CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY

Name(s)
Emily A. Champion

Project Number
38580

Project Title
Solutions for Canine Otitis

Abstract

Objectives/Goals
The objective of this experiment was to find easily accessible solutions to kill bacteria and yeast found in the infected ears of dogs. The hypothesis is, if bacteria grown from a dog#s ear infection is treated with a homeopathic solution that kills bacteria and yeast with similar effectiveness to the medication, Mometamax, then it is feasible that the homeopathic solution could treat canine otitis.

Methods/Materials
This experiment used multiple homeopathic solutions: salt water, hydrogen peroxide, apple cider vinegar, coconut oil, and a combination of apple cider vinegar and coconut oil. The experiment collected swab samples from the infected ears of dogs which were used to inoculate petri dishes to grow pathogens. Two types of agar were used, nutrient agar and yeast agar. Each trial set grew 3 samples and used 4 dogs throughout the experiment. All the petri dishes had small discs of coffee filter soaked in the homeopathic solutions and placed into the petri dishes. Areas around discs where pathogens didn#t grow were considered kill zones.

Results
The results proved apple cider to be the most effective homeopathic solution when treating bacteria and yeast. The data showed that apple cider had the most kill zones in the bacteria and yeast trails and was even more effective in numerous trials than Mometamax. Hydrogen peroxide also showed good results against yeast.

Conclusions/Discussion
In conclusion, the hypothesis was correct, because apple cider vinegar proved to be most effective when treating bacteria and yeast, which could make it a viable treatment for canine otitis.

Summary Statement
The research and experiment focused on finding a readily available homeopathic solution which could be used to treat ear infections in dogs by exposing pathogen samples cultured in petri dishes to various homeopathic solutions.

Help Received
My science teacher and parents guided me throughout the process of developing the idea of the experiment. I conducted the experiment myself under supervision of Tammy Levy and Shaun Champion. Pathogen samples provided by my mentor and Dr. Steven Leibl. Joseph McCorkle reviewed my board.