CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
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Project Number
J1027

Project Title
The Amazing Equus Eye

Abstract

Objectives/Goals
My objective was to determine the peripheral vision of horses.

Methods/Materials
Using a true angle tool and straight edge, I set up a chalk configuration on flat ground where I had the horses stand while I tested them, waving a flag at different marked degrees. I had three other people assisting me to determine whether the horse could see the flag or not by closely examining eye movement and determining where the pupil was directed when the sunlight shown through it. Another way of determining if the horse could see the flag was by observing the whites of their eyes as their vision directed from front to back. I was standing at each marked degree waving the flag. The second person was making sure that the horse#s head was straight and their feet were aligned correctly. The third person was photographing the experiment, and the fourth was recording data, while all were observing the horse#s eyes. Four different horses were selected. Two were three years old, one was fifteen and one was seventeen. The two older horses are owned by my family and the other two belong to friends. All horses were tested twice in their normal environment to ensure accurate results.

Results
Three of the four horses tested demonstrated a range of peripheral vision from Oº- 157.5º on right and left sides during both tests. The fourth horse#s peripheral vision (the seventeen year old) measured from 0º-157.5º on the right side and slightly less from 0º-135º on the left on both of the two tests.

Conclusions/Discussion
My conclusion is that horses have near 360º vision (from 0º-157.5ºon both sides) except for directly behind them (180º). This proves why it isn#t safe to walk up directly behind a horse. They might kick a person if they are startled because they are out of their range of vision.

Summary Statement
My experiment was conducted to determine the range of equine vision.

Help Received
Mother and sister helped hold horses, father helped set up chalk configuration, Dr. B, DVM gave equine vision advise.