

University-developed omega-3-rich ground beef available soon

February 4 2013, by Greg Tammen

Thanks to Kansas State University research, part of a healthy diet can include a hamburger rich with omega-3 fatty acids.

Jim Drouillard, professor of animal sciences and industry, developed a technique that enriches ground beef with omega-3 fatty acids—fatty acids that have been shown to reduce heart disease, cholesterol and [high blood pressure](#). The enriched ground beef is named GreatO Premium Ground Beef and is being sold through Manhattan, Kan.-based company NBO3 Technologies LLC. It will be available mid-February at select retailers in Buffalo, N.Y., and expand to leading retailers and restaurants nationwide later this year.

Omega-3 fatty acids are found in fish and [plant oils](#). The U.S. currently does not have a recommended daily intake of omega-3s, though many doctors and nutritionists recommend between 1,200-1,600 milligrams daily, depending on a person's age and health.

A quarter-pound hamburger made of the enriched ground beef has 200 milligrams of omega-3s and tastes the same as regular ground beef, Drouillard said. This makes the ground beef an alternative for people who want to add or increase their omega-3 fatty acids intake but do not want fish or supplements to do so.

"As a society, Americans' consumption of fish, especially fish that contributes to these omega-3 fats, is quite low compared to other proteins," Drouillard said. "Reasons for this include cost, access to fish

and personal preference. Americans do, however, like hamburgers. So if we can give people a hamburger that is rich in omega-3s, it's an alternative form of a product that they already eat and does not require a [lifestyle change](#), which is difficult to make."

The health benefits of omega-3s are not limited to humans. Studies show that dairy and [beef cattle](#) with an enriched diet of flaxseed and other omega-3 rich grains have fewer [respiratory diseases](#). The cattle also have higher [fertility rates](#), which helps offset infertility among [dairy cattle](#).

The technology to enrich ground beef with omega-3s is a spinoff of flaxseed research Drouillard began in 1998. Drouillard and his students studied flax for several of its omega-3 fatty acids that may suppress inflammation and reduce diabetes in cattle. Research showed that omega-3 levels dramatically increased in the cattle as more flaxseed was introduced into their diet.

Keeping the omega-3s from becoming saturated fats in cattle's digestive system is a challenge, however. Microorganisms in the rumen—the largest chamber in the cow's stomach—modify most of the ingested fats and turn them into saturated fats. This causes ground beef to have low levels of omega-3s. Christian Alvarado Gilis, a doctoral candidate in animal sciences and industry, is researching how to improve omega-3 levels in cattle diets to further enhance the fat profile of beef. Gilis is from Chile.

According to Drouillard, substituting omega-3 fatty acids for saturated fats does not change the ground beef's flavor.

"Knowing that there are a lot of desirable flavor characteristics associated with the fat in beef, we performed tons of sensory panel tests with Kansas State University's meat science faculty and with the department of human nutrition throughout the years to ensure that the

flavor is not compromised," Drouillard said. "We found that our panelists were never able to detect appreciable differences in the flavor profiles of the omega-3 rich beef and non-omega-3 beef, even though the fats are quite different."

The owners of NBO3 Technologies LLC have worked closely with Drouillard in developing the concept, and after more than a decade of research on improving the enrichment process, have started to distribute omega-3 enriched ground beef to retailers and food vendors.

The ground beef is part of the company's line of omega-3 enriched foods, which includes pork, chicken, cheese, milk, butter and ice cream. It will be the first ground beef to carry the U.S. Food and Drug Administration's seal of approval for containing omega-3 fatty acids.

Todd Hansen, CEO of NBO3 Technologies LLC, said consumer response has been positive in test markets. "We have to leap two hurdles with GreatO Premium [Ground Beef](#), which are that the [omega-3 fatty acids](#) are really in the beef and that it doesn't change the flavor," Hansen said. "Based on our consumer response, we've cleared those hurdles. We really believe in the health aspect of this product and are using the slogan 'When Every Bite Counts' to emphasize that. I can't wait for consumers to have it available to them."

Provided by Kansas State University

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