



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Emily E. Bardo	Project Number 22121
Project Title Thermostat of a HayBurner	
Objectives/Goals My objective was to test whether feeding hay would affect a horse's internal body temperature. My hypothesis was that the horse's internal body temperature would rise with the consumption of hay. Abstract Methods/Materials I tested twenty horses before and after feeding hay to test my hypothesis. First I took the horse's internal body temperatures using a livestock thermometer. Then I fed the horses and waited for two hours for them to eat the majority of the hay. After they had eaten I took the horse's temperatures again, to see if digesting the hay created heat. In my control group I didn't feed the horses in between taking their temperatures, but waited the same amount of time (two hours), to see if it was really the hay that was raising the horse's temperature, and not a diurnal cycle. Results In this study I found that a horse's temperature does rise with the consumption of hay. Here are my results. On average when the horses consumed hay, their internal body temperature rose .2 F to .3 F; the temperatures were normally between 99° F and 100° F. In my control test, the temperatures of twelve horses decreased (60%), five didn't change (25%) and three horse's temperatures went up (15%). In my regular tests, nine decreased (6%), eighteen stayed the same (15%), and one hundred and thirteen increased (81%). Conclusions/Discussion My results did support my hypothesis because the horse's temperatures did rise when they consumed hay. In conclusion when you feed a horse hay, their internal body temperature rises. I believe the reason for this is; hay creates heat when it is digested because it is quite fibrous so it is hard to digest. The benefit to the horse owner is, they will know that if they want to keep their horse's temperature up on a cold day, they need to feed the horse more hay. If I were to do any further studies, I would test to see if a horse's temperature rises if you give it grain. I might also do an evening test to see if I get the same results.	
Summary Statement My project was to test if feeding a horse hay would effect their internal body temperature.	
Help Received My parents helped me brain storm the project topic. Mr. Pittenger, my science teacher, helped me think through my variables, control group, and what type of graph to use. My mom mail ordered the digital veterinarian thermometer I used. Dad helped me write the legal release forms for the horse owners.	