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## **Evaluation and Formulation of Herbal Hand Sanitizer**

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### **ABSTRACT :**

In most contexts, hand sanitizer is a liquid gel or foam that is used to eliminate various viruses, bacteria, and microbes on the hands. Hands are washed with soap and water in most cases. The primary goal of making a poly herbal hand sanitizer is to clean the Hand OR Hand Hygiene. Hand sanitizer is an alternative to soap and water hand cleansing. It is a principle that can be used to prevent, control, and reduce any acquired infection. Hand sanitizers can break the chain of microorganisms and bacteria spreading from one part of our body to another. Hand hygiene is crucial and one of the most significant procedures in food production, food service, and in the preparation of homes and other day care facilities. Hand sanitizer is the most significant strategy for preventing the transmission of hazardous bacteria and illnesses, as well as keeping the skin safe from harmful microorganisms and preventing the development of many infectious diseases. Physical properties of the formulation were assessed. These ingredients, in combination, are certain to act as an excellent hand sanitizer.

Keywords: Antimicrobial Agents, Herbal Extracts, Herbal Hand Sanitizer, Hand Hygiene

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### **INTRODUCTION:**

Disease-causing bacteria, viruses, and other microorganisms are transmitted mostly through the hands. Hand cleanliness is the most critical step in preventing the spread of dangerous germs and illnesses. To keep the Hand safe from hazardous microorganisms and to prevent illness from spreading. Hand washing is a crucial precaution to take. Instead of using a synthetic preparation, the goal of this study is to make and test a poly herbal hand wash made from readily available plants. Hand sanitizer is an antimicrobial that can be used in addition to soap and water for hand washing. Hand sanitizers come in a variety of forms, including gel, foam, and liquid solutions. Hand sanitizers kill microorganisms chemically, similar to how disinfectants kill bacteria. Microorganisms on surfaces in the environment Alcohol is a key element in hand sanitizer, and A thickening agent, humectants, and other inactive substances are included. Alcohol-based hand sanitizers are quite effective. When compared to soaps, it is more effective at killing microorganisms. All hand sanitizers need to be used with a In the United States, this is known as the "national drug code."

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### **HAND SANITIZER APPLICATIONS:**

These are antiseptic products that are used to prevent the spread of skin infections and germs. Alcoholic hand sanitizer for a fraction of a second after application, destroys 99 percent of bacteria on hands, resulting in less skin dryness and more moisture is left behind.

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### **WHEN DO I NEED TO USE A SANITIZER?**

Prior to, during, and following food preparation, Before and after eating meals, as well as before and after caring for someone who is unwell and vomiting, Before and after treating a cut or wound, going to the bathroom, handling an animal, or feeding an animal animal feces, after handling pet food or treats, or if your hands are clearly soiled after touching garbage

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### **HAND SANITIZER WITH AN ALCOHOL BASE:**

If soap and water are not available before and after visiting friends or loved ones in a hospital or nursing home, easily accessible Use an alcohol-based hand sanitizer that contains at least 60% alcohol and then wash your hands. As quickly as possible, use soap and water. After blowing your nose,

coughing, or sneezing, you should promptly wash your hands. To avoid spreading germs, wash your hands with soap or an alcohol-based hand sanitizer. When you're in a corona, you're surrounded by other people, Hand sanitizer should be used in this case.

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### VARIOUS INGREDIENTS AND THEIR IMPACT:

As a solvent and antiseptic, water is employed. Humectants based on glycerine. Perfume is a flavor enhancer. Microorganisms are prevented by using a preservative. As a thickening agent, Carbapol 940 is used. Triethanolamine is a surfactant and emulsifier. Detergent and emulsifier polylobate 20. Lemon extract has antibacterial and antiviral properties.

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### PREPARATION METHOD:

Maceration technique is used to make ethanolic extract of *Andrographis Paniculata*, ginger, and lemon. All other ingredients, except Triethanolamine, are added to water and thoroughly mixed with a mechanical stirrer. The extracts were then added and mixed in. Then Triethanolamine and perfume were added, followed by alcohol to make up the volume.

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### PARAMETERS OF EVALUATION:

**Colour:** It was decided on the basis of color.

**Odour:** It was manually determined.

**pH:** A pH meter was used to determine the pH.

**Clarity:** The purpose of the clarity exam was to assess visually, there is a presence of particle debris.

**Dirt dispersion test:** In a big test tube, two drops of the produced sanitizer were added to 10 mL of distilled water. One drop of India ink was added to this solution, and the test tube was sealed and shook ten times. The rubric indicates the amount of ink in the foam, such as None, Light, Moderate, or Heavy.

**Antibacterial testing of formulated hand sanitizers:** - Antimicrobial testing of the created formulation of each polyherbal hand sanitizer was performed using the disc diffusion method against the selected organisms. The antibacterial activity of each designed sanitizer were tested using 5 liters of each. The plates were incubated for 24 hours at 37°C, and the zones of inhibition were measured. For accurate results, all of the tests were repeated three times.

**Data analysis:** All tests were carried out in triplicate, and the results were expressed as Mean standard deviation.

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### Hand sanitizer advantages

- It takes less time to do laundry than it does to do it by hand.
- To kill bacteria on your hands, act soon.
- Easier to use than sinks.
- Reduce the number of microorganisms on your hands.
- Antimicrobial resistance should not be encouraged.
- Soap and water are less irritating to the skin.
- Some even help to improve skin health.

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### Hand sanitizer disadvantages

- Hand sanitizer has been shown to be effective in destroying bacteria.
- It can kill bacteria, but there are certain drawbacks to using it. Hand sanitizer overuse can cause dry, cracked skin.
- As well as flaking and redness or discolouration If it's swallowed or goes into the eyes, it can be dangerous.

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### FINAL REMARKS:

Hand sanitizer can be made with the ingredients listed above. More research is needed to screen the antibacterial properties of this hand sanitizer to those of other hand sanitizers on the market. It is derived from a variety of sources. Herbs are very beneficial agents that may be used as hand sanitizers with less negative effects, according to studies.

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**Reference**

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1. PalakVyaset al. Antimicrobial Activity of Ayurvedic Hand Sanitizers. International Journal of Pharmaceutical & Biological Archives. 2011; 2(2):762-766.
2. 3. Burke JP. Patient safety: infection control-a problem for patient safety. N Engl. J. Med. 2003; 348: 651-656.
3. MondalSunanda, Kolhapure S.A., Evaluation of the antimicrobial efficacy and safety of Pure Hands herbal hand sanitizer in hand hygiene and on inanimate objects. The Antiseptic. 2004;101(3): 112-120.
4. Mackintosh CA, Hoffman PN. An extended model for transfer of micro-organisms via the hands: Differences between organisms and the effect of alcohol disinfection. J Hyg (Lond) 1984;92:345-5
5. Guide To Local Production : WHO-recommended Handrub Formulation