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Neem (*Azadicarta indica*) against Pathogenic Microbes: A Review

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Structured Abstract

Background: The neem tree belongs to the Meliaceae family, which is found in tropical and semitropical countries like India, Bangladesh, Pakistan, and Nepal. For many centuries, the neem tree has been used as a traditional treatment for many kinds of human diseases. Numerous studies have revealed that neem is one of the most adaptable and beneficial plants because it has a wide range of phytochemicals and antimicrobials activities that may be used to produce and improvise the innovative works on industrial, agriculture and health fields. The objectives of this study are to conduct a review and determine the antimicrobial activity and importance of neem against pathogenic microbes.

Methods: A research review framework was used to conduct this paper. Data sources were taken from specific searches in ScienceDirect, Taylor & Francis, and Springer Link that were published from 2019 until 2022. All the data were identified, and screening was based on suitable topics given. Only 47 articles from 1,821 articles were included based on eligibility requirements for this study.

Results: Through this study, neem leaves possess a range of pharmacological properties, including antibacterial, antifungal, anticancer, antiseptic, and antiviral activities. The chemical compositions of neem have been useful for antimicrobial agents against pathogenic microbes due to the presence of numerous active substances in the neem tree including desactylimbin, quercetin, and sitosterol. Neem is well acknowledged as a notable natural resource that possesses potent antimicrobial functions. They are extensively employed for their capacity to effectively combat a wide spectrum of pathogenic microbes with a high level of effectiveness. Neem demonstrates substantial antimicrobial efficacy against several kinds of pathogenic microbes.

Conclusion: In conclusion, this study offers valuable insights into the current state of knowledge in various fields, through a comprehensive assessment of available literature on the antimicrobial properties of neem against pathogenic microbes. The results from numerous research underscore the promise of neem as a natural treatment and its efficacy as an antimicrobial agents.

Keywords: Neem, antimicrobial, antifungal, anticancer, antiviral.

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