7 Plants That Could Save The World

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Plants feed us, clothe us, shelter us, heal us, and unendingly inspire us with their everyday miracles. But, in many ways, despite the technological advances of society, we are still at the tip of the iceberg in harnessing the potential of the plant kingdom. In recent years, researchers around the globe have unlocked more and more of the powers of the plant world, demonstrating that the solutions to some of our greatest social and environmental challenges—from hunger and poverty to pollution and global warming—may be found in their genes.

Check out these 7 plants that may just save the world.

Perennial Wheat

Grains are the staple food of humanity: the vast majority of people on the planet eat either rice, wheat, or corn on a daily basis, and those are all annual crops. The issue with annuals, which complete their life cycle in a few months and must then be replanted, is that they require tremendous inputs of water, fertilizer and, often, pesticides, and herbicides, in order to remain productive on the same plot of land each year. The constant tillage required to plant and replant grains slowly degrades soil over time and leads to erosion by water and wind. That said, many modern plant breeders have been hard at work in recent years attempting to domesticate some of the perennial grains that are found in nature, because they require a fraction of the agricultural inputs for the amount of yield when compared to their annual cousins. Researchers at the Land Institute in Salina, Kansas are leading the way and have already developed a strain of perennial

wheat called Kernza, though they say it may be another ten years before they have perfected it as a crop to replace annual wheat.

Perennial wheat may be the key to solving world hunger.

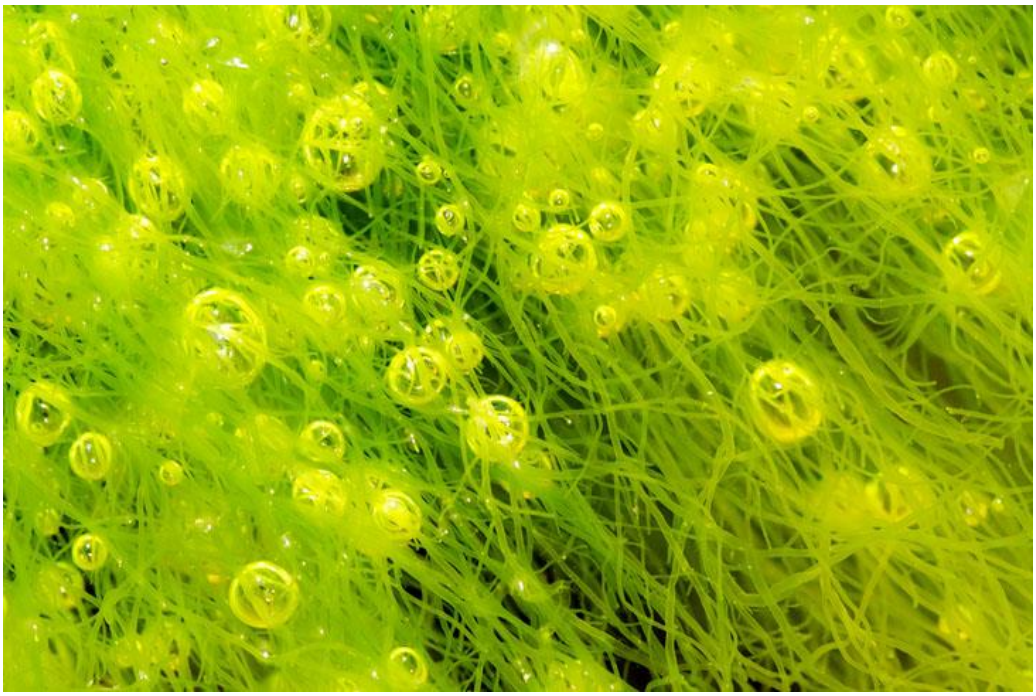
Azolla

Azolla is a tiny floating aquatic fern that grows naturally in wetlands all over the world. Individual azolla ferns are about the size of a thumbtack, but they are considered one of the fastest growing species on the planet, as they can double their quantity every other day in warm shallow water. The reason for this is their ability to absorb atmospheric nitrogen and convert into a form of all-natural, fast-acting fertilizer. Humans have been taking advantage of this trait for millennia, incorporating azolla as a member of aquatic polycultures, primarily in the rice padis of Asia. In recent times, azolla has been grown as a form of organic fertilizer, a source of bio-energy and as a sustainable alternative to corn and soy for use in livestock feed. Its phenomenal growth rate makes it a promising plant for the purposes of carbon sequestration, which is currently under study at the Azolla Institute.

Azolla absorbs huge amounts of carbon dioxide, and makes an ideal fertilizer.

Algae

Algae range in size from unicellular organisms to giant kelp over a hundred feet in length. Like azolla, their aquatic nature allows an incredibly fast growth rate making them a prime target for biological research. Some species are edible, bringing micronutrients into the human diet that are deficient in modern agricultural crops. Some species are grown as organic fertilizer, while others are used in biological filtration of sewage. But the potential of algae as a fuel source is where it gets really exciting. They can grow in shallow water, even salty water, making it possible to produce fuel on land unsuitable for agriculture. Algae grows so fast, it is harvested weekly, rather than annually. It is estimated that 15,000 square miles of algae production could supply the United States with all of its fuel needs – that's about 1/7 of the land currently planted in corn in this country. Some algae fuel is already being sold and experts predict that by 2025 the technology will be refined to the point where the price per gallon will break even with the cost of petroleum.



Algae isn't just great for filtering toxins from water: many strains are extremely nutritious, so it's a fast-growing food source that can thrive in many bodies of water.

Sedum

Unlike algae and azolla, sedums like it dry. They grow naturally from cracks in the sides of cliffs, meaning they survive both intense heat and extreme cold equally well and have little need for either soil or water. These traits make sedums perfect for vegetating rooftops and walls — they are the preeminent species for living architecture and are already in widespread use for this purpose. Plus, they have beautiful succulent foliage that comes in an array of soft color tones, making it possible for buildings to become living works of art.

The many species of sedum tolerate both heat and cold very well, and are ideally suited to green roofs, regardless of the climate.

Bamboo

Bamboo is probably the fastest growing terrestrial plant—some species shoot up 2 to 3 feet a day, creating enchanting groves in the process. Bamboo is edible, useful for building and can be used to make fiber, paper and a biodegradable alternative to plastic. Of course, there are many other plants that fulfill these purposes, but bamboo has the advantage of being a perennial grass. It can be harvested again and again without replanting, making it useful for reforestation projects to heal land that has been degraded by conventional forms of forestry and agriculture.

This quick-growing plant can be used for everything from building materials to food and clothing.

Bracken Fern

Some plants grow surprisingly well in conditions that are toxic to others. Bracken ferns, which are a weedy fern species growing on disturbed land all over the world, have an uncanny ability to grow in soils polluted with heavy metals, like lead, nickel, cadmium, copper and arsenic. Scientists have been experimenting with using them to remove heavy metals from contaminated industrial sites, as the ferns actually absorb them from the soil and store them in their tissues. After being allowed to mature, the ferns are then harvested and incinerated. The resulting ash contains large quantities of the precious metals which are then recycled for other uses.

Bracken ferns in particular flourish in poor soil, and can be used to remove heavy metals from polluted earth.

Chestnuts

Like perennial wheat, chestnuts have the potential to serve as a staple food source that improves environmental quality rather than degrades it, as most modern agricultural systems do. They are enormous trees that live for hundreds of years, and, unlike most nut crops, they are relatively low in protein and high in carbohydrates, with a nutritional composition roughly equivalent to potatoes. Their high-calorie, low-protein nutritional profile makes them one of the only tree nuts suitable as a staple food. In fact, they were the number one staple food in the hilly regions of the Mediterranean basin in southern Europe until the early 19th century, where they were ground into

flour and used for bread. Chestnut trees thrive in the dry, infertile soils of the region, where grains cannot be cultivated on a large scale. Thus, they have the potential to make marginal agricultural lands into highly productive forested landscapes, with all the benefits of natural forests and none of the environmental costs associated with the large-scale production of annual grains.

Chestnuts thrive in dry, infertile soil, and are the only tree nuts considered to be a staple food.