Antibacterial Activity of Crude Extracted Betel Vine Leaf Against *Salmonella* Spp

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Abstract

Betel leaf is an important article of daily consumption in Asia and Africa. Betel leaf constituents volatile oil (cadinene, carvacrol, Caryophyllene, chavithetol, chavicol, 1,8-cineole, estragole, eugenol, terpinyl acetate, etc.) amino acids, pyridine alkaloids, sitosterols, stigmasterol, tannins, vitamin C, oxalic acid, d(+)malic acid, n-hentriacontane, n-pentatriacontane and inorganic elements (fluoride, iron). The volatile oil from the betel leaf extract is antiseptic and antioxidant. The aim of this study was to determine the in vitro antibacterial activities of crude extracted betel vine leaf against *Salmonella* spp. A total of 300 g. crude extract was extracted from fresh betel vine leaf 2 kg. (15% yield) by 95% ethanol. Forty eight samples of pig feces (n=16), pen floor (n=3), sewage (n=3), water (n=2) and pork (n=24) were treated with several concentration (0.0061 to 6.25 µl/ml) of the betel vine leaf extracted in Mueller Hinton Agar (MHA). The minimal inhibition concentration (MIC) of the extract was lowest in 4.2% of pork samples (0.0244 µl/ml for S. rissen) whereas highest in 18.75% of fecal samples (1.5625 µl/ml for S. krefeld). At 0.3906 µl/ml showed the antibacterial activities of 2 strain *Salmonella* spp. (S.rissen , S.lagos) in 45.8% of pork samples and at 0.7812 µl/ml showed the broad antibacterial activities of 8 strain *Salmonella* spp. ( S.rissen , S.lagos , S.krefeld , S.weltevreden , S. Stanley, S. derdy , S. salamae, S. bovismoribican) in all type of samples (100% of sewage, pen floor and water, 81.25% of feces, 50% of pork). We further intend to determine effective constituents in betel leaf and use the crude extracted as feed supplement in weaned pig diets for controlling diarrheal bacteria.

Keywords: Antibacterial activity, crude extracted betel vine, *Salmonella* spp.