



# BUG BITES

What's loaded with protein, packed with nutrients, and environmentally sustainable? If you chirped up and said crickets, you're right. And here's why you should be sneaking them, and other insects, into your daily protein plan.

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Don't bug out!  
Insects provide tons of clean protein with less harm to our environment than animal farming.

**CRUNCH...** you're eating a handful of roasted crickets and mealworms. Before you "Ew!," no, this isn't an episode of *Fear Factor*. Despite their creepy-crawler reputation, insects like crickets, grasshoppers, beetles, caterpillars, and mealworms pack tons of benefits for both your muscles and the environment compared to traditional meat and soy proteins. Within the next few years, experts insist insects will become a staple in our fit-minded diets.

## The Original Superfood

People have been practicing entomophagy (eating bugs) since prehistoric times, says Dr. Yasmin Akhtar, faculty of UBC and scientist at DE Labs, while roughly two billion people consume insects today, mostly in Asia, Africa, and Oceania. “Even I eat insects,” says Akhtar. “Mainly mealworms and crickets in soups, salads, smoothies, and baked goods like cake or cookies.”

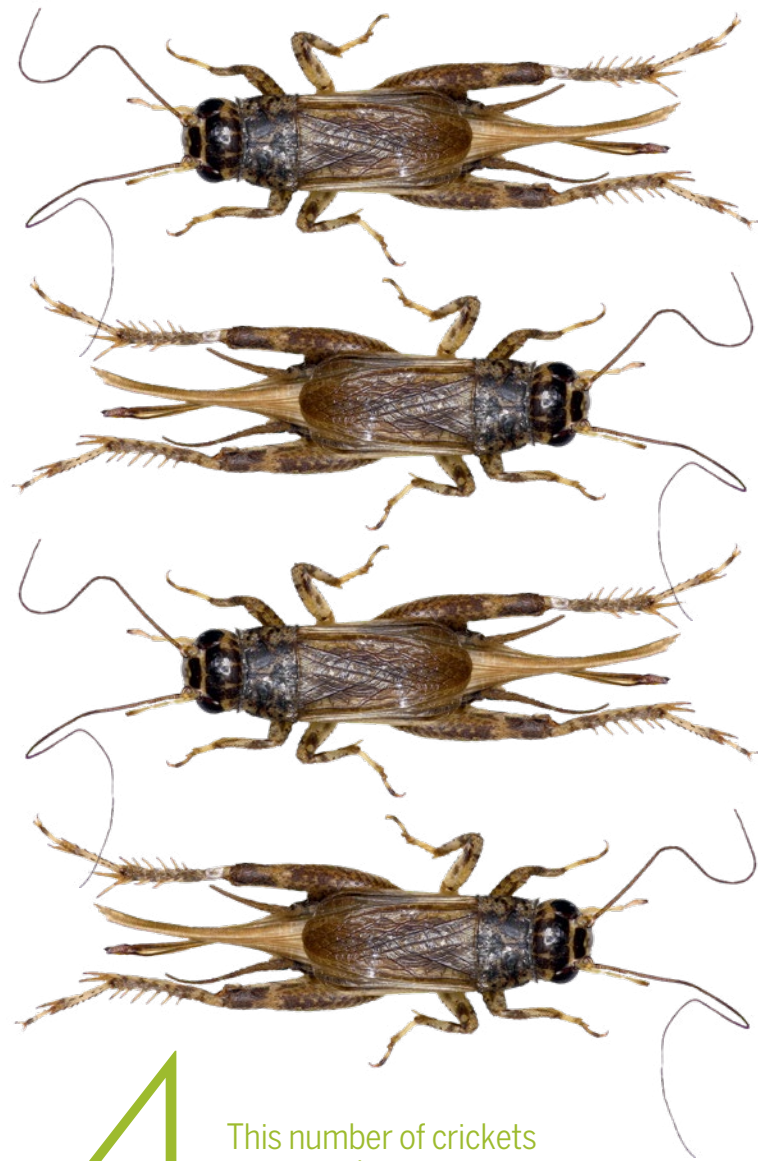
Insects are popular among other cultures because of their ability to deliver quality protein and other nutrients including essential fatty acids, vitamins, minerals, and fiber, without the land and resource requirements of cultivating conventional meat. Even the UN says we should all be eating insects, including the nutrient deficient and obese. Another 2017 study showed insect protein is antidiabetic and helps regulate insulin.

As the mainstream appeal of edible bugs crawls into our Western diets, most adapters are focusing on its protein superiority compared to meat or soy. A 2016 study published

in the *NFS Journal* showed insects contain “significant protein content,” and a slew of minerals and vitamins. Protein is still a buzzword for North Americans, but Jarrod Goldin, president of Entomo Farms—a leader in cultivating cricket flour and insect protein—prefers calling it “insect food.”

“Crickets hold much more than just protein,” says Goldin. “Most North American women are not protein deficient, but there are two other nutrients most people are deficient in: fiber and iron.” Goldin is quick to point out that iron deficiency is considered a pandemic by the World Health Organization. “Cricket powder is high in bioavailable iron, meaning you absorb much more of it.” Compared to meat and soy alternatives, Goldin adds that soy contains no B12 or iron, and meat contains no fiber. “Crickets are the only food high in prebiotic fiber, iron, and sustainable protein.”

Eat Grub, a UK-based insect food company, credits bugs as being the original superfood. Grub’s Marketing and Account Executive, Pops Reid, compares crickets’ levels of omega-3 and



**4** This number of crickets contains the same amount of calcium as a glass of milk.

omega-6 to that of salmon, adding that crickets contain three times more protein than steak. “Eating four crickets is like drinking a glass of milk for calcium,” Reid says. Eat Grub makes use of roasted insects and cricket flour for their protein shakes, natural energy bars, and roasted nut and chip substitutes, like toasted buffalo worms and sweet chili and lime crunchy crickets.

Available forms of edible insects range from whole dried and roasted insects, powdered insects, protein bars, and most importantly, insect flour (bugs processed

into ordinary flour), allowing you to cook regular dishes while disguising the presence of insects. Goldin credits the mainstream adaptation of eating insects to the mystery woman or man who thought to pulverize crickets into powder “so people don’t have to look at the whole insect.”

### Don’t Be Creeped Out

“We’re more disgusted than afraid at the idea of having insects in our mouths,” says Paul Rozin, heralded as the world’s leading expert on—get this—disgust. Rozin was

enlisted by The Nordic Food Lab in their large-scale research project to make insects more palatable, and is currently working to understand the psychology behind the resistance to eating insects. “We’re disgusted by almost all animal products. There are 4,000 mammals other than cows, pigs, and lambs, but we’re disgusted by the rest,” says Rozin, adding that

insects may trigger a worse “disgust reaction” than others.

Swearing by the use of insect flour and its slightly nutty taste to mask the presence of bugs on the plate, Rozin says getting past the ew-factor requires an adjustment period. “When people do something for a while, they get used to it,” he says. The principle is to start using low levels—such as a spoonful of powder to a



**Cricket powder is creeping its way into the mainstream market. Add into shakes and baking for extra protein.**

smoothie—so you can’t taste the difference, then progressively adding more over time.

Insects could be bred to taste better or contain even more nutrients, Rozin goes on, but not until this trend becomes a major industry. “Insects are a very worthwhile investment... they’re potentially very cheap to produce compared to other animals, with only a few-weeks’ cycle and rapid breeding.” Akhtar adds that the bug business is at a slow crawl due to “unclear regulations and legislation on farming and selling insects for human consumption.”

### Can Crickets Save the Planet?

Companies like Entomo Farms, Eat Grub, Chapul, Exo, Chirps, Coast, Crik Nutrition, and Atteka have all gotten past regulations and invested in insect food, not only for the nutritional bang but to help preserve the environment. For every 100 lbs of grain fed to a cow only 10 percent is yielded as food, compared to Entomo’s 1:1 ratio for its crickets. Unlike cow waste to the air, cricket poo contains unrecognizable traces of methane and is sold to organic farmers to be used as high-quality fertilizer. Goldin says “Cow farming is the largest contributor to climate change. If a family of four got their protein from insects one day a week for a year, maybe cereal or a protein shake in the morning, afternoon

soup, and an evening pizza, it would save the planet close to 20,000 gallons of water.”

The farming footprint is also small since insects are farmed vertically, thrive in dense communities (unlike factory farmed poultry, pork, and cattle), and are cold-blooded so additional energy isn’t needed to keep them warm. Reid adds, “By switching to insect protein, 30 percent of the planet’s land surface could be reclaimed.”

### Creating Buzz

Right now, there’s only one major downside to insect protein consumption: the cost. Much like your grass-fed beef and free-range organic chicken, insect food is costly. When traditional whey protein is roughly \$25 a pound, it’s hard to rationalize \$40 for cricket protein. But the price tag relates directly to nutritional superiority as well as limited demand, and as more companies jump on the bandwagon those costs should go down.

But whether or not this emerging food trend gives you the heebie jeebies, you can bet insect food will make its way to the mainstream market—and soon. Canada, for instance, recently saw a major insect endorsement from popular food brand President’s Choice, which put cricket powder in almost every one of their major supermarkets coast-to-coast. In the US, you can buy insects at Whole Foods and even on Amazon. **E**

## JEEPERS CREEPERS!

Here’s how insects compare to traditional protein sources.

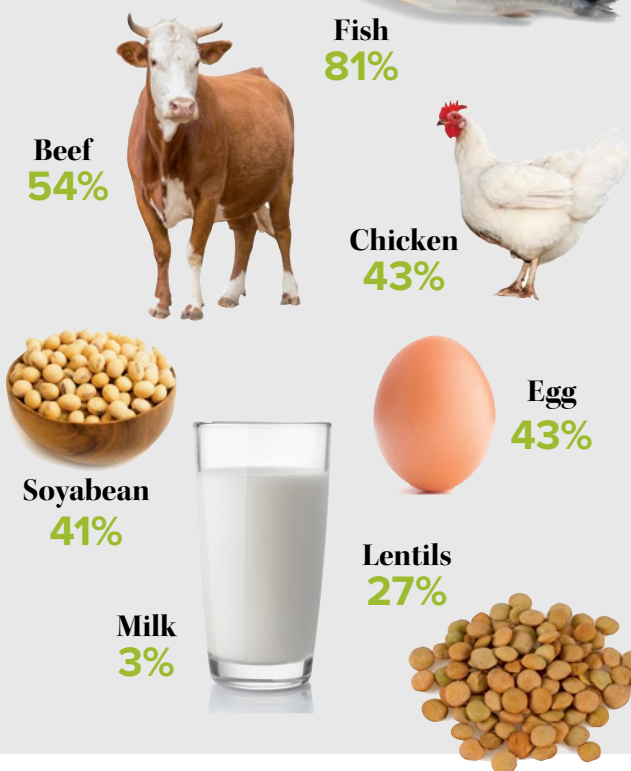
### Protein Content (% per 100 g)

Keep an eye out for cricket products like energy bars and roasted snacks.



Grasshopper, locust, crickets **44-77%**

### Conventional Protein Sources



**“By switching to insect protein, 30 percent of the planet’s land surface could be reclaimed,” says Reid.**