

Researcher turns turkey away from the dark side

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"White meat or dark?" That question, now as much a part of holiday traditions as rum and eggnog, will be asked again and again at dinner tables this Christmas, as carving knives prepare to slice into the bird's crisp skin.

For the majority of family and friends (except perhaps the eccentric uncle who always grabs the drumstick), the answer will be "white." That means a lot of excess meat in households without an obliging dog to take care of the less-desirable dark meat. Such a waste ... wouldn't it be wonderful if someone could figure out how to turn dark meat into white?

It sounds far-fetched, but that's exactly what Dr. Mirko Betti, a University of Alberta professor of nutritional science, has succeeded in doing. The Italian-born scientist took on the dark-to-white-meat challenge as his PhD project at the University of Georgia, under the guidance of Dr. Dan Fletcher, considered one of the world's foremost poultry researchers. Now armed with the knowledge gained through his own work as well as Fletcher's five years of research, Betti arrived at the U of A to continue the project and hopefully turn it into a commercial operation.

How can turkey meat lose its dark side? Betti says the process is actually quite simple, similar to that used to produce synthetic crab meat. First, dark meat is minced and put on ice. Water is added and the now mushy meat is put through several extraction processes to separate and remove layers of the two ingredients that make dark meat look and taste

different than white; myoglobin, which gives dark meat its characteristic colour, and fat. Dark meat is about six per cent fat compared to 1.5 per cent in breast meat.

What's left looks like a meaty milkshake that's the same colour as white meat, with a similar calorie count. Betti describes it as a "protein concentrate," and while you can't slice it, the paste can be used as a base to create foods that have chicken as their main ingredient.

"It would be ideal for something like chicken nuggets," said Betti.

McDonalds needn't worry about new competition just yet. Betti admits the final product still needs work. "It's a challenge ... right now it tastes more like tofu."

Betti's research has already overcome many obstacles, most notably the problem of reducing the amount of meat destroyed during extraction. His next goals are to ensure the product is completely safe for human consumption and can pass federal food regulations, while working on "sensory evaluations." The newly created white meat needs to pass consumer taste tests, perhaps the toughest tests of all.

Betti expects to spend another three years refining the final product before taking it to market, but considers that will be time well spent. "Right now much of the dark meat produced in North America is exported to the Middle East and Russia, because there is no consumer demand for it here. Consumers associate dark meat with fat and high cholesterol, and white meat with leanness and health. Even though dark meat is an excellent protein source, consumers have rejected it, making the price of dark meat very low, less than a third of breast meat. Turning dark meat into white will open new markets and revenue sources."

On a personal level, Betti says he likes dark meat just as much as white,

but realizes that puts him in the minority in North America. "It's the paradox of white versus dark. People think white is good, dark is bad. It's just an impression, but it's widespread."

Source: University of Alberta

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