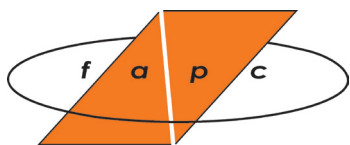


Food & Agricultural Products Center



FLASH!!



June 7, 2007

FAPC Research Looks at Crossbreeding in Sheep

STILLWATER, Okla. - Research conducted at the Food & Agricultural Products Center on the campus of Oklahoma State University has suggested Katahdin sheep may be a useful foundation breed for crossbreeding programs in U.S. lamb production.

The higher concentration of beneficial conjugated linoleic acids, or CLAs, and the lower ratio of omega-6 /omega-3 polyunsaturated fatty acids, or PUFAs, found in meat from Katahdin sheep are characteristics that may be passed along to crossbred offspring.

“The CLAs and omega-3 PUFAs have potential health benefits, such as being anticarcinogenic and antidiabetic,” said Guadalupe Davila De El Rassi, FAPC analytical chemist. “Nutritionists are advising people to consume more foods having enhanced amounts of these compounds.

Food products from ruminants are the major dietary source of CLAs for humans. Although meat is a good natural source of CLAs, only about 25 to 30 percent of total CLA consumption comes from meat.

“If CLA content of meat products was increased, then human intake of this beneficial fatty acid would increase also,” said Veneta Banskalieva-Dobrev, FAPC research specialist.

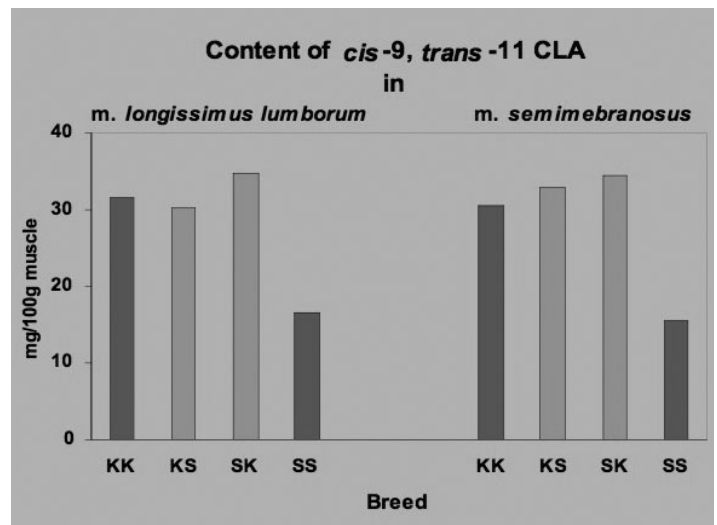
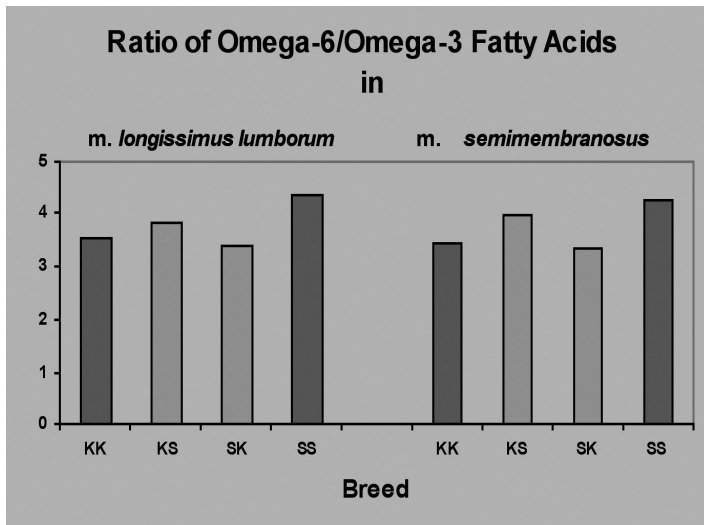
The Katahdin breed of sheep is known for its adaptability and superior meat quality in addition to being low-maintenance. The breed is growing in popularity in the Southern states because of its freedom of wool, making it more adaptable to warmer temperatures.



“The breed characteristics of Katahdin sheep combined with the growth and muscling of exciting U.S. breeds should produce superior market lambs,” Davila De El Rassi said.

However, little data regarding CLA content of meat from Katahdin sheep versus other sheep breeds have been published, so FAPC researchers studied the fatty acid composition of two different muscle types in Katahdin sheep; Suffolk sheep, a common U.S. breed; and their crossbred offspring.

The animals were crossbred and raised at Fort Reno Grazing Lands Research Station in El Reno, Okla. Researchers in the FAPC analytical chemistry laboratory analyzed the fatty acid composition of two repre-



KK: Katahdin SS: Suffolk KS: Katahdin x Suffolk SK: Suffolk x Katahdin

representative muscles for meat quality, the m. longissimus lumborum and m. semimembranosus.

“We found that the content of cis-9, trans-11 CLA, the ‘good’ fat, in Katahdin muscles was two times more than that of Suffolk muscles,” Banskalieva-Dobрева said. “In the crossbred animals, we observed results similar to the Katahdin lambs—twice more CLA content than in the Suffolk muscles.”

In addition to providing more essential CLAs, the intramuscular lipids of Katahdin and Katahdin-Suffolk crosses had less omega-6 PUFAs than did the intra-

muscular lipids of Suffolk, reflecting a ratio of omega-6 PUFAs:omega-3 PUFAs of less than four, which is recommended to be beneficial to human health, Banskalieva-Dobрева said. This ratio in Suffolk sheep was slightly above four.

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of \$113.40 for 810 copies. 0607