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# Are Natural Sweeteners More Sustainable?



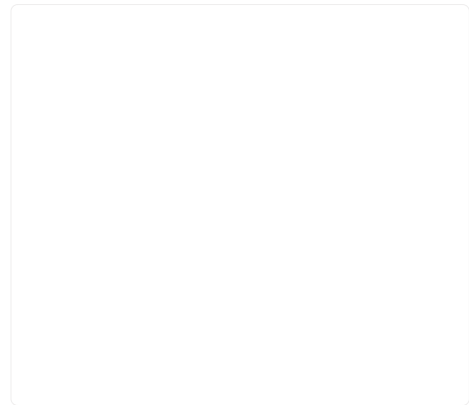
By [Gemma Alexander](#)

© AUG 16, 2021   [agave](#), [honey](#), [maple syrup](#), [stevia](#),  
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Everyone knows sugar is bad for your health and your teeth. It's [not great for the environment](#) either. The best thing to do is to cut down, but a diet devoid of sweetness isn't going to make anyone happy. Switching to a natural sweetener can be a [healthier choice](#) but are they more sustainable? We took a look at the environmental footprint of four of the most popular options to see which one is the sweetest deal for the planet.

## Stevia



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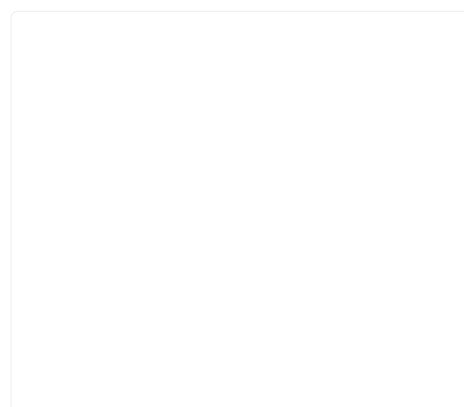
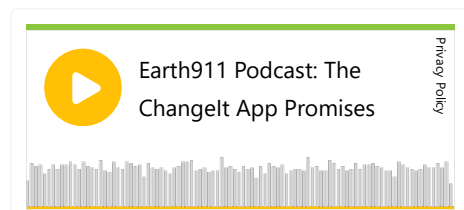
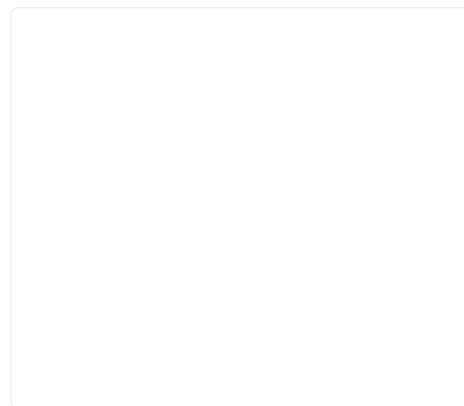
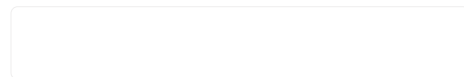
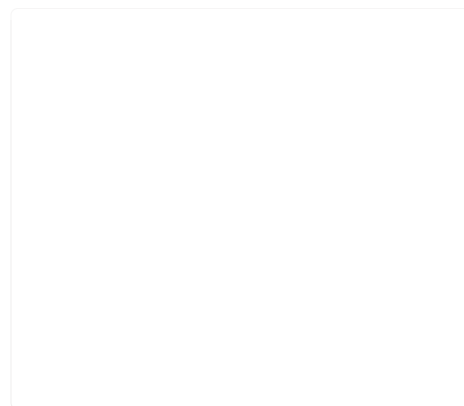
[Stevia](#) is a popular natural sweetener because it's powerfully sweet without any calories. Native to South America, stevia is now grown on multiple continents, with [China the biggest producer](#). The production methods used in China, where sustainable agriculture is not widespread, are not well documented. Paraguay is the distant second-largest producer of stevia. There it has traditionally been grown by indigenous farmers, who have largely been left out of the [\\$492 billion/year](#) industry in a straightforward case of [biopiracy](#). Sweden's [Real Stevia Company](#) is one supplier that sources stevia from Paraguayan smallholders and processes it in Paraguay.

Stevia is [a relatively low-impact crop](#), requiring less land and fewer inputs than sugarcane or corn. Stevia extract is minimally processed compared to refined sugarcane. (But buyer beware – there are also brands of refined and even artificial stevia on the market. Read labels carefully.) A [carbon and water footprint assessment](#) from one of the largest stevia producers found the carbon footprint of stevia was 79% lower than high fructose corn syrup, 55% lower than beet sugar, and 29% lower than cane sugar per unit of sweetness. According to [Cargill](#), which produces many stevia products, EverSweet® stevia sweetener has the lowest impact score on land use, climate change, ozone depletion, and ecotoxicity among their sweetener products.



Stevia is a relatively low-impact crop, but watch out for refined stevia or even artificial stevia sweeteners.

## Honey



Honey has the potential to be the lowest impact – even net positive – natural sweetener because you can [produce your own at home](#). Not only will your honey be produced without processing, but raising bees will encourage you to [garden more sustainably](#), and the bees will provide the important [ecosystem service](#) of [pollination](#) for you and your neighbors.

Not ready to become an apiarist? Commercial honey is a bit more complex. Beekeepers frequently transport their hives long distances to pollinate agricultural crops. This practice has significant environmental and economic benefits. But it generates most of the carbon emissions from honey production. [Honey production in the U.S.](#) generates between 0.17 and 0.48 kg [CO<sub>2</sub>-equivalent](#) per kilogram of processed honey. Surprisingly, the largest honey producers have the lowest emissions by volume. In a different study, honey [produced in Argentina](#) generated roughly 2.5 kg CO<sub>2</sub>eq/kg honey before export. In the UK, at least one commercial beekeeper is [certified carbon neutral](#).

Although honey can be certified organic, the value of organic certification poses [a sticky question](#). Even when the crops pollinated by commercial honeybees are organic, it's impossible to guarantee that bees only visit the organically grown flowers. For most crops, [organic](#) is more important than [local](#) for sustainability. In the case of honey, the transparency and minimal processing of locally produced varieties may be more meaningful than organic certification.

Pure honey undergoes very little processing. Some honey is pasteurized, but unlike dairy products, heat is not required for food safety. [Raw honey](#) requires less energy and is [arguably healthier](#). Especially since there have been [reports](#) of adulteration and contamination in imported honey, buying local (or at least domestic) raw honey is the next greenest option to beekeeping.

## Maple Syrup

Unless you live in the Northeast, backyard syrup production is not an option. And even if you do, producing maple syrup is a lot more time-consuming than backyard beekeeping. But like honey, maple syrup is a minimally processed, all-natural

sweetener whose production can have environmental benefits.

Although maple syrup is a [relatively sustainable](#) product in terms of land use and pesticides, it does generate carbon emissions. Processing maple sap into syrup is energy-intensive. Hours of boiling in an evaporator requires about [30 gallons of oil](#) to produce one gallon of maple syrup. Traditionally, maple syrup is heated with wood, which also produces [unhealthy smoke](#). Because it is a heavy liquid that is usually trucked rather than shipped across North America, the transportation emissions are also high.

However, the demand for maple syrup is an incentive to [conserve carbon-storing woodlands](#) that may otherwise be lost to development or more intensive agriculture. In the end, [maple syrup](#) may be a carbon-positive industry despite its emissions.



It takes a lot of energy to process maple syrup, but demand for this natural sweetener also provides a financial incentive to preserve woodlands. Image by [piviso](#) from Pixabay

## Agave

Mexico is the only source for agave nectar and syrup, which can be made from many different species of the native agave plant. The plants live for more than five years before flowering and dying. Agave nectar is harvested from the flower; the sap is purified into syrup, which is often sold as nectar in the U.S.

When grown for sweetener rather than mescal, agave is often grown in large monoculture farms, with their attendant [environmental impacts](#). However, it is still a relatively low-

impact crop. It does not require much water and in some cases is even [harvested by hand](#) rather than gas-powered machinery. Agave has an estimated carbon footprint of [0.1 kg CO<sub>2</sub>-eq per kilogram](#) of sugar.

When allowed to grow to full maturity, agave plants [support populations of bats](#). The endangered long-nosed bat is an important desert pollinator that feeds on agave flowers. Buying [organic and fair trade agave nectar](#) can eliminate many of the most common negative impacts of commercial agave production.



In some cases, agave is still harvested by hand. Photo by [Rudy Prather](#) on Unsplash

## A Sweet Choice

Compared to the [sugars added](#) to most commercial foods, the environmental impacts of these natural sweeteners have not been well studied. Certain kinds of honey and maple syrup may be better choices than stevia or agave. But from the information available, they each seem to be a more

sustainable choice than cane sugar or high fructose corn syrup. They may even have environmental benefits. Feel comfortable choosing a natural sweetener based on flavor, availability, or baking performance. Whichever natural sweetener you choose, organic, fair trade, and local brands are, as always, the best choice.



Reading time: 4 mins

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By [Gemma Alexander](#)

Gemma Alexander has an M.S. in urban horticulture and a backyard filled with native plants. After working in a genetics laboratory and at a landfill, she now writes about the environment, the arts and family. See more of her writing [here](#).

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