

TITLE: ANTIMICROBIAL ACTIVITY OF DIFFERENT PLANT EXTRACTS OF *Zanthoxylum caribaeum* L. FRONT OF SOROTYPES OF *Salmonella* spp.

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ABSTRACT:

In the last years, numerous efforts have been directed towards combating foodborne diseases, such as salmonellosis, a disease caused by bacteria of the genus *Salmonella* spp. In this perspective, studies with plant extracts for prophylactic and curative purposes, have been carried out regarding their biological properties. Thus, considering the valuation of the native flora and its importance as an antimicrobial potential, the present work had the objective of evaluating the antimicrobial activity of the ethanolic, dichloromethane and hexane extract of the leaves of *Z. caribaeum* under two serotypes of *Salmonella enterica* from aviaries in the western region of Paraná. For the antimicrobial assay the following serotypes were used: *S. Agona* e *S. Worthington*. To obtain the extracts, the leaves were dried at 40° C and ground in a knife mill. The plant leaf powder was added to its respective solvents (Ethanol P.A., Dichloromethane P.A. and Hexane P.A.) in the ratio of 1:10 (w / v). After, it was placed on a rotary shaker for 24 hours. Finally, the blend was centrifuged at 5000 rpm (revolutions per minute) for 15 minutes, sterilized by vacuum filtration and rotoevaporated for complete solvent removal. The extract was evaluated at concentrations between 200 mg / mL and 0.09 mg / mL. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) were determined by the broth microdilution method. As a positive control, gentamicin at 200 mg / mL was used. Bacterial metabolism was verified with the use of triphenyltetrazolium chloride (TTC) at 0.5%. The results indicated that serotypes *S. Agona* and *S. Worthington* presented MICs of 50mg / mL for ethanolic extract and 100mg / mL for hexane and dichloromethane extracts. MBC ranged from 50mg / mL to 200mg / mL. The ethanolic extract that presented MBC of 50mg / mL was considered the best result when compared to the other extracts with MBC of 100 mg / mL for the hexane extract and 200 mg / mL for the extract of dichloromethane. Therefore, it can be concluded that the extracts of the leaves of *Z. caribaeum* presented antibacterial activity in the control of different serovars of *Salmonella enterica* promoters of foodborne diseases.

Keywords: Salmonella, microdilution, natural products

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