

ABSTRACT

Palmyrah fruit pulp is available in excess of 15 -20 Metric tons.per. annum. It is under-utilized due to a bitter principle, which had been tentatively identified as a saponin, that is a tetraglycoside of spirost-5en-3 β ol (24R). The aim of this study was to investigate the bitter principle and debittering of palmyrah fruit pulp obtained from Hambantota.

The flabelliferins of palmyrah fruit pulp collected from Hambantota were isolated by methanol extraction, cleaned with petroleum ether and extracted into acetone, followed by dry cellulose chromatography and flash chromatography. Four Flabelliferins were obtained and were called F-II, F_B, F_C, and F_D. F-II the bitter compound was confirmed as saponin tetraglycoside M.W. 1030 with a rha. terminus. This saponin showed average haemolysis, slight foam stabilization and was an inhibitor of yeast at 250 μ g/ml. Also isolated were F_B and F_C saponin triglycosides M. W. 868 with a rhamnose terminus. Both were haemolytic and foam stabilizing (more by F_B), F_B was also highly active against growth of yeast and alcoholic fermentation by *Saccharomyces cerevisiae* strain S11-F₃ and six strains of bacteria. F_C a saponin triglycoside did not show such bio-activity. F_D was a saponin diglycoside that also did not show bio-activity.

The crude flabelliferins could be debittered by naringinase which yielded two saponin spots termed F_X and F_Y. F_X was a triglycoside possibly identical or very similar to F_C. F_Y was an impure mixture containing at least 3 to 4 compounds. On separation by MPLC, one of these compounds was a steroid M.W. 414. The MS and NMR spectra of the steroid were consistent with stigmasterol (24 α Et).

The other compound F_Y probably arose from F-II, F_B and F_D, (smaller glycosides). It is considered that debittering not only hydrolyses F-II but also F_B, thus destroying both bitterness and anti-microbial activity. In addition it is possible to debitter some samples of palmyrah fruit pulp with a cheap enzyme heat stable α - amylase and mixture of amylo glucosidase and pullulanase.

**Aspects of the chemistry and antimicrobial activity of flabelliferins of Palmyrah
fruit-pulp**

J.K. Nikawala

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