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Main topic : Antimicrobial resistance: A worldwide concern

Evaluation of the antimicrobial effect of Tocosh (*Solanum tuberosum* L.) on *Campylobacter* spp. isolated from chickens in markets of Lima, Peru: Preliminary results

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Introduction: Tocosh is a traditional food based on potato (*Solanum tuberosum* L.) obtained by fermentation, and the Peruvian Andean populations use this product for its antibiotic capacity. Its effect against pathogenic bacteria such as *E. coli*, *S. aureus*, *L. monocytogenes*, and *S. mutans* has been demonstrated experimentally and even in strains resistant to conventional antibiotics. *Campylobacter* spp. is the fourth bacterial pathogen that causes human gastrointestinal disease. This microorganism, found in the broiler's gut, has increased its antibiotic resistance. This work aims to evaluate the antimicrobial effect of Tocosh flour on *Campylobacter* spp. isolated to chicken meat from markets in Lima, Peru. **Methods:** For this purpose, 35% alcoholic solutions for three commercial Tocosh flours (T1, T2, and T3) were prepared and left to macerate for seven days. The product was filtered with Whatman N°1 paper and concentrated with a rotary evaporator (60°C) up to 5% of the original volume. Concentrations of 100, 75, 50, 50, 25, and 0% were prepared from this solution. The agar well-diffusion method was performed with 0.5 on the McFarland scale (600OD) of *Campylobacter coli* isolated from chicken meat, *C. coli* (ATCC 33559), *Escherichia coli* (ATCC 25922), and *Staphylococcus aureus* (ATCC 29213). Bacteria solutions were seeded on plates with Muller-Hinton blood agar (5%); then wells were made in the agar to deposit 35 µL of the different Tocosh solutions (100, 75, 50, 50, 25, 0%). Plates were incubated at 42°C/48h in microaerophilic. **Results:** The results show that the T1 flour had an inhibition zone of 9 and 8 mm at 100% and 75% for the *C. coli* strain isolated from chickens. In the ATCC strain, only the 100% concentration presented an inhibition zone of 8 mm. The other two flours (T2 and T3) showed color changes in the agar as an inhibition zone but with colony growth and were therefore discarded. The 100% concentrations of the three flour brands achieved inhibition zones of 10 mm for the *S. aureus* strain, while for *E. coli*, inhibition zones of 9, 8, and 7 mm were observed for brands T1, T2, and T3, respectively. The alcohol control presented inhibition halos of 7 mm. **Conclusions:** It can be concluded that 100% alcoholic extract of Tocosh from the T1 brand produced sensitivity for the strain of *C. coli* isolated from chicken meat; this inhibition was also verified in the other ATCC strains used as control. Although the inhibition was not greater than 10 mm, our results are significant because we can develop different methods for flour maceration (aqueous and hydro-alcoholic solutions) and thus continue to evaluate the antimicrobial potential of Tocosh against *Campylobacter* spp.

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