



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> Alicia M. Copeland	<b>Project Number</b> <b>J1104</b>
<b>Project Title</b> <b>Which Saddle Pad, Supracor or Equipedic, Will Dissipate the Most Heat from a Horse's Back?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Since the dissipation of heat is a prime factor in the metabolic health and recovery of an endurance horse, the objective of this project is to determine which saddle pad will have the greatest effect on the reduction of heat retention on a horse's back while undergoing a strenuous workout.</p> <p><b>Methods/Materials</b> The normal back temperature of each horse was recorded before they were tested. Then they were taken one-by-one out to a field with four-inch deep sand and tested. The horses' testing consisted of riding them with each different saddle pad at seven miles an hour for two miles in the deep sand with their back temperature being recorded every half mile. Five middle-aged horses were tested with two saddle pads and a control (no pad) three times each. The two saddle pads were the Equipedic and the Supracor. To measure the temperature, an under-saddle thermometer was used. A Global Positioning System was used for keeping track of the speed and for assistance in keeping track of the miles traveled.</p> <p><b>Results</b> When the horses were performing without a saddle pad, the average temperature increases for each horse were 5.87 degrees, 6.46 degrees, and 7.8 degrees with an average of 6.71 degrees. When the horses were performing with the Equipedic Saddle Pad, the average temperature increases for each horse were 5.33 degrees, 8.86 degrees, 8.53 degrees with an average of 7.57 degrees. When the horses performed with the Supracor Saddle Pad, the average temperature increases for each horse were 5.53 degrees, 5.33 degrees, and 7.93 degrees with an average of 6.26 degrees.</p> <p><b>Conclusions/Discussion</b> The hypothesis stated earlier was incorrect. If a horse trots two miles in deep sand at seven miles per hour then the temperature under the Equipedic Saddle Pad will increase an average of five degrees less than when the same procedures are followed with a Supracor Saddle Pad. This is incorrect. The temperature under the Supracor Saddle Pad will increase at an average of 1.31 degrees less than the average increase under the Equipedic Saddle Pad. Even when a horse doesn't have on a saddle pad, the average increase is greater than with the Supracor Saddle Pad. Therefore, the Supracor Saddle Pad is the preferred saddle pad for endurance riders, as well as the competitive sport horse.</p>	
<b>Summary Statement</b> The intent of this project was to determine which saddle pad dissipated the most heat from a horse's back while undergoing intense physical conditioning	
<b>Help Received</b> My mother helped me saddle the horses, take care of the horses, take temperatures, and was interviewed for information regarding endurance riding. I interviewed my father for information regarding what effects temperature has on a horse. Richard Sacks sent me a cross section for my display. Information was	