Some of your favorite foods have a deep dark secret: They're rotting. Chocolate? Coffee? Fermented. Bread, cheese, sausage—full of fungi and bacteria. Here are five microbes that chefs use to make your food and drink more delicious. —KATIE M. PALMER

1. **ASPERGILUS OYRZAE**
   At the Nordic Food Lab in Copenhagen, chef Ben Reade is whipping up novel ingredients in the style of soy sauce by adding this fungus. A starter mix of sunflower seeds, butter beans, mushrooms, barley, and lemons creates a sauce that tastes just like foie gras. "When chefs taste it," Reade says, "they just giggle."

2. **LACTOBACILLUS BANFRANCOISENSIS**
   Linden Street Brewery in Oakland, California, made a beer using sour-dough starter (in which this lactic acid bacteria plays a leading role). Once the culture took, it produced a slightly sour, malty red ale with a balanced bready aroma.

3. **ACETOBACTER ACETI**
   Charleston, South Carolina, chef Sean Brock creates a truly Southern take on vinegar. He adds a "mother," a slimy mess of symbiotic bacteria and yeast, to Mountain Dew or sweet tea, followed by grain alcohol. Acetobacter eats up the booze, spitting out acetic acid to make a vinegar that plays well in cocktails.

4. **BRETTANOMYCES BRUXELLensis**
   Long considered the bane of the brewing world, this yeast—commonly known as Brett—is making a comeback. It's often described as having a funky, fruity smell. In the right hands, though, it lends complex sour notes to all sorts of imbibes.

5. **PENICILLIUM NALOQUENSE**
   At San Francisco's Bar Tartine, chef Courtney Burns dries her sausages and cured fish roe in a fridge that's been sprayed with a fungal mix headlined by this mold. Though it doesn't ferment the roe, the mold coats it, adding a meaty aroma.