INTRODUCTION

The contamination of fresh produce with food pathogens is important because this kind of products are likely to be consumed raw, without any type of microbiologically lethal processing, only relying on cold storage to maintain their safety. The presence of Listeria monocytogenes on these products is of special concern due to its ability to survive and multiply at refrigeration temperatures. Foodborne illness originated in private home environments is three times more frequent than in commercial cafeterias, thus it is important to develop strategies to control L. monocytogenes in the home environment. There are various chemical compounds in household that can be useful for sanitizing fresh produce, particularly acetic acid in vinegar. Vinegar-based solutions can be promising in this field, since they are commonly used in salads and appetizers.

OBJECTIVE

The present study was designed to evaluate the antilisterial effect of different balsamic vinegar solutions in lettuce inoculated with L. monocytogenes. The study of bacteria survival / growth was carried out at refrigeration storage (5±2 °C) for 12 days.

CONCLUSIONS

Lettuce washed with vinegar solutions showed a reduction in L. monocytogenes load. The reduction was more evident when solutions with higher balsamic vinegar content were used. Statistical analysis (ANOVA and Duncan tests) of the results revealed significant differences between the solutions. The solution containing 50% of balsamic vinegar was significantly different from the others (p<0.05). The impact of solution with 25% vinegar was similar to the one of 15%, but both differed significantly from water-washings.

At the end of 12 days of storage, L. monocytogenes was not detected in lettuce pre-washed with all vinegar solutions tested. However, the load of pathogen was maintained if simple water-washings were applied.

MATERIALS AND METHODS

RESULTS

The bars indicate mean standard deviation

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