CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)

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Project Number

J1918

Project Title

Roundworms and Hookworms, Year Two: Prevalence in Shelter Puppies

Abstract

Objectives/Goals

This is a continuation of last year#s project. Last year I compared the prevalence of roundworms and hookworms in shelter puppies, dogs residing in an animal shelter, and companion puppies, dogs living with an individual or family. I found that 42% of shelter puppies tested positive for roundworms or hookworms, while only 11% of companion puppies were positive. I hypothesized that population density would have an affect on this prevalence. This year, I decided to test this hypothesis.

Methods/Materials

I collected 80 fecal samples, 20 samples from each of four animal shelters. I tested each sample using the fecal flotation method. I used a sodium nitrate solution, which was denser than the parasite ova. The ova rose to the surface, where a cover slip was placed. I carefully transferred the cover slip to the microscope slide and viewed the specimen under the microscope, looking for hookworm and roundworm eggs. I recorded my results. I used gloves while performing my procedures.

Results

My data shows that population density has no affect on the prevalence of roundworm and hookworm infection. The most densely populated shelter had 200 dogs per kennel in a year and a 55% infection rate. The second most populated shelter had 160 dogs per kennel in a year, and an 80% infection rate. The third most densely populated shelter had 125 dogs per kennel in a year and a 20% infection rate. The least densely populated pound had an average of 95 dogs per kennel in a year, and a 60% infection rate. I also looked at population density based on the number of dogs in the kennel on the day the samples were collected. Again, I found no correlation. 54% of all dogs tested positive.

Conclusions/Discussion

My hypothesis was proved wrong. As my results demonstrate, I found no correlation between roundworm and hookworm infection and population density. I found that deworming seems to have the bigger impact upon this incidence. The shelter with the highest prevalence of infection was out of wormer. The shelter with the second highest prevalence tried to worm puppies only once. The shelter with the second lowest prevalence of infection does their best to worm all dogs once. The shelter with the lowest prevalence of infection worms all dogs at least once. This shows that deworming is very important in controlling parasite infection. A follow up project would be to study deworming programs closer and suggest improvements.

Summary Statement

My project demonstrated that population density has no affect on the prevalence of roundworm and hookworm infection in puppies.

Help Received

Dr. Sally Phillips granted me the use of her microscope.