



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> Andee L. Poole	<b>Project Number</b>  33228
<b>Project Title</b> <b>Investigating the Effects of Different Organic Spices in Repelling Flies on Bovine Farm Animals</b>	
<b>Objectives/Goals</b> The purpose of my science fair experiment is to compare the effects of different organic spices used to repel flies on bovine farm animals. <b>Methods/Materials</b> Mix 1 teaspoon of each spice,( ground nutmeg, ground cinnamon, ground mustard seed, ground ginger, and cayenne pepper) individually, with 1/4 cups of water in a measuring cup. Pour the mixture into the appropriate spray bottle. Repeat this 3 times for each trial on each bovine farm animal. Rinse the measuring cup after making each mixture. Run the bovine farm animals into the lead- up alley. Separate the cows from each other in the alley. Use the livestock markers and a tape measure to mark a 12x12 square on the bovine farm animal's back behind its right shoulder. Pour the spice mixture over the marked area. Record the time of the application on a piece of binder paper. For each individual animal, wait 10 minutes, using a stopwatch, until taking photographs of the intended area. Two photographs must be taken of the test area, this counting as two trials. Reapply the spice mixture after 5 minutes, and start the experiment again. Do not use a different spice on the same bovine farm animal. Repeat the trial 3 times on each cow for each spice. Release the animals from the alley after the trials are finished and move them to their pen. Transfer the photos from the camera to the computer to enlarge the images. Once the images are enlarged, count the number of flies on each bovine farm animal. Record the number of flies on each animal and average the 6 numbers. Compare the averages of each spice to the average from the control bovine farm animal to find which spice repelled the most flies. <b>Results</b> The results of my scientific investigation on the effects of different organic spices used to repel flies on bovine farm animals demonstrate that ground ginger repelled the most flies on bovine farm animals. <b>Conclusions/Discussion</b> From my results, I found that each spice repelled flies, but some more than others. The strongest spices, cayenne pepper, ground nutmeg, and ground cinnamon, repelled the least amounts of flies. However, the strong, bitter smell of ground ginger repelled the most flies.	<b>Abstract</b>
<b>Summary Statement</b> Investigate if different organic spices repel flies on bovine farm animals.	
<b>Help Received</b> Supervised by Dr. Troy S Ford, Doctor of Veterinary Medicine & Equine Surgeon. Mom helped cut and glue board.	