

A photograph of Chandradhar Dwivedi is available at this link:

<http://agbiocom.sdstate.edu/photos/Dwivedi1532.jpg>

Cutline: Distinguished professor Chandradhar Dwivedi, head of SDSU's Department of Pharmaceutical Sciences, directed a study that looked at the chemopreventive effects of flaxseed.

For release: April 1, 2009

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SDSU research: Flax in the diet means fewer tumors

BROOKINGS, S.D. — New research from South Dakota State University offers evidence that including flax in the diet may help prevent colorectal tumors or keep tumors from growing as quickly when they do form.

Distinguished professor Chandradhar Dwivedi, head of SDSU's Department of Pharmaceutical Sciences, directed the study by departmental graduate student researchers Ajay Bommareddy, Xiaoying Zhang and professional doctor of pharmacy student Dustin Schrader.

Other participating researchers were assistant professor Radhey Kaushik, who has a joint appointment in SDSU's Department of Veterinary Sciences and the Department of Biology and Microbiology; professor David Zeman, head of the Department of Veterinary Sciences; and professor Duane Matthees of the Department of Veterinary Sciences.

"The study was conducted in a special strain of mice that develop spontaneous intestinal tumors due to mutation in a gene. This model is developed to investigate the effects of cancer preventive agents on genetically predisposed individuals," Dwivedi said. "Results indicated that mice on diets supplemented with flaxseed meal and flaxseed oil had, on average, 45 percent fewer tumors in the small intestine and the colon compared to the control group."

The scientists published their research findings in February in the academic peer-reviewed international journal *Nutrition and Cancer*. "The results show that tumors in dietary flaxseed-treated groups, besides being few, were also very small in size when compared with what we found in the other experimental diets," Dwivedi said.

The study has important implications for human health, since colorectal cancer is the third-leading cause of cancer deaths in the United States. Current statistics from the American Cancer Society showed that in 2008, 108,070 new colon and 40,740 new rectal cases were diagnosed in the United States, while colorectal cancers caused 49,960 deaths.

Flaxseed contains a high percentage of alpha-linolenic acid, omega-3 fatty acid, and lignans, a group of chemical compounds found in plants that act as antioxidants.