

عنوان مقاله:

Phytochemical, Heavy Metals and Antimicrobial Study of the Leaves of Calopogonium mucunoides

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خلاصه مقاله:

According to the World Health Organization, 80% of the world population use medicinal plants in the treatment of diseases, and this number is even higher in African countries. Medicinal plants are defined as any plants which contain substances that can be used for therapeutic purposes in one or more of its organs. In this study, the phytochemical, heavy metals, and antimicrobial characteristics of the leaves of Calopogonium mucunoides, a popular plant in Nigeria's folk medicine, were investigated in order to determine its therapeutic potentials. The phytochemicals present in the leaves were extracted with n-hexane, methanol and ethyl acetate, and the extracts were used to investigate for the phytochemical constituents and antimicrobial activity. The methanol extract was used to test for the concentration of five heavy metals. The result of the phytochemical screening confirmed the presence of alkaloids, anthocyanins, flavonoids, glycosides, phenols, reducing sugars, saponins, steroids, tannins, and terpenoids in various quantities. The heavy metals analysis result revealed the presence of lead (0.08 mg/kg) and iron (0.08 mg/kg) well below the acceptable limits set by the World Health Organization for heavy metals in plants, while cadmium, nickel and zinc were found to be below detectable limits. The extracts were tested against thirteen human pathogens (ten bacteria and three fungi) using the disk diffusion method. The extracts possessed a broad range of microbial activities, with the methanolic extract reportedly showing the highest zone of inhibition (31 mm) against Bacillus sp. while the n-hexane extract did not show any antimicrobial activity in the whole test organisms. The results obtained revealed that the leaves of C. mucunoides has some therapeutic values and could be exploited in the preparation of herbal drugs for the treatment various ailments.

کلمات کلیدی:

Phytochemical, Heavy metal, antibacterial, Antifungal, Calopogonium mucunoides

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