

ABSTRACT

This study explores the antimicrobial potential of herbal ointments formulated using *Azadirachta indica* (neem) and *Curcuma longa* (turmeric) extracts at varying concentrations (5%, 10%, and 15% w/w). The ointments were prepared using standard pharmaceutical methods and evaluated for physicochemical properties including pH, spreadability, consistency, and stability. The antimicrobial activity was assessed using the agar well diffusion method against *Staphylococcus aureus* (Gram-positive) and *Escherichia coli* (Gram-negative) bacteria. All the formulations exhibited antibacterial activity, with neem-based ointments demonstrating stronger inhibition, particularly the 15% w/w formulation against *E. coli* (28 mm zone of inhibition). Turmeric-based ointments showed moderate activity, with the highest being 17 mm against *E. coli* at 5% concentration. Neem was generally more effective against *S. aureus*, while turmeric showed relatively better efficacy against *E. coli*. The results confirmed that both plant-based ointments possess concentration-dependent antimicrobial properties and are physically stable, non-irritant, and suitable for topical use. These findings support the use of neem and turmeric as low-cost, natural alternatives to synthetic antimicrobial agents, with further research proposed to investigate the combined formulation and comparison with marketed herbal products.