



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Alyssa N. Cook	Project Number J1409
Project Title Dermatophytes and Yeasts: Analysis of the Canine Claw	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective is to determine if dermatophytes (fungi that typically grow on skin structures) and yeasts colonize the claw tissue of healthy dogs, including guide dogs used by the disabled, working dogs, and pets, and if so, to determine which age groups show the highest percentage of dermatophytes and which show the highest percentage of yeasts.</p> <p>Methods/Materials 112 claw tissue specimens were obtained from professional groomers, taken from healthy dogs ranging in age from 3 months to 16 year 3 months old. All specimens were surface decontaminated, pulverized, and processed. One half of each specimen was treated with a 20% KOH solution and examined microscopically for yeast. The other one-half of each specimen was plated on Dermatophyte Test Media (DTM), incubated, and examined daily for culture growth and color change. The study was blinded and controlled.</p> <p>Results 93% of 112 specimens were positive for yeasts or dermatophytes. Yeasts were found to be present in the claw tissue of all age groups, but not significantly more in any one age group. Dermatophytes, however, were seen in increasingly higher percentages in the claw tissue of older age groups of dogs as compared to younger age groups, from 19% in the 3 to 6 year age group, up to 75% in the 12 to 15 year old age group.</p> <p>Conclusions/Discussion The incidence of yeasts and dermatophytes in the claw tissue of otherwise healthy dogs has not been studied extensively to this point. The impact of these findings may help veterinary medicine in better diagnosing true claw pathogens, as opposed to non-pathogenic colonizers. In this study, it was found that yeasts and dermatophytes are common colonizers of canine claw tissue in all age groups, that yeasts colonize all age groups in almost equal percentages, but that dermatophytes are found in higher percentages of older dogs claw tissue as opposed to younger dogs.</p>	
Summary Statement This project investigates the colonization of healthy canine claw tissue with dermatophytes and yeasts as determined by culture and microscopy, and compares the percentages found to the ages of the dogs.	
Help Received This project and the collection of specimens were overseen by my science teacher, Mr. Mark Hobbs, and by Dr. Barbara Doty, DVM. Dr. Paula Harbison acted as lab assistant and helped to create the blinded study. My parents assisted in typing and ordering of supplies.	