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Plant-Based 'Meat' and 'Fish' May Be the Future. But How Do They Taste?

Starting today, White Castle will serve the vegan Impossible Burger in 140 locations. Cookbook author Alison Roman tried it out, along with 'shrimp' made from fungi, 'salmon' made from algae and more

By Alison Roman

April 12, 2018 6:01 a.m. ET

When I was in high school, I made the bold and noble choice to become a vegetarian for the rest of my life (or as it happened, about three years). I loved vegetables, so a meatless diet wasn't that daunting, with one unfortunate exception: the tacos at Jack in the Box.

Around this time, I caught wind of a rumor that the meat in those tacos was being cut—and possibly even replaced by vegetable protein. Imagine my teenage delight upon learning that my guilty pleasures were basically vegetarian.

Spoiler alert: They were not.

But that rumor was partially true: For years, Jack in the Box has added vegetable protein to its famous tacos (the company won't say exactly how much), and meat-loving Americans still consume 554 million each year.

Turns out Jack in the Box was ahead of its time.

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PREVIEW →

Today, 140 White Castle locations began serving the vegan Impossible Burger, part of a new wave of plant-based proteins that taste, cook and, in some cases, bleed like the animal version. Unlike tofu dogs and Boca Burgers, these products are aimed squarely at carnivores. The goal isn't to placate your vegan cousin at family barbecues. The goal is to save the planet—or at least mitigate the damage that commercial fishing and cattle farming are doing to the environment. To persuade red-blooded Americans to pack their grills with pea protein, these plant-based substitutes will have to taste good—and I'm happy to report that many do. Some, however, are

still in beta when it comes to flavor. Does “shrimp” made from algae taste better than shrimp? Not yet, but it’s still better than overfished oceans. I’ll take it. You should too.

The Product: Beyond Sausage

WHAT IT IS: Pea, fava and rice protein in an alginate (derived from algae) casing

WHAT IT’S IMITATING: Ground-pork sausage

WHERE TO FIND IT: Select grocery stores beginning in mid-April

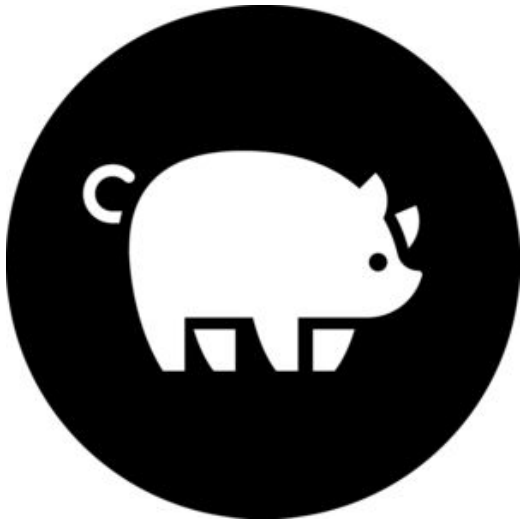


ILLUSTRATION: NICHOLAS SLATER

THE VERDICT: If you’re like me, you have no idea what’s actually in your kielbasa or Italian hot links. And generally speaking, you’re OK with that. But Beyond Meat wants you to know how its sausage, pictured above, is made. The company spent a year and a half developing the world’s first plant-based version. The results? Pretty great. The pleasantly springy texture is spot on; the flavor is passably porky. The sausages come in Original Bratwurst, Sweet Italian and Hot Italian (my favorite); it turns out that both pork and pea protein taste better when seasoned with fennel seeds and chili flakes. Substitute these for some of these some honest-to-God pork links, and add a smear of yellow mustard and a side of grilled

onions. No one will be the wiser.

Pro Preparation Tip: The alginate casing tends to split if your skillet or grill is too hot, so rotate frequently to promote even browning and prevent breakage.

The Product: New Wave Foods Shrimp

WHAT IT IS: Algae extract, micro algae and other plant-based protein

WHAT IT’S IMITATING: Frozen shrimp of the plain and fried variety

WHERE TO FIND IT: Select restaurants on the West Coast and in New York City

THE VERDICT: The taste of a shrimp is determined by that shrimp’s diet, generally a mix of sea plants and algae. So it stands to reason that “shrimp” synthesized from sea plants and algae should taste like the real thing, right? The answer is: sort of. New Wave offers its plant-based shellfish in two forms: Plain (think boiled and peeled) and Crispy (pictured here; think breaded and fried). The Crispy version—coated in delicious panko bread crumbs—tastes like delicious, salty bread crumbs. The Plain ones, however, have a way to go before they can pass as the genuine article. With their squishy texture and too-bright reddish-pink hue, they more closely resemble crawfish tails than shrimp. To their credit, they do taste faintly of the sea without being overly fishy, which is no easy feat.

A SHRIMP FOR THE MASSES: Commercially caught shrimp are as fraught as they are popular, thanks to environmentally devastating trawling practices and the slave-labor scandals plaguing the industry. “In addition to solving a sustainability problem,” says New Wave Foods co-founder Dominique Barnes, “we’re trying to make a shrimp that everyone can love.” While her product contains 100% less shrimp than the leading shrimp, Barnes hopes it will reach a



The taste and texture of shrimp are difficult to imitate. Fried panko bread crumbs, lemon and tartar sauce help complete the illusion. PHOTO: AMANDA RINGSTAD FOR THE WALL STREET JOURNAL; SET STYLIST: GOZDE EKER; FOOD STYLIST: MICHELLE GATTON/HELLO ARTISTS



ILLUSTRATION: NICHOLAS SLATER

wider audience, including people with shellfish allergies and high cholesterol, vegans and those keeping kosher.

The Product: Just Scramble

WHAT IT IS: Mung bean protein

WHAT IT'S IMITATING: Raw, beaten eggs

WHERE TO FIND IT: Select San Francisco and Hong Kong restaurants; select grocery stores starting later in 2018

THE VERDICT: “Eggs” from a plastic bottle? Believe me, I fully expected to dislike this product. But in reality, it’s kind of good.

Texturally speaking, Just Scramble is a dead

ringer for the real thing when cooked properly (low and slow). But under the surprisingly eggy flavor is a faint and unfortunate sweetness. This comes from the mung beans, which are full of polysaccharides—a complex carbohydrate that reads sweet on our tongues. Ben Roche, the director of product development at Just and the developer of Just Scramble, is the first to admit that these “eggs” are a work in progress. “We are constantly tinkering, improving the flavors and textures,” says Roche, who also created the company’s sorghum-containing cookie dough. The sweetness of Just Scramble is hardly a deal breaker and is easily fixed with a few dashes of your preferred hot sauce.



This fluffy scramble never saw the inside of shell. PHOTO: AMANDA RINGSTAD FOR THE WALL STREET JOURNAL; SET STYLIST: GOZDE EKER; FOOD STYLIST: MICHELLE GATTON/HELLO ARTISTS



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The Product: Terramino Salmon

WHAT IT IS: Cultured fungi protein and algae for natural color and flavor

WHAT IT'S IMITATING: Salmon burgers and, later, fillets

WHERE TO FIND IT: Select restaurants and grocery stores in 2019

THE VERDICT: The “salmon” from Terramino Foods is still in beta, but in the year since the company launched, its co-founders—two 20-somethings fresh out of Berkeley—have managed to imitate the pale-pink color and flaky texture of America’s favorite fish. They’re still dialing in the flavor, exploring the fine line between something that tastes like fish and something that tastes fishy, but when it comes to sustainable seafood, this is a company to watch.

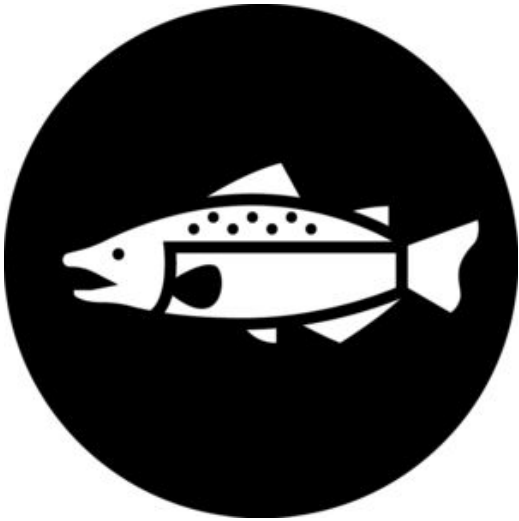


ILLUSTRATION: NICHOLAS SLATER

FISH MADE FROM FUNGI? Terramino Foods uses koji—a mold that’s a key ingredient in soy sauce, miso and other fermented foods—to culture its protein. “Unlike animal cells, fungal cells are able to synthesize their own protein out of really basic nutrients,” Terramino co-founder Josh Nixon says. “You have to feed an animal a lot of protein to get a small amount out.” The fungi generate protein from almost nothing, which is unquestionably more sustainable than fishing or even fish-farming.

The Product: The Impossible Burger

WHAT IT IS: Wheat, soy and potato protein



Terramino Foods, the maker of this ‘salmon’ burger, recently completed the SOSV-funded accelerator program at IndieBio. SOSV, a venture-capital firm, has also mentored companies like New Wave Foods and Memphis Meats. The hearty, woody version of the Impossible Burger—with mushroom purée, sherry onions and truffle cream—is on the menu at Saxon & Parole in New York City. PHOTO: AMANDA RINGSTAD FOR THE WALL STREET JOURNAL; SET STYLIST: GOZDE EKER; FOOD STYLIST: MICHELLE GATTON/HELLO ARTISTS

WHAT IT’S IMITATING: The classic ground-beef patty

WHERE TO FIND IT: More than 1,000 U.S. restaurants, including national chains Bareburger, Umami Burger, Fatburger, White Castle and the Counter

THE VERDICT: This isn’t the only plant-based patty shipped raw and intended for cooking, but it’s the best known and the best by a mile. And don’t call it a veggie burger. Impossible Foods has imitated the true-blue look, smell, taste and texture of a ground-beef patty in a way that is almost unsettling in the uncanny-valley sense. Their secret is an oxygen-carrying compound called heme, which makes blood appear red and makes meat taste, well, meaty. It is heme that

gives the burger that I-can't-believe-it's-not-beef flavor and bloodiness (yes, this patty even bleeds). All this flavor and bleeding comes at a price, which for now is on par with premium ground beef. And the burger is available only in restaurants where the kitchen has been trained to prepare it—not exactly a meal for the masses. But if and when the price comes down, this is the product to give ground beef a run for its money and cut the planet a break.



THE IMPOSSIBLE EFFECT: In February, the U.S. Cattlemen's Association filed a petition with the Department of Agriculture to limit "beef" products to those that "come from cattle that have been born, raised and harvested in the traditional manner." Their proposed definition would keep the term off alternatives made from "plants, insects or other nonanimal components." Pat yourself on the back, plant-based burger makers. When the cattlemen are panicking, you're doing something right.

ILLUSTRATION: NICHOLAS SLATER

UP NEXT: LAB-GROWN MEATS



ILLUSTRATION: MICHELE MARCONI

Just, the maker of Just Scramble, is growing a variety of test-tube meats. To do this, scientists extract stem cells from an animal—such as a pig or a cow—and cultivate them into muscle tissue in a lab. The result not only resembles pork or beef but is genetically identical to the stuff in your butcher's case, with almost no environmental impact. But "clean meat" won't catch on unless it can compete in taste and price with the conventional stuff, says Josh Tetrick, the CEO and co-founder of Just. Tetrick describes the current price per pound of his product as "unnecessarily high" and hopes to reduce it substantially before his company launches a ground lab-grown meat at the end of 2018. And the taste? To be determined. No samples were available at press time.

—ELLIOTT KRAUSE

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