

Title: *IN VITRO* ANTIBACTERIAL ACTIVITY OF FRUITS

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Abstract:

The consumption of fruits has increased in domestic and international markets due to the growing recognition of their nutritional and therapeutic value related to the presence of bioactive substances and antioxidant activity. These substances include phenolic compounds, which also exhibit antimicrobial activity. Thus, the objective of this study was to evaluate the *in vitro* antibacterial activity of several fruits including plum flavor beauty, blackberry, atemoya, rosette nectarines, red dragon fruit and tamarillo employing the diffusion in agar gel method. Hence, 6-mm filter paper disks suitable for antibiograms were impregnated with aqueous extracts of different fruits and placed in Petri dishes with the appropriate culture medium and previously seeded with the following micro-organisms: *Bacillus cereus*, *Bacillus subtilis*, *Salmonella* Typhimurium, *Salmonella* Enteritidis and *Staphylococcus aureus*. Subsequently, the Petri dishes were incubated at 35°C for 24-48 hours. Significant antimicrobial activity was recognized by halos equal to or greater than 10 mm. The aqueous extract of the pulp of dragon fruit was efficient against *S. aureus* (15-mm halo) and *S. Typhimurium* (10-mm halo). *B. cereus* and *S. Enteritidis* were sensitive to an aqueous extract of the peel (halos of 11 mm and 10 mm, respectively) and pulp and peel of pitaya (halo of 10 mm); an aqueous extract of the peel was also effective against the micro-organism *S. Typhimurium* (10-mm halo) and pulp and peel against *S. aureus* (10-mm halo). The aqueous extract of the atemoya peel proved to be effective against *B. cereus* (10-mm halo), *S. Enteritidis* (11-mm halo), *S. aureus* and *S. Typhimurium* (10-mm halo); while the aqueous extract of tamarillo peel was effective against *B. subtilis* (10 mm halo). In conclusion, different parts of the fruit evaluated in this study had different effects on the bacteria tested. Aqueous extracts of red pitaya were more effective to inhibit micro-organisms than the other plant extracts.

Keywords: antibacterial activity, fruit, red pitaya