

273. *PIPER BETEL* L. (PIPERACEAE) — Betel Pepper, Betelvine, Pan Tambult

Betel leaf is an important article of daily consumption in Asia and Africa since ancient times, both for rich and poor. Leaves are used in wrapping pellets of betelnut and lime for use as a masticatory. Pellets are hot, acrid, aromatic, and astringent. They redden the saliva and blacken the teeth, and eventually corrode them. One astute observer²⁶⁵ challenges this, sensing that Indonesians (including dentists) widely believe the converse to be true, i.e., that chewing the betel strengthens the teeth and prevents decay. Betel leaf chewed with the betelnut and lime acts as a gentle stimulant and exhilarant. Those accustomed to its use feel a sense of languor when deprived of it. Leaves and/or the essential oil therefrom are antiseptic and antioxidant. Heated with oils and fats, they check rancidity, effective, e.g., in coconut, groundnut, mustard, safflower, and sesame oils (due to hydroxy chavicol). The essential oil and leaf extracts possess activity against several Gram-positive and Gram-negative bacteria: *Bacillus subtilis* and *B. megaterium*, *Diplococcus pneumoniae*, *Escherichia coli*, *Erwinia carotovora*, *Micrococcus pyogenes*, *Proteus vulgaris*, *Pseudomonas solanaoearum*, *Salmonella typhosa*, *Sarcina lutea*, *Shigella dysenteriae*, *Streptococcus pyogens*, and *Vibrio comma*. Antiseptic activity is probably due to chavicol. Essential oil and leaf extracts also show antifungal activity against *Aspergillus niger*, *A. oryzae*, *Curvularia lunata*, and *Fusarium oxysporum*. Oil is lethal in about 5 min to *Paramoecium caudatum*, in dilutions of up to 1:10,000. It inhibits the growth of *Vibrio cholerae* in a dilution of 1:4000, *Salmonella typhosum* and *Shigella flexneri* in 1:3000, and *Escherichia coli para S.* and *Micrococcus pyogenes* var. *aureus* in 1:2000.¹