

2003 TAIWAN INTERNATIONAL SCIENCE FAIR

CATEGORY : Microbiology

PROJECT TITLE : Giving Bugs the Chop !

AWARD : Third Award

SCHOOL : Te Awamutu College

FINALISTS : Angela Rose Captein

COUNTRY : New Zealand

Giving Bugs the Chop!

Angela Captein

The purpose of the research was to find out if Manuka oil (an oil with natural healing properties which is extracted from the NZ Manuka plant, *Leptospermum scoparium*) could be used to reduce the populations of bacteria and fungi that build up on chopping boards used in the kitchen for food preparation. If it were effective, then it would reduce the risks of microbial contamination of foods prepared using the boards.

The first stage of the project was designed to test different concentrations of Manuka oil (diluted with olive oil) to see which had the greatest effect on microbial growth on contaminated agar plates. Counts were made of the numbers of bacterial and fungal colonies growing on the agar after one week.

Results indicated that the most effective concentrations for microbial control were the 10% and 20% Manuka oil solutions.

In the next stage of the investigation, these two solutions were sprayed, with two controls, onto the experimental wooden chopping boards. Every day, for a week, the boards were contaminated with raw meat and milk, then rinsed with cold water. At the end of the week, swabs were taken from the board surfaces and inoculated on agar. After 3 days incubation the microbial colonies were counted. The results showed that the 20% solution of Manuka oil gave the better control of microbes than the 10% solution or the control.

This investigation shows that Manuka oil can be used in the control of microbial growth in the kitchen, and links well with the proven medicinal uses of Manuka honey extracts that are commercially available.

評語

Very interesting test !

May require more test (due to the limited reagents).

Introduction is very clear and persuasive.