Are Insects the New Red Meat?

By Chuck Dinerstein, MD, MBA — September 13, 2019

As the call for eating less red-meat grows, the substitutes are raising their game. I have written about the Impossible Burger and I see that a Beyond Chicken is being introduced by the Colonel. But for some, these creations remain Frankenfood and they want a natural alternative to supplement a plant based diet. The Earth’s bounty does provide the substitute, insects. It’s time to burrow in on the subject.

Are insects good for you?

Short answer, if you can get over swallowing them, they can be nutritious. Over 2 billion global citizens are already munching on them. They have high-quality proteins and amino acids, some polyunsaturated fats, a few minerals and of course, fiber (their exoskeletons). Moreover, they require fewer resources to reach the size we might eat, especially those pesky greenhouse gases. There is at least one study showing that adding an ounce of ground up crickets to your daily breakfast, the “most important meal of the day,” reduces a pro-inflammatory cytokine. A study in Frontiers of Nutrition looked at possible anti-oxidant advantages in our multi-legged friends.

A range of insects, from mealworms to cicada, ants, spiders, scorpions, and of course grasshoppers and crickets had their wings, paws and stingers removed (termed size reduction) and were ground up and their good stuff extracted. For controls, the scientists used freshly squeezed orange juice and olive oil. Nearly every one of those insects had more anti-oxidant activity, at least in the lab, than orange juice – five-fold greater for grasshoppers, silkworms and crickets. Those wanting their share of anti-oxidants should best avoid cicada, giant water bugs, the
zebra tarantula and black scorpions; stick with the OJ.

In general, the scientists found that anti-oxidant components of insects varied with the insect’s diet. Among the insect herbivores, more anti-oxidants were to be found in their water-soluble components; for the insect carnivores, the anti-oxidants were found in the fat-soluble fraction. Silkworms, vegetarian though they may be, had the highest amount of anti-oxidants in both fractions.

The scientists conclude that they have identified a potential benefit from insects, but more evidence is needed to determine whether that potential translates into a health benefit for us. In the meantime, orange juice remains an option.

The Insect Industry – Big Insect?

Of course there is an insect industry, the 2 billion of us chowing down on insects are not just looking in their backyard for snacks, they can be purchased. While it is currently only a $600 million market, if it even impacts 1-2% of global beef sales we are looking at a $16 billion market. As it turns out Thailand is the lead country in this food niche, which is a shame because Mexico, our next-door neighbor (think lower transportation costs) “… is home to an estimated 549 species of insects that are safe to eat and nutritious, and the country has a long history of eating insects.”

Despite a long-standing cultural history of entomophagy, insect-eating, Mexico has no production infrastructure. Insects are captured “free-range” as it were, there are no industrial farming operations. And apparently, there is a cultural divide where Central and Southern Mexico likes their insects cooked, while Northern Mexico likes them fumigated as pests. And even if farming was more evolved, there are few if any facilities to process them, and to enforce standards assuring safety.

While I admit that some of what I am writing is tongue-in-cheek, it may not be such a bad idea to help foster an insect economy in Mexico. While they are between 11th and 14th richest global economies, they hold a similar position concerning “poor in the world” – roughly 42% of their population living below the poverty line. They have the climate and diversity, and insect wrangling, farming, and processing can mean jobs. Surely if people are concerned enough to support sustainable coffee growers and growth, we can make some room for sustainable insect farmers.

Sources: Antioxidant Activities in vitro of Water and Liposoluble Extracts Obtained by Different Species of Edible Insects and Invertebrates Frontiers in Nutrition DOI: 10.3389/fnut.2019.00106

“Mexico Could Be The Top Source Of Edible Insects. Here’s Why It’s Not” from Ozy [2].