

## **Development of herbal feminine wash with *Bauhinia racemosa* (Lam.) bark-extract and *in vitro* evaluation of antibacterial and antifungal activities**

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Herbal feminine products are widely embraced since their low incidence of side effects. This study aimed to develop an herbal feminine wash with potential antimicrobial activity, using the effect of abundant phenolic compounds and flavonoids found in *Bauhinia racemosa* (Lam.) bark, targeting the most prevalent vaginal infections, such as vulvovaginal candidiasis and aerobic vaginitis. The crude extracts were obtained by macerating dried bark powder in 70% acetone, and distilled water separately for 24 hours in the dark. Crude extracts were tested for antibacterial activity against *Staphylococcus aureus* (ATCC 25923), and antifungal activity against a clinical isolate of *Candida albicans* using the agar well diffusion method. The crude extract of 70% acetone at the concentration of 0.8 g/ml showed  $20.80 \pm 0.01$  mm zone of inhibition against *S. aureus* and  $13.02 \pm 0.37$  mm zone of inhibition against *C. albicans*. Five different formulations were prepared by mixing 2%, 4%, 8% acetone extract and 5%, 10% aqueous extract. They were evaluated for antimicrobial activity against the same microbes compared to a positive control (a commercial product). Further, the stability of physico-chemical parameters of the formulations was observed over 30 days. Among all, 8% acetone extract and 10% water extract incorporated formulations showed  $17.52 \pm 0.54$ , and  $20.90 \pm 1.06$  mm zone of inhibition against *S. aureus*, respectively. These two also exhibited  $20.80 \pm 0.69$ , and  $21.27 \pm 0.06$  zone of inhibition against *C. albicans*, respectively. In conclusion, there are no significant alterations in the physico-chemical parameters of all formulations. Also, the 10% aqueous extract added formulation showed a markedly elevated level of antimicrobial activity against tested microorganisms.

**Keywords:** Antibacterial, antifungal, *Bauhinia racemosa*, herbal feminine wash

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