In conclusion, the results obtained in the study clearly shows that bark from *Juglans regia* and its synergistic effect with other medicinal plants may be considered a good candidate for employment as an effective antimicrobial agent against oral bacteria which can cause many oral diseases. To elevate oral sanitation, medicinal plant-based mouthwash can be used as a mediator and act as a part of efficient home care medication. *Juglans regia* bark can serve a good source of essential compounds like phenols and flavonoids suggesting that it could be useful in the prevention of infections in which free radicals are present. Herbal antimicrobial mediators may inhibit the biofilm formation and can eliminate oral infections. The antimicrobial mediators need to possess the capability of eliminating oral microbes and preventing many oral infections. According to this study, the medicinal plants like *Juglans regia*, *Terminalia arjuna*, and *Acacia nilotica* were successful in inhibiting the biofilm formation alone and in combination which depicts that these medicinal plants can act as a substituent to chemical drugs for their effectiveness in preventing many oral diseases like periodontitis, gingivitis, and dental caries. Many bacteria possess resistance against various antibiotics and because of its several side effects, plants with medicinal value can serve alternative treatment to eliminate oral diseases. The challenge is to discover more medicinal plants which have the capability to eliminate oral diseases by reducing the biofilm formation and these medicinal plants should possess antimicrobial activities without affecting the epithelial cells of the oral cavity.