Phytochemical Screening and Antimicrobial Activity of Gubinge, Pindan Walnut, and Mamajen Plants

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I was fascinated by my community's use of local plants for medicinal purposes. Elders in my community have used (and are still using) bush medicine whenever any of our people get sick. I wanted to test and validate the healing properties of three plants (i.e. Gubinge, Pindan Walnut, and Mamajen) used by them whilst treating ailments. On the one hand, using qualitative analysis methods, I conducted a phytochemical screening of these plants to determine whether they contain such antimicrobial phytochemicals as alkaloids, tannins, phenolic compounds and flavonoids. The study of antimicrobial activity, on the other hand, was undertaken using the disk diffusion method. E.coli bacteria were used and Dettol (antimicrobial agent) was a control. I then measured the zone of bacterial growth inhibition to ascertain whether E. coli is susceptible or resistant to the applied plant extract and Dettol. Results suggest that Gubinge and Pindan Walnut plants contain most of the active substances tested and that they possess an antimicrobial activity. However, owing to the absence of active compounds in the Mamajen plant, Mamajen did not exhibit any antimicrobial activity against E.coli bacteria. Therefore, my hypothesis, which was that the three plants will exhibit an antibacterial activity comparable to that of an antibacterial agent (Dettol), was true for both Pindan walnut and Gubinge. It (i.e. the hypothesis) was, however, rejected for Mamajen. Further antimicrobial studies need to be undertaken to confirm the rejection of the hypothesis for the Mamajen plant.

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