

Antimicrobial Effect of Palmyrah Root Tuber from Different Areas of Jaffna Peninsula

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The objective of this study is to determine the antimicrobial effects of palmyrah root tuber on the growth of bacteria that cause gastro intestinal tract disorders in humans. A preliminary study was carried out to determine the effects of aqueous and ether extracts (1g/10mL) (40, 60, 120 & 180 μ L) of boiled & dried and unboiled & dried palmyrah root tuber flour from different areas of Jaffna on the growth of *Pseudomonas* spp., *Klebsiella* spp., *Proteus* spp. & *Escherichia coli*. The areas selected were Delft, Kayts, Kudathanai, Punnalaikadduvan and Arali. Ether extracts of boiled and unboiled dried palmyrah root tuber flour from different areas showed no inhibitory zones and similar observation was obtained for aqueous extracts of boiled & dried root tuber flour. Aqueous extracts of unboiled & dried palmyrah root tuber flour (180 μ L) from different areas produced zones of inhibition at 4h of incubation and disappeared at 24h. Aqueous extracts from Delft - unboiled & dried root tuber flour (180 μ L) produced the highest inhibitory zones against *Pseudomonas* spp. (0.7 cm), *Klebsiella* spp. (0.6 cm), *Proteus* spp. (0.7 cm) & *Escherichia coli* (0.65 cm). Zones of inhibition produced were compared with standard antibiotics, those produced larger clear zones at small volume (20 μ L). The standard antibiotics and their concentrations used were nalidixic acid, cephalexin, amoxicillin, nitrofurantoin, ampicillin and gentamycin and 1.5, 0.5, 0.1, 3, 0.5 and 0.5 μ g/ μ L respectively. Nalidixic acid and cephalexin produced clear zones of 1.5 & 1.3 cm respectively against *Klebsiella* spp. while gentamycin produced inhibition zone of 1.5 cm against *Pseudomonas* spp. *Escherichia coli* were sensitive to antibiotics such as gentamycin (2.6 cm), nitrofurantoin (1.5 cm) and nalidixic acids (2.2 cm). *Proteus* spp. was resistant to antibiotics like amoxicillin, nalidixic acid and cephalexin. Thus antibacterial activity found in the aqueous extracts of unboiled & dried palmyrah root tuber is less compared to most of the standard antibiotics except against *Proteus* spp.