

Diet study may help save giant panda.

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2003 MAY 19 - (NewsRx.com & NewsRx.net) -- For many years the Texas Agricultural Experiment Station's Grazingland Animal Nutrition Lab has analyzed fecal matter taken from livestock and wildlife, but never before has it attempted to study samples from giant pandas. And what they discover could help prevent the animal's extinction, as well as be applied to livestock and other wildlife.

"We may also find something out from this that we don't anticipate. That might be good for livestock," said Doug Tolleson, director of the Grazingland Animal Nutrition Laboratory at Texas A&M University, one of three participating project partners that include Mississippi State University and the University of Arkansas at Little Rock.

They all are working with the Memphis Zoo, the new home to two giant pandas - Le Le (pronounced Luh Luh) and Ya Ya. They arrived at the zoo from China on April 7, 2003, as part of a project to learn more about the rare animal.

There are thought to be fewer than 1,000 giant pandas left in the wild, making it one of the most endangered species on the planet. The pair at the Memphis Zoo is the fourth pair of pandas on exhibit from the United States, and the ninth pair in the world outside of China.

"The ultimate goal of the zoo's conservation program is to preserve and restore giant panda habitat," said Dr. Chuck Brady, president of the Memphis Zoo. "But before this is done, it is important to understand the panda's dietary needs so the correct choices for habitat conservation can be made."

The pandas rely on a steady diet of bamboo and lots of it, consuming about 100 pounds per day. The research focuses on captive and field research in an attempt to understand the nutritional ecology and foraging strategy of the species. Researchers will analyze a diet of bamboo as well as a supplemental diet.

Tolleson said his lab will analyze the fecal samples, "trying to develop diet quality predictions to help maintain them in captivity, but the big picture will be to develop a diet program to help those living in the wild in China."

Fecal samples will be collected at the Memphis Zoo and delivered by mail to the GANLAB in College Station. There they will be analyzed using Near Infrared Reflectance Spectroscopy, which measures chemical bonds in a variety of organic compounds. Researchers hope it will lead to more accurate and immediate information about the giant panda diet.

Field work will be done in the Qinling Mountains in China. Researchers there will try to understand why the panda's diet is so strict.

The pandas have teeth capable of eating not just the leafy stems that extrude from the stalk, Tolleson said.

"It's interesting. They eat about 18 hours a day, and then sleep the rest. They grab a hand full of it, then hold it and eat it," he said. "They can also grab a stalk and crack and crunch. They have teeth that are capable of peeling back the stalk to get to the spongy part."

To mimic the process, Tolleson said he had to do some experimenting of his own. After locating some bamboo near the Texas A&M campus, he flipped open his pocket knife and began to peel back the stalk - just like the panda. Then he took the remains to the lab where they were put through a grinder and analyzed.

The panda lives in groves of bamboo and is "pretty rare to be seen," Tolleson said. "The pandas are digestively like a carnivore as opposed to a cow or deer," he said. "There's no pre-stomach mechanism for bacterial digestion. What they are getting out of it nutritionally is by chewing and swallowing and what goes through the stomach."

Le Le and Ya Ya seem to be adapting to their new home at the Memphis Zoo quite well, said Tolleson after returning from a visit. "To look at them, they look as happy as larks," he said. "They are eating well. The female interacts more with people. The male lies around and eats. You can imagine the kind of jokes made about that."

Tolleson said studying the panda diet could lead to some new and exciting discoveries.

"I think it's going to open our eyes to looking at nutrition like we've never done before," he said. "We're going to think differently because these animals are different."

This article was prepared by Life Science Weekly editors from staff and other reports.