**TITLE:** ANTI-STAPHYLOCOCCAL ACTIVITY OF *MORINGA OLEÍFERA* LAM. AGAINST ISOLATES *STAPHYLOCOCCUS* SPP. OF A DAIRY EFFLUENT

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**ABSTRACT:**

Bacteria *Staphylococcus* spp. are that can be presented without the processing of milk and one of the main pathogens in outbreaks of foodborne diseases in Brazil, putting the health of consumers at risk. During the industrial production of milk, effluent is generated with a high content of organic matter, associated with pathogenic microorganisms, which can be conveyed to the environment along with the final treatment. There are numerous methodologies for the treatment of industrial effluents, but they are costly and do not present a satisfactory environmental safety. It is a context that antimicrobials are highlights, among many plants stands out a *Moringa oleifera* Lam., which has activity against some pathogenic bacteria, among many applications such as water treatment and feeding. The aim of this study was to evaluate an antibacterial activity of the aqueous extract of the seeds of *Moringa oleifera* Lam. against *Staphylococcus* spp. isolates of the effluent from a dairy, Paraná/BR. Samples were collected from different points of the dairy effluent treatment plant, and sent to the Laboratory of Research in Air and Environment, Department of Basic Health Sciences, State University of Maringá/Brazil. Phenotypic and biochemical tests were performed to identify microorganisms, where two bacteria of the genus *Staphylococcus* spp*.: S. aureus* and *Staphylococcus* coagulase negative were isolated. The aqueous extract of the moringa seeds was prepared by grinding the seed in water, homogenized for one hour and filtered. The antibacterial activity of the extract against the isolates was evaluated by the method of determining the minimum inhibitory concentration (MIC) in polystyrene microplate, whose wells contained BHI and bacterial suspensions adjusted to 0.5 of the McFarland scale. Subcultures were performed to determine the minimum bactericidal concentration (MBC). *S. aureus* (ATCC29213) was used as a positive control. Inhibition of growth and elimination of the tested strains compared to the extract occurred at the concentration of 97.6 µg.ml-1 and 195.3 µg.ml-1, respectively, for *S. aureus*; of 195.3 µg.ml-1 and 390.6 µg.ml-1, respectively, for *S.* coagulase negative; and 97.6 µg.ml-1 and 195.3 µg.ml-1, respectively, for the *S. aureus* strain (ATCC29213). The present study confirmed the antimicrobial potential of the *Moringa oleifera* Lam. plant extract, since it inhibited and satisfactorily eliminated the growth of the bacteria isolated and tested.

**Keywords:** Antimicrobial, *Staphylococcus aureus*, industrial contamination, milk

**Development Agency:** Capes and Fundação Araucária.