News Release

Stress Affects Horses in College as well as Humans

By Elizabeth Tollefson on Tuesday, July 7, 2015

Taking classes can be stressful; just ask a college student. Animals that may be part of a class also experience stress much like their human counterparts.

For Lais Garcia, a student from Brazil studying at the University of Minnesota Crookston, examining the stress level in horses has been part of a research project that began last January. "A team of three students under the direction of Assistant Professor Abdorrahman "Abdo" Alghamdi measured the stress levels of the horses in three equitation courses last spring," says Garcia.


Abdorrahman Alghamdi and Lais Garcia with horse

The research may help faculty determine how the class schedules should be arranged to minimize or prevent injuries and overstress on the horses. "Stress can be good for us and for our horses but only up to a certain level," Garcia explains. "To avoid injury and keep stress at a healthy level, we checked vital signs like heart rate and respiratory rate over the semester to see exactly what was happening for the horse."

Overstress can also lead to horses' behavioral changes such as refusal to work or making more errors, which translate to lower performance—in other words, more errors and thus more penalty points that cost the rider a placing.

During western riding class, dressage class, and during western team riding practice, Alghamdi and his students would gather data. "Based on the coaches expectations, the semester was divided into four stages, each three weeks long, and each stage was expected to be associated with increased workload intensity as students learn the basics and begin to ride more," Garcia says. "During each stage and for each of the three classes, we collected data at the beginning and at the end of each class and at 10-minute intervals following the end of the class to see how high the heart rate, respiratory rate, and body temperature were and how long after the end of the class it would take for these parameters to return to the normal resting values. We also tracked the name of the horse so we could see how riding classes and frequency of use affected that particular horse."

The data will be analyzed in conjunction with data being analyzed by other students in a different project where horses in all classes and during these four stages were video-taped. These video tapes will be analyzed for the type of gait and the duration of each gait.

"We hope the results of these two projects put together will give us a more objective idea of how stressful a class is/can be, and that in turn, it will help us improve scheduling," Alghamdi says. "We want to know how often and for how long a horse can be used in riding classes without causing any undue or undesired effect."

Like humans, horses respond differently to stress and some handle it much better than others. Almost 20 horses were involved in the study, and Garcia said it was interesting to see the impact the various levels of stress had on the animals.

"Some of the classes were more stressful than others as you might suspect," Garcia says. "And, it is important to have appropriate rest breaks for the horses between those classes. The equestrian team coaches were very helpful as we gathered information for the study."


Lais Garcia with Gabriel

The research work with Alghamdi is one of the reasons Garcia chose to stay in Crookston to complete the required academic training before she goes back to Brazil to complete her last year and a half of veterinary school.

Her favorite class at the U of M Crookston was equine exercise physiology. When she completed it last December, she asked Alghamdi if they could work on a project that would take her deeper into the study. "He offered me the opportunity for this research project and a chance to continue working with him this summer," she says. "It was an opportunity I couldn't pass up. I knew that there was so much more I could learn from him."

Analyzing the statistics has kept Garcia busy the first part of the summer. The last half before she returns to Brazil in August will be spent running experiments that look at reproduction data on a protein in the seminal plasma that affects the sperm in the mare's uterus.

"I have wanted to be a veterinarian since I was a preschooler and my time on the Crookston campus has been so beneficial," Garcia says. "I have learned a great deal and working with horses has been an important part of my education here."

The University of Minnesota Crookston now delivers 33 bachelor's degree programs, 22 minors, and 36 concentrations on campus as well as 14 degree programs entirely online. These degrees are offered in the areas of agriculture and natural resources; business; liberal arts and education; and math, science and technology. With an enrollment of 1,800 undergraduates from more than 20 countries and 40 states, the Crookston campus offers a supportive, close-knit atmosphere that leads to a prestigious University of Minnesota degree. "Small Campus. Big Degree." To learn more, visit www.umcrookston.edu.

PHOTOS: At right, left to right, are Assistant Professor Abdorrahman "Abdo" Alghamdi and Lais Garcia.

At left: Lais Garcia with one of the horses in the study.

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