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Accepted Abstracts



## Ethnobotanical and antimicrobial activities of the *Gossypium* (Cotton) genus: A review

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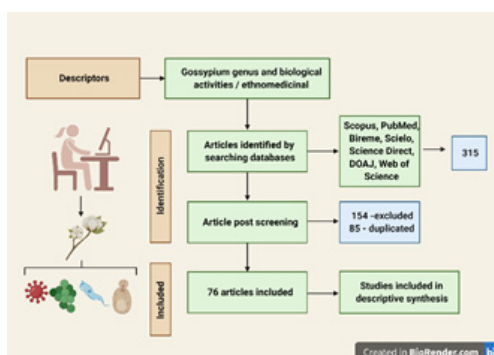
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**Statement of the Problem:** The Malvaceae family, an important group of plants that have the *Gossypium* (cotton) genus has been used in folk medicine to treat microbial diseases and symptoms. Ethnobotanical studies of the Malvaceae family have been published, including studies of species only of the genus *Gossypium* to demonstrate its medicinal use. We conducted this research to respond to this guiding question “Is the *Gossypium* genus used for the treatment of signs and symptoms of infections caused by microorganisms?”. This article aims to understand its ethnobotany expression in communities and scientific elucidation of antimicrobial activities of this genus through literature review.

**Methodology & Theoretical Orientation:** The bibliographic survey was carried out from 1999 to 2019 with keywords combinations such as "Gossypium + ethnobotanical", "Gossypium + medicinal", "Gossypium + the biological activity" in scientific databases as Pubmed, Scopus, Web of Science, DOAJ, Scielo, Bireme.

**Findings:** After data analysis, we found that the *Gossypium* genus, specifically *Gossypium hirsutum*, *G. barbadense*, *G. herbaceum*, *G. arboreum* are the species most cited in the treatment of microbial diseases and symptoms in communities all over the world. In light of scientific elucidation of biological activities, the *Gossypium* genus has been used to treat protozoal, bacterial, fungal, and viral diseases.

**Conclusion & Significance:** In consideration of biological activities, the *Gossypium* genus has been used to treat bacterial, fungal, and viral diseases with major expression in treating protozoal diseases like malaria. The most cited species in this session was the *Gossypium barbadense*, which is used for viral, bacterial, fungal, and protozoal infections. *Gossypium hirsutum* is used for fungal, bacterial, and protozoal infections. *Gossypium herbaceum* and *G. arboreum* are used for protozoal infections.



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## Home Remedies & Medicinal Food

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A large proportion of the general public has come to rely on these simple measures for part of their primary healthcare. In developing countries access to medicine is scarce and expensive forcing the majority to depend on natural remedies which have been handed down through generations. However even in developed societies skepticism towards medicine is on the rise and more and more people are favoring herbal home remedies believing they are free of undesirable side effects.(1) In fact, about 8% of hospital admissions in the United States of America are due to adverse or side effects of synthetic drugs. (2) In Germany a public opinion poll showed that 50% of the population uses herbal remedies, and one study indicated that patients want to be informed on the use of home remedies by their primary physicians as well. (2,3) A cross-national study across 14 European countries on self-care for common colds revealed that participants used 9 times more non-pharmaceutical items than pharmaceutical items. (4)

“Nature heals under the auspices of medical profession”

Paracelsus- Swiss Physician

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## Immediately available Prophylaxis against emerging respiratory Viral Infections

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**Statement of the Problem:** In addition to SARS-CoV-2, its variants, and more emerging viral infections to come, prophylaxis methods must be immediately available to prevent devastations that we are currently seeing throughout the world. The heterogeneous clinical phenotype following COVID-19 and other respiratory viral infections varies widely, but many patients become critically ill and die. Despite laudable progress in treating respiratory viruses that has been accelerated by COVID-19, shortages of beds, equipment, drugs, human resources, and specific vaccines will still and, unfortunately, again contribute to poor patient outcomes when new viral pandemics emerge. We anticipate a need for safe, prophylactic therapeutic strategies that can prevent or blunt the initial progression of COVID-19 and future viral infections when existing improved therapies and vaccines may not provide complete, enduring, specific, and/or readily accessible protection.

**Methodology & Theoretical Orientation:** Herein, we propose testing prophylactic nasopharyngeal administration of type I interferon (IFN-I) for individuals at higher risk to COVID-19 and other respiratory viral infections. IFN-Is (IFN- $\alpha$  and IFN- $\beta$ ) are critical components of innate immunity and the initial cytokines produced by cells during viral infection.

**Conclusion & Significance:** It is reasonable to forecast that new respiratory infectious diseases will come in the future and, accordingly, developing antiviral prophylaxis strategies now would be prudent and immediately position a more favorable course of action while new specific vaccines and better therapies are being developed. Based on the COVID-19 experience, protecting first-line health care workers against a new respiratory virus would be paramount and well advised.

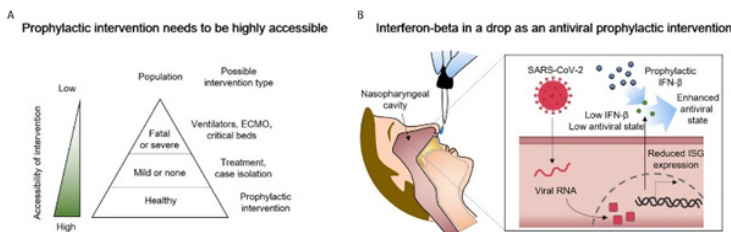


Figure 1 Delivery of type I interferon-beta (IFN- $\beta$ ) to the nasopharyngeal cavity is a candidate prophylactic and early intervention measure against COVID-19 that has high potential for success. (A) A greater accessibility of the intervention can prevent shortages of ventilators, extracorporeal membrane oxygenation (ECMO) machines, and/or critical care beds. (B) Suggested in this perspective is the highly accessible delivery of IFN- $\beta$  to the nasopharyngeal cavity. The administered IFN- $\beta$  can partially compensate for reduced interferon-stimulated gene (ISG) expression in SARS-CoV-2-infected cells as way to enhance antiviral immunity

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