



CHEMICAL FREE HAND SANITIZER -TO PREVENT THE SPREAD OF INFECTIONS DURING PANDEMIC

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ABSTRACT-

The emergence of the new contagion, SARS-CoV-2, has posed unknown difficulties to public health around the humankind. A potent and simple system for degrading transmission of infections in public or healthcare settings is hand hygiene. Unfortunately, little is comprehended regarding the efficacy of hand sanitizers against SARS-CoV-2. Hand hygiene is an integral factor to help or minimize the counterpane of infections. The capability to prepare a chemical-free hand sanitizer (CFHS) with antimicrobial properties is pivotal, specifically during afflictions, when there are high demands and a low force chain for ethanol and isopropanol. The ideal of this study was to prepare CFHS gels grounded on natural requirements that contain essential oils (EOs) that would be effective against a broad diapason of pathogens. The outcomes displayed that the organoleptic characteristics of all set hand sanitizer gels were considered respectable. The antimicrobial effectiveness test demonstrated that the set hand sanitizer gels had antimicrobial conditioning against different gram-positive and gram-negative bacteria. The maximum antibacterial effect was observed with aloe vera gel and required oils, which warrant exertion against the bacteria and contagion. While chemical free hand sanitizers showed effectiveness against all microorganisms. The lemon oil in hand sanitizer displayed the least antimicrobial effectiveness.

Clove oil didn't produce any signs of skin vexation. So, these chemical free hand sanitizers are the better relief of alcohol- grounded sanitizers which are fluently available and are healthy for our skin.

KEY WORDS-

Hand sanitizer, microbes, infections, essential oils, antimicrobial, chemical-free, pandemics, organoleptic, hand hygiene

INTRODUCTION-

Substitute infections, bacterial or viral, have frequently raised expressive pitfalls to public wellness across the sphere. One of these dangerous pathogens is rigorous acute respiratory pattern corona virus 2 (SARS-CoV-2), which is famed to effect corona virus disease 2019 (COVID19) that was publicized a global epidemic by the World Health Organization (WHO) at the start of 2020. After its detection in Wuhan in the month of December 2019, greater than 150 million verified cases have passed worldwide by April 2021. The preventative protocols to make out with COVID-19 are just probative to minimize the spread of this disease as the smart approach. habitual and dependable hand washing is one of the numerous approaches espoused to head off the transmission of the contagion.

Hand hygiene using detergents or hand sanitizers is the first- line self-protective expedient to battle against COVID-19. Following the outbreak of COVID-19, alcohol- based hand sanitizers (ABHS) have become a common selection to prevailing hand washing in healthcare and neighborhood ambient as a precautionary implement, causing an increased alcohol demand. Chemical free hand sanitizer phrasings are prepared from natural constituents Aloe vera gel, Eucalyptus oil, clove oil, peppermint oil, lemon oil which was estimated, and they're ignitable, efficacious. These constituents are also extensively available in the market, which make them fluently accessible. The use of aloe vera gel as the hand sanitizer vehicle was due to its natural moisturizing and origin- braking capacities, as well as the capability of constraining some bacterial strains. These formulated AFHS gels are aimed to control the spread of co-infections during pandemics.

MATERIALS-

1. Aloe vera gel
2. Eucalyptus oil
3. Lemon oil
4. Clove oil
5. Peppermint oil
6. Distilled water.

These materials were purchased from ayurvedic shop in secundarabad.



METHODOLOGY-

Take 750ml of sterile water in the beaker and add 250ml of Aloe vera gel into the beaker which is already containing sterile water. Add 20 drops of Eucalyptus oil to the beaker, Add 20 drops of clove oil into the beaker, Add 10 drops of peppermint oil to the beaker for the aroma and then add 10 drops of lemon oil to the beaker for the aroma. These are the measurements for filling 50ml of 25 hand sanitizer spray bottles.

For a better experience of the process do watch the below link <https://www.youtube.com/watch?v=NTbxnfPHzO0>



BENEFITS-

- Adding aloe vera gel to homebuilt hand sanitizer provides humidity and aliment to skin and prevents drying. It also adds some consistence to your hand sanitizer for easier and further productive operation.
- Numerous essential oils have been displayed to parade natural anti-microbial and anti-viral properties, thanks to the plants that they're deduced from.
- Eucalyptus oil- combat with alien pathogens.
- peppermint oil- incense
- lemon oil- kills 99 germs, non-sticky.
- clove oil- disinfectant, it provides immediate advancement-autonomous safeguard on skin.

- They're all applicable and welcome extensions to homebuilt hand sanitizer. Along with fighting germs, they furnish a nice fragrance.



CONCLUSION-

Hand sanitizer gel is one of the indispensable add-ons for hand hygiene. Due to the emergence of the COVID-19 epidemic, the precluding and control of bacterial or fungal co-infections exploiting Alcohol free hand sanitizer gels can be pivotal, especially when the alcohol force chain is at threat. It's concluded from the results that the set phrasings have excellent organoleptic properties, pH values similar to skin pH, and suitable density and spread capability profiles.

References-

<https://homesteadandchill.com/homemade-hand-sanitizer/>

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