

Eco Friendly Antibacterial and Antifungal Cookware for Rice Cakes

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Pandanus unipapillatus of Pandanaceae family, common in coastal belt, Western Ghats along banks of streams, marshy places is investigated for its potential antibacterial and antifungal properties. The *P. unipapillatus* leaves are kept in sun shade for its flexibility, dipped in water. Thorns are removed; leaves are flattened, bent, tied in cylindrical shape using broom sticks and used as a cookware for rice cakes. This container with rice batter is kept for steaming and served. Majority of the consumers liked the products; however there was difference in texture hardness/softness values was observed. Quality characteristics of rice cakes are studied by taking normal rice cake and bread as negative and positive controls respectively. The observation proved that *P. unipapillatus* leaf cookware is having more shelf-life for rice cakes. Antimicrobial activity of *P. unipapillatus* leaf aqueous extract was evaluated against four bacterial, two fungal strains using Gentamycin, Nystatin as positive control by disc diffusion method (in nutrient agar and potato dextrose). The *P. unipapillatus*, leaf showed maximum activity against *S. aureus* as indicated by MIC value (98.0 ± 3.92 mg/ml), followed by *B. Subtilis* (119.0 ± 4.27 mg/ml). The vertical section of *P. unipapillatus*, leaf revealed thick cuticle, gum-resin canals, responsible for aromatic property and preservative quality. Bio-assays showed presence of multiple specifically active compounds at different Rf values in the leaf extract. ATR showed the presence of carbonyl, hydroxyl, amine groups. Thus, cultivation of *P. unipapillatus*, plant is to be promoted. In depth investigation is required to isolate, identify and characterise the components which are responsible for the beneficial effects of the *P. unipapillatus*.

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