TITLE: EVALUATION OF THE *in vitro* BIOSURFACTANT RHAMNOLIPID EFFICACY IN THE CONTROL OF THE TOMATO BACTERIAL PINT.

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ABSTRACT:
Biosurfactants are amphiphilic compounds that can be synthesized by microorganisms. These compounds have been highlighted because of their biodegradability and low toxicity. In addition, they are very versatile molecules that can be used in a variety of sectors, such as in the pharmaceutical, petroleum and cosmetics industries. However, recent studies have appeared with agricultural biosurfactants, where they have demonstrated efficacy in the control of plants pathogens. As a result, the objective of this research was to verify the efficacy of the biosurfactant rhamnolipid as a more sustainable alternative for the control of the bacterial pathogen of the tomato, caused by the bacterium *Pseudomonas syringae* pv*. tomato*. The inhibition test occurred after the insertion of a filter paper disk on the nutrient agar plate after the bacterial inoculum application. The disks were soaked in the rhamnolipid solution at three different concentrations (0.5; 1.0 and 2.0 g/L), in addition to the control (sterile distilled water). Subsequently, the plates were incubated in Biochemical Oxygen Demand at 28°C for 36 hours. The experiments were performed in triplicate. The analyzes of the results were based on the observation and measurement of the diameter of the inhibition halos. Disks embedded in sterile distilled water and 0.5 and 1.0 g/L rhamnolipid solution showed no antimicrobial activity. On the other hand, the discs containing the 2.0 g/L rhamnolipid solution showed an inhibition halo with the mean of 2.0 mm in diameter. This experiment demonstrated that rhamnolipid is a potential inhibitor of the microorganism *P. syringae* pv*. tomato.* However, higher concentrations of this biosurfactant (2.0, 2.5, 3.0, 3.5, 4.0, 4.5 and 5.0 g/L) will be tested in order trying to amplify the inhibition halo.

Keywords: biosurfactant; microorganism; phytopathogen; rhamnolipid.

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