guna – laghu, ruksha.</i> <i>Rasa – katu, tikta, kashay.</i> <i>Virya- sheet</i> <i>Vipak- katu</i>	its contents like quercetin, beta – sitosterol has antibacterial and antiviral properties.

Table no.3 - Qualities of Lemon (*Matulunga*)

Family	Composition	Attributes	Use in herbal hand sanitizer
Rutaceae.	Lemon is a rich source of vitamin c, terpenes, tannins, citric acid.	<i>Rasa- amla.</i> <i>Guna – teekshna.</i> <i>Virya- ushna.</i> <i>Vipak–amla.</i>	Vitamin C is an antiviral and immune booster. Most importantly it acts as a preservative.

Table no . 4 – Qualities of Aloe vera(Kumari)

Family	Chemical composition	Attributes	Use in herbal hand sanitizer
Liliaceae	Barbaloin, aloB-barbaloin, emodine	<i>Rasa – tikta.</i> <i>guna – guru, picchil.</i> <i>Vipak – madhur.</i> <i>Virya–sheeta.</i>	Aloe vera has hydrating properties, hence help to keep the skin moistened

Table no.5 - Qualities of Eucalyptus(*tailparni*)oil

Family –	Chemical composition	Attributes	Use in herbal hand sanitizer
Myrtaceae	Cineole, citronellol, eucamelol, terpinene. alpha – terpinol.	<i>Rasa – katu, tikta, kashay.</i> <i>Guna- laghu, snigdha.</i> <i>Virya- katu.</i> <i>Vipak- katu</i>	Eucalyptus essential oil supports the respiratory system .it has antiseptic properties. It gives relief from cough, clears the chest & breathing problems. It has antibacterial properties.