

TITLE: ALGINATE-BASED EDIBLE COATINGS INCORPORATING *Schinus terebinthifolius* ESSENTIAL OIL APPLIED ON MINIMALLY PROCESSED PINEAPPLE

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ABSTRACT:

In recent years, consumers are increasingly looking for food that saves time during preparation. In parallel, there has been a preference and need for healthier foods, such as minimally processed fruits, which can be modified during the peeling and cutting processes. Therefore, the objective of this work was to evaluate the development of edible films based on sodium alginate incorporated with essential oil extracted from *Schinus terebinthifolius*, aiming to prolong the shelf life of minimally processed pineapples during refrigerated storage. In order to begin the tests, the minimum inhibitory concentration (MIC) of the essential oil that completely inhibits microorganism growth was determined, such as *Escherichia coli* (0.39%), *Staphylococcus aureus* (12.5%), *Bacillus cereus* (25%) and *Penicillium commune* (3.12%). Two film formulations were elaborated, the control containing only alginate and glycerol, and the other formulation containing alginate, glycerol and essential oil. After applying the edible coating to minimally processed pineapple cubes, it was possible to investigate its morphology and antimicrobial activity. The count of thermotolerant coliforms and the detection of *Salmonella* in the pineapple slices involved with the active films for 15 days were evaluated and it was observed that there was no contamination during this incubation period for the slices enveloped by the film. It was concluded that the films developed in this study promoted the reduction of the microbial load of the fruit in question. The morphological analyzes of the cross sections of the covered pineapple showed the edible coating is uniform and homogeneous, covering the entire surface of the fruit, do not present defects and display satisfactory adhesion. In conclusion, it is possible to conclude that the alginate-based coating

incorporating *S. terebinthifolius* essential oil is a promising alternative to preserve minimally processed fruits, especially pineapple.

Keywords: sodium alginate, minimum inhibitory concentration, *Schinus terebinthifolius*.

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