



Ingredient Hot List

NOVEL INGREDIENTS

The term “novel” can denote something new, but there are some novel ingredients that are deeply entrenched. These ingredients are sourced from the earth and its water and land resources, spanning algae, insects and exotic fruits and vegetables. As product developers seek to create a more resilient, sustainable and accessible food supply to feed an ever-growing population, some are turning to these old-is-new-again ingredients for a variety of reasons – and applications. Read on to learn more about the emerging R&D landscape for everything from mealworms (really!) to mung beans and see where your brand might be able to find inspiration.

CONSUMER INTEREST & COMMON INGREDIENTS

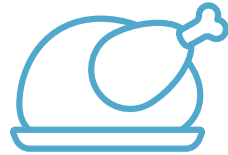


One thing that the novel ingredients on this hotlist have in common is well-being.

These ingredients contribute to health and wellness through inherent functional properties, nutrients or other attributes. That resonates with today's consumers, who often connect food with holistic health and are seeking out products that deliver on that promise.

You are what you eat:

1 in 2 consumers are willing to spend more on food that acts as medicine.



Protein is another common denominator, as these ingredients used in novel ways are derived from both animals and plants with high-protein content.

- 40% of consumers have purchased plant-based protein within the last six months, citing health as an important driver.
- Nearly 1 in 3 people report eating more protein from whole-plant sources



Let's not forget that consumers also crave familiarity, gravitating towards ingredients found in the natural world.

- Clean label and mindful eating are among the top eating plans right now, according to the 2022 Food & Health Survey from the International Food and Information Council



Finally, many of these ingredients are considered more sustainable than traditional ingredients, taking up a smaller eco-footprint and using fewer natural resources.

- 49% of consumers said they have paid a premium for products branded as sustainable or socially responsible.



THE FLAVOR FACTOR

Most of these novel ingredients rely on complementary flavors to provide consumers with a satisfying eating experience. Insect-based powders, seaweed bases and bean flours are typically combined with other ingredients for a palate-pleasing formulation, opening the door to a variety of flavor fusions – and marketplace opportunities

INSECT PROTEIN



Chicken, beef, pork, seafood and...crickets? Indeed, the consumption of edible insects is a thing – the official name for it is entomophagy. These ingredients can be used in both pet food and human food and have found

appeal across many pockets of the globe.

From a product development standpoint, insect ingredients that are getting buzz right now for their nutritional benefits include cricket powder, black soldier fly larvae (mostly for pet food) and dried mealworms.

MARKET & CONSUMER SENTIMENT

Can consumers get past the creepy-crawly factor to embrace insect-containing foods and beverages? Some consumer studies point to acceptance, if positioned in the right light.

- 1/3 of Americans are willing to try and consume insect products that are deemed safe to eat, according to a survey published in Future Food.
- The demand for insect protein for animal feed and pet food could reach a half million metric tons by 2030.

PRODUCTS OF NOTE



CHIRPS EAT BUGS BARBECUE CRICKET CHIPS are made with cricket protein, described as the most sustainable, complete protein with a subtle and deliciously nutty flavor.. This product is free from gluten, nut, dairy, soy, whey, cholesterol, GMO and trans fat and provides 20g of protein per bag.

23% of consumers in a panel said they likely or definitely would buy this product.



HI! HUMAN IMPROVEMENT VANILLA FLAVORED PROTEIN POWDER is made with a base of pumpkin, brown rice and pea proteins supercharged with cricket powder, a powerhouse protein source packed with vitamin B12, iron, fiber and gut friendly prebiotics, making it nutritious, sustainable and good for the gut. This keto and paleo friendly organic product provides 21g of protein and is free from gluten, soy, dairy, artificial ingredients and added sugar.



JIMINY'S GOOD GRUB ENTREE is a complete and balanced meal for dogs and can also be used as a topper. Made with grubs as the insect protein, it works well for dogs with allergies or food sensitivities.

ALGAE & SEAWEED



Dubbed as “ocean superfoods”, algae and seaweed are making waves in the food and beverage business. Teeming with nutrients and considered sustainable, these water-sourced “crops” are being turned into functional ingredients in products made by startup wellness brands as well as large global manufacturers looking to diversify their portfolios.

Just as there are many fish in the proverbial sea, there are a lot of algae and seaweed types that can ultimately make their way into finished products. Krill, for example, is replete with beneficial omega-3 fatty acids. Microalgae is gaining a foothold in formulations, particularly in plant-based and vegan foods and beverages. Spirulina is a specific type of algae, known and often chosen for its blue-green hue and purported health benefits.

MARKET & CONSUMER SENTIMENT

- The global algae ingredient market is estimated to increase at a compound annual growth rate of 8.2% between 2020 and 2025.
- By 2026, the market for global algae protein is pegged to top \$1 billion.

PRODUCTS OF NOTE



EVIVE SAPPHIRE PROTEIN & SUPERFOODS SMOOTHIE CUBES are made with ingredients including blue spirulina. The plant-based product is free from added sugar and gluten and is an excellent source of five vitamins.

42% of consumers responded that they likely or definitely would buy this product.



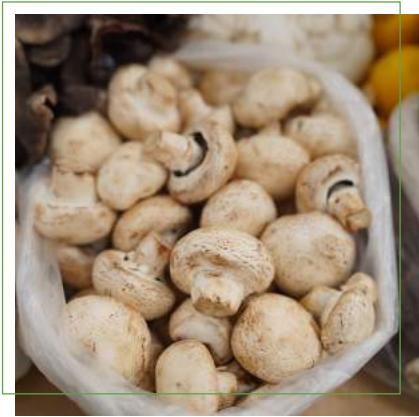
OCEAN'S HALO SEAWEED SNACK VARIETY PACK includes Maui Onion and Sea Salt flavors. The organic certified product is free from GMO, contains vitamin B12, is rich in minerals like iodine, is gluten free, and is made with sustainably harvested seaweed.

26% of consumers responded that they likely or definitely would buy this product.



VEGA HELLO WELLNESS IT'S A NO BRAINER RASPBERRY BLACKBERRY FLAVORED DRINK MIX is a plant-based vegan product that provides 32mg of omega-3 DHA from a sustainable, plant-based algae source.

FUNGAL PROTEINS



Mushroom adaptogens, have been sprouting up in formulations over the past few years, but they aren't the only fungi garnering attention. Yeast, which is classified as a fungus, is a millennia-old ingredient in bread and, in a recently-popular application, combines with bacteria to make the fermented

beverage kombucha. As food technology expands right along with the demand for nutritional functionality, different kinds of yeasts and molds will be reinvented as ingredients, along with a broadening array of mushrooms. One ingredient coming up fast is mycelia, the "filaments" from fungi that can mimic the muscle fibers of meat in plant-based alternatives.

MARKET & CONSUMER SENTIMENT

Consumers, especially those focused on holistic health, food access and sustainability, may be interested in mushrooms and products fermented with yeasts.

- Recent research showed that 56% of consumers were not directly familiar with fungal proteins but understood its potential benefits to society.
- Sensory attributes are important for these kinds of ingredients, which tend to be linked with umami experiences.

PRODUCTS OF NOTE



FAR WEST FUNGI SHIITAKE MUSHROOM JERKY is made with shiitake mushrooms, soy sauce, sake, yeast and balsamic vinegar, among other ingredients. The ready-to-eat snack is vegan friendly and free of gluten, GMO and preservatives.



OZO PLANT-BASED BREAKFAST SAUSAGES are said to be powered by a proprietary blend of pea and rice protein fermented by shiitake mushroom mycelia. It is a fully cooked and soy free product and provides 12g of plant-based protein and fermented pea protein with 55% less saturated fat than a pork sausage.

22% of consumers responded that they likely or definitely would buy this product.



APLENTY PLANT-BASED ROTINI WITH BOLOGNESE MEAL KIT, includes vegetarian and plant-based cauliflower pasta, a mildly spiced tomato vegetable sauce and plant-based protein. It also contains cremini mushrooms and shiitake mycelia.

34% of consumers responded that they likely or definitely would buy this product.



NATURE'S FYND CREAM CHEESE is smooth, spreadable and 100% dairy-free. It is made with Fy protein, a nutritional fungi protein derived from a naturally occurring microbe with origins in Yellowstone National Park.

MUNG BEANS & ACEROLA



Exotic varieties of produce are making their way into finished food and beverage products as novel ingredients. A few popular ingredients: the mung bean vegetable and acerola berry fruit.

Rich in protein and soluble fiber and low in saturated fat, sodium, calorie and cholesterol, mung beans are small green legumes grown in warmer climates in Southeast Asia, China and India. They can be used to make mung bean flour, an ingredient found in gluten-free bakery products and noodles, as well as in formulations for egg and meat alternatives. They have a slightly sweet and nutty flavor, working well in bakery, alt-meat applications, sauces and soups.

The Acerola fruit comes from tropical regions including southern Mexico and the Caribbean. Benefits of acerola in whole and extract form – including powders and liquids – include a pleasing taste and a strong nutritional profile with lots of vitamin C. Acerola is a versatile ingredient, often used for medicinal purposes and in the preservation and curing of certain meat products.

MARKET AND CONSUMER SENTIMENT

- The mung bean protein market is expected to reach \$280 million by 2028, up from \$220 million in 2021.
- The combined annual growth rate for acerola cherry extract is pegged at 8.02% from 2022 through 2027.

PRODUCTS OF NOTE



SIMPLY FOOD MUSHROOM FLAVORED VERMICELLI is made from 100% potato and mung bean and contains no cholesterol or GMOs. It does not require frying.

33% of consumers responded that they likely or definitely would buy this product.



AL FRESCO TACO NIGHT SEASONED GROUND CHICKEN with Mild Taco Seasoning is a minimally processed product made with chicken raised with no antibiotics ever and includes acerola extract on the ingredient list.

30% of consumers responded that they likely or definitely would buy this product.



STEAZ ZERO CALORIE HALF & HALF FLAVORED ORGANIC GREEN TEA ANTIOXIDANT BREW is a non-carbonated product made with premium, fair trade organic green tea combined with bold flavors and acerola superfruit. It contains 65mg caffeine per can and zero juice.

37% of consumers responded that they likely or definitely would buy this product.

Source: Mintel, Global Market Insights

THE TAKEAWAYS

Some of the latest novel ingredients are rooted in nature. Product developers looking to meet important demands and goals for human nutrition, food access, sustainability and versatility can take a fresh look at resource-based options like insect ingredients, sea algae, and different forms of fungi. It's also an opportune time to explore the possibilities for plant-based alternatives made with mung beans and extended shelf-life foods and beverages enhanced by acerola extract. As pressures increase to find alternative ingredients for simultaneous reasons, these offerings are finding their place. But regardless of the health benefits these ingredients may provide, taste is still a key factor in consumer purchase decisions for products featuring these ingredients. Be sure to keep flavor in mind when marketing these products to your consumers. Need guidance on entering this space? We can help.

YOU DESERVE MORE. LET'S GET STARTED.

What does true partnership look like? You deserve a flavor partner ready to turn these trends into the tangible.

Let FONA's market insight and research experts get to work for you. Translate these trends into bold new ideas for your brand. Increase market share and get to your "what's next." Our technical flavor and product development experts are also at your service to help meet the labeling and flavor profile needs for your products to capitalize on this consumer trend. Let's mesh the complexities of flavor with your brand development, technical requirements and regulatory needs to deliver a complete taste solution.

From concept to manufacturing, we're here for you — every step of the way. Contact our sales service department at [630.578.8600](tel:630.578.8600) to request a flavor sample or [chat us up at www.fona.com/contact-fona/](https://www.fona.com/contact-fona/)



SOURCES

- Acosta
- American Botanical Council
- Deloitte Insights
- Food Safety Magazine
- Future Food
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- IBM
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