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UDP Focus: Prasad's Work All About Feeding the Future

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‘Chocolate pie guy’ shows how exercise affects the way our bodies process high-fat meals

By Tiffany Roney

Nutrition researcher Sam Emerson is gaining a slice of research fame by asking people to eat pie.

Emerson, a doctoral student in food, nutrition, dietetics and health at Kansas State University, and his team had volunteer eat chocolate pie to document effects on glucose, lipids and triglycerides for three groups of people: active adults, ages 18-55; inactive adults, ages 60-plus; and inactive adults, ages 60-plus.

The researchers found the largest decreases between active and inactive persons, including a 76-year-old runner and an inactive man: 10 years younger. The team measured triglycerides, a type of fat in the blood that, at higher levels, can increase the risk of heart disease and signal a metabolic disorder. The inactive man’s triglycerides increased more than three times over pre-pie levels, whereas the active man’s triglycerides hardly changed.

Emerson said these findings show the benefits of a lifetime of physical activity.

“The thread connecting all my studies is the examination of how nutrition and exercise relate to human health in true-to-life situations,” Emerson said. “Obesitization and movement have a powerful effect on quality of life.”

This spring, Emerson will present the results of the pie study at the K-State Graduate Research, Arts and Discovery Forum and the American College of Sports Medicine’s annual meeting. In addition, he will share findings from another study he conducted at the American Society for Nutrition’s annual meeting.

Emerson is the primary author of five papers and co-author of eight papers published in the Journal of the International Society of Sports Nutrition, the British Journal of Nutrition, the American Journal of Clinical Nutrition, and the American College of Sports Medicine’s Journal of Sport and Science.

By Beth Bohn

P.V. Vara Prasad believes research goes beyond finding solutions to problems; it’s also about preparing the next generation of scholars and practitioners.

“The Kansas State University distinguished professor of agronomy and new fellow of the American Association for the Advancement of Science enjoys teaching and research equally.

“Talent they are complementary,” Prasad said. “Conducting good research requires that you keep up with new science and recent literature. This allows you to teach students with good material and explain the science behind the principles. Interactive teaching also allows students to ask some novel and critical questions, which can help you to design your research and develop hypotheses to find answers and viable solutions.”

Research and teaching are the backbones of Prasad’s latest challenge as principal investigator and director of the university’s Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification.

The lab, funded by a $30 million grant through the U.S. Agency for International Development’s Feed the Future program, seeks ways to increase food production with limited resources and reduce stress on the environment. The lab is fully established and working on projects in its focus countries of Bangladesh, Ethiopia, Burkina Faso, Senegal, Tanzania and Cambodia.

I am proud that we are working with smallholder farmers to improve their livelihoods,” Prasad said. “We use the model of collaborate, learn and adapt. Our lab brings together about 100 scientists from 40 different organizations in 10 countries to work together and create an environment and a culture that facilitates innovative research and education. We are building the capacity of the next generation of scholars and practitioners by training, and we are providing knowledge to students, teachers, scientists, farmers and policymakers.”

The lab’s strong focus on sustainability is key to the future of farming in the countries it serves, Prasad said.

“We want to ensure that we safeguard our environment and natural resources so that the next generation can survive and thrive,” Prasad said. “The biggest challenge is how do we translate this knowledge generated from research to practices that will improve productivity from existing land and will maintain impact on environment and on food and nutritional security?”

Prasad’s research looks at understanding responses of food grain crops to climate change and developing crop, water and soil management strategies for efficiency and improved crop yields.

Since joining K-State in 2005, Prasad has received $62 million in grant funding to support research, education and extension activities from local, national and international agencies. He has published more than 100 peer-reviewed journal articles and book chapters, and his research has been cited more than 2,100 times. He also has mentored and trained more than 100 research scholars and graduate students.