A - 6

ANTI-MICROBIAL AVTIVITY OF DIFFERENT PALMYRAH PRODUCTS

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This paper describes a preliminary study carried out to determine the anti-microbial effects of different amounts of dried palmyrah tuber flour (un-boiled and boiled) and fruit pulp extract incorporated into media on the growth of *Pseudomonas aeruginosa, Klebsiella pneumoniae, Escherichia coli, Bacillus licheniformis, Micrococcus roseus, Staphylococcus aureus, Citrobacter freundi, Saccharomyces cerevisiae, Aspergillus oryzae* and *Aspergillus niger*. The moisture contents of un-boiled odiyal, boiled odiyal and fruit pulp extract were 11.2, 9.6 and 74.8% respectively. The growths of the organisms were monitored by measuring viable cell counts at fixed time intervals. The bacteria and yeast were cultured in nutrient agar medium while fungi were cultured in potato-dextrose-agar medium. The amount of un-boiled or boiled dried tuber flour or fruit pulp extract needed to reduce the viable microbial population to half of that of the control (medium without addition) is presented as L_{50}. The amounts of un-boiled tuber flour needed to obtain L_{50} for *P.aeruginosa, K.pneumoniae, E.coli, B.licheniformis, M.roseus, S.aureus, C.freundi* and *S.cerevisiae* were 0.030, 0.134, 0.034, 0.024, 0.024, 0.014, 0.020, and 0.004 gml^{-1} of media respectively. When the amount of un-boiled flour was increased, the growth of *A.niger* and *A.oryzae* decreased. Beyond 0.1 gml^{-1} of media the relative viability (number of colonies in un-boiled flour containing media / control x 100) remained

constant (65%). The quantity of boiled tuber flour needed to obtain L_{50} for *P.aeruginosa, E.coli, B.licheniformis, M.roseus, S.aureus, C.freundi, S.cerevisiae, A.oryza* and *A.niger* were 0.017, 0.034, 0.084, 0.014, 0.034, 0.017, 0.027, 0.067 and 0.067 gml^{-1} of media respectively. *K.pneumoniae* showed 64% of relative viability in medium containing 0.0134 gml^{-1} boiled tuber flour and further increase did not reduce the growth. Fruit pulp extract needed to obtain L_{50} for *P.aeruginosa, K.pneumoniae, E.coli, B.licheniformis, S.cerevisiae* and *A.oryzae* were 0.034, 0.0134, 0.034, 0.0134, 0.067, and 0.0234 gml^{-1} of media respectively. In the media containing 2.5g of fruit pulp extract *A.niger* showed relative viability of 88%. These results indicate the presence of anti-microbial agents in un-boiled and boiled dried palmyrah tuber flour and fruit pulp extract.