

Physico-Chemical and Antibacterial Properties of Neem Extracts

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Abstract : Several parts of Neem tree (*Azadirachta indica*) are used in traditional medicine in many West African countries for the treatment of various human diseases. The leaf, stem - bark and seed were air dried for 8, 5 and 7 days, respectively. The shells were carefully separated from the seeds, each powdered sample obtained with mechanical miller and 250 mm sieve. The neem samples were individually subjected to extraction with acetone, n-hexane for 48hr and 72 hr, respectively. Physico-chemical and antibacterial evaluation were carried out using standard methods. Results of physico - chemical analyses of the extracted oil from the seed shows that it has a brownish colour, with a smell similar to garlic while the moisture content, refractive index are 0.76% and 1.47 respectively. Other vital chemical results obtained from the neem oil such as saponification value (234.62), acid value (10.84 %), free fatty acid (5.84 %) and peroxide value (10.52%) indicated the oil extracted satisfied standard oils parameters for quality soap and cosmetics production. The antibacterial screening by disc diffusion revealed the oil demonstrated high activity against *Staphylococcus aureus*. Both the physio-chemical and antibacterial of samples have been certified by National Agency for Food and Drugs Administration and Control. The preliminary results of this study may validate the medicinal value of the plant. Further studies are in progress to clarify the *in vivo* potentials of neem extracts in the management of human communicable diseases and this is a subject of investigation in our group.

Keywords : anti-bacterial, neem extract, physico-chemical analyses, *staphylococcus aureus*

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