

## August 2019—AQUACULTURE PERSPECTIVES

Copyright © 2019 Fisheries Technology Associates, Inc. All rights reserved. Copying and distributing or reprinting for purposes of resale without expressed permission of the author is prohibited.

Beyond Meat represents a challenge to aquaculture (but is it really?)

by Bill Mancini

When the stock of the meat-alternative company Beyond Meat (symbol BYND) debuted on the NASDAQ stock exchange on May 2, 2019, there were immediately high expectations. High demand by some consumers for alternatives to traditional animal-based types of protein signaled optimism for the company founders and their ambitions.

I had not taken much notice of the company or its products before the initial public offering. But I am generally a curious person and was eager to learn more of what was behind all of the excitement. Indeed, I wanted to taste this “revolutionary concept.”

Recently, I visited a local market and purchased a package of Beyond Burger. The two frozen patties—8 ounces total net weight—were heat-sealed in a plastic container, with a “diaper” beneath each to absorb moisture, and further wrapped in a cardboard display sleeve. (As an aside, this seems a bit excessive for a company that might be focusing on a customer base that is sensitive to over-packaging and waste volumes, but I digress.)

I thawed the burgers and broiled them, just as I would regular beef patties. They sizzled, they released what appeared to be a light-colored oil, and browned after several minutes.

After cooking and to make the eating experience as similar to beef burgers as possible, I added some light condiment and buns, topped them with some tomato slices, and down the hatch they went.

My palate was adequately impressed. The taste was good, as well as the texture, which can be difficult if you’ve tasted other attempts to imitate beef.

Despite my relatively positive culinary experience, the next step of my evaluation was truly the most revealing. I read the ingredients label and Nutrition Facts.

In doing so, and given my assumption that the health of the consumer was a driving force in the development of Beyond Meat products, I could not have been more wrong, and was really quite stunned by what I read!

Here's the ingredients list—verbatim.

“Water, pea protein isolate, expeller-pressed canola oil, refined coconut oil, contains less than 2% of the following: cellulose from bamboo, methylcellulose, potato starch, natural flavor, maltodextrin, yeast extract, salt, sunflower oil, vegetable glycerin, dried yeast, gum arabic, citrus extract (to protect quality), ascorbic acid (to maintain color), beet juice extract (for color), acetic acid, succinic acid, modified food starch, annatto (for color).”

The ingredients list is followed by this warning.

“Peas are legumes. People with severe allergies to legumes like peanuts should be cautious when introducing pea protein into their diet because of the possibility of a pea allergy. Contains no peanuts or tree nuts.”

In an attempt to reassure the likely target audience, the package also states the product is certified vegan, is soy-free, gluten-free, and non-GMO. Well, thank goodness for all of that (I say with my tongue firmly planted in my cheek)!

The real nails in the entire coffin for this product come in the form of the Nutrition Facts disclosure.

One 113-gram patty contains a total of 270 calories. A whopping 170 calories of the 270 come from fat. Total fat equals 20 grams, or 31 percent of the daily value. Saturated fat equals 5 grams, or 25 percent of the daily value. Trans-fat equals zero. Monounsaturated and polyunsaturated fats are not specified on the package.

Cholesterol content equals zero. Sodium content equals 380 milligrams, or 16 percent of the daily value. Potassium content equals 340 milligrams, or 10 percent of the daily value.

Total carbohydrate equals 5 grams, or 2 percent of the daily value. Dietary fiber equals 3 grams, or 13 percent of the daily value. There are zero additional sugars.

One patty contains 20 grams of protein, or 32 percent of the daily value, no vitamin A, 6 percent daily value of vitamin C, 2 percent daily value of calcium, 30 percent daily value of iron, and 25 percent daily value of phosphorus.

When I compare a Beyond Meat burger to regular, aquacultured tilapia fillets, some of the differences are stark.

One 113-gram serving contains a total of 145 calories, with very few of those calories contributed by fat. Total fat equals 3 grams, or 4 percent of the daily value. Saturated fat equals 1 gram, or 5 percent of the daily value.

Cholesterol content equals 65 milligrams, or 21 percent of the daily value. Sodium content equals 64 milligrams, or 3 percent of the daily value.

Total carbohydrate content is zero, one serving contains 30 grams of protein, 2 percent of the daily value of calcium, 4 percent of the daily value of iron, 9 percent of the daily value of magnesium, and 41 percent of the daily value of vitamin D.

While this comparison shows that readily available tilapia fillets are not perfect or ideal, they certainly are in my opinion decidedly nutritionally favorable to a Beyond Meat burger.

If we lift the proverbial curtain even further, we can see some other glaring and undesirable realities. Not only is a Beyond Meat burger high in saturated fat and high in sodium, the only protein it contains is derived from peas—a plant and a potentially allergenic legume, no less.

My friend and nutritional expert, Dr. Loren Cordain, put it best in a recent e-mail to me about the Beyond Meat burger. “The potassium/sodium ratio (340 mg/380 mg) =0.89 represents an impossible value not found in virtually any natural foods (plant or animal). Yes, the amino acid profile of legumes is imbalanced and not close to what is found in real meat or animal products. Further the addition of sunflower oil and refined coconut oil gives this product an n3/n6 (omega) fatty acid balance which is totally uncharacteristic of any meat, fish or real animal food.”

Without the benefit of education in the arenas of human nutrition and optimal diets, the vast majority of consumers are sorely lacking in the ability to objectively evaluate the appropriateness of Beyond Meat products in their routine diet choices.

For most of these well-intentioned people, it is wishful thinking and an assumption that Beyond Meat has the consumers’ best nutritional interests in mind. Instead, I view their efforts as pandering to an audience that wants to “do the right thing,” “avoid unhealthy meat,” “save the animals,” “help the planet,” or numerous other points of focus, and are predisposed to believe that a product like the Beyond Meat burger is actually health food. In short, it makes them feel good about what they eat. But that is all.

The truth be told, it’s more of a lifestyle choice than a health choice, as the facts suggest here.

As Dr. Cordain pointed out, the protein amino acid balance is poor (i.e., skewed toward plant proteins rather than more optimal animal proteins), and the fatty acid balance is

horrible, with way too much omega-6 relative to heart-healthy omega-3, which is very different than what we see typically in fish and seafood. This imbalance favors an inflammatory physiological response to the product. Throw in way too much sodium relative to potassium, and you have a potential recipe for hypertension, increased cardiovascular disease risk, and other problems.

It is clear in my mind that Beyond Meat made a strategic decision to focus on taste, palatability, and protein source rather than nutrition. This sells more burgers (and by the way, they sell sausage and other meatless products). But they understand the nutritional consequences of their choices just as we do. I am not revealing profound secrets here!

When it comes down to it, a decision to avoid high-quality animal protein comes with unavoidable negative consequences, with the highest on the list being nutritional.

I don't blame Beyond Meat for trying to bridge the gap between a non-meat menu and good nutrition. Maybe in the future some company or someone will make that a reality. But it is disingenuous for them to offer the prior and claim any nutritional advantage.

*Bill Mancini is president of Fisheries Technology Associates, Inc., a Fort Collins, Colorado-based aquaculture, aquaponics, and fisheries consulting firm. He may be reached at 970-225-0150 or <[mancini@ftai.com](mailto:mancini@ftai.com)>.*