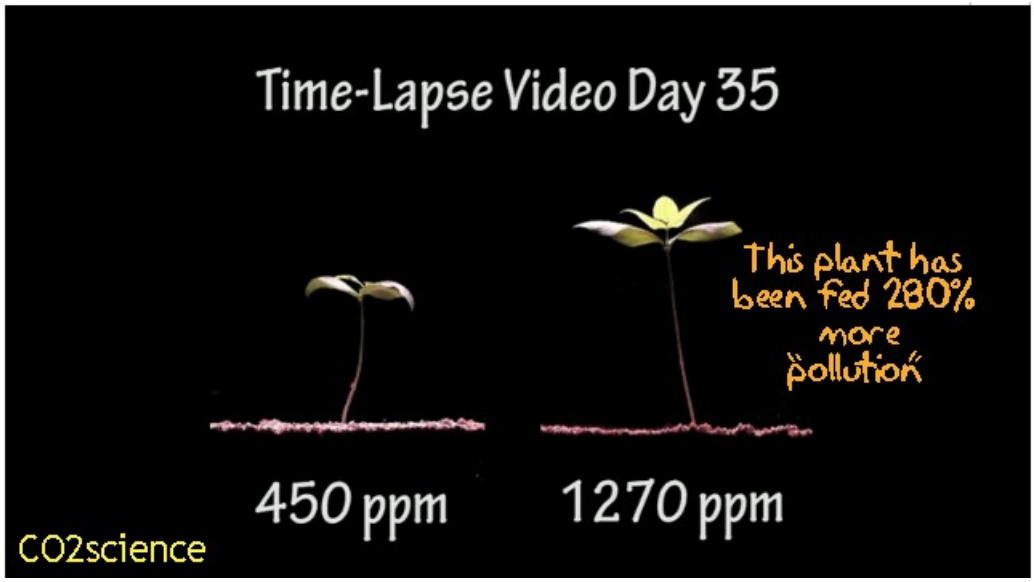
Co2 is the magic gas that makes plants grow

A little under half (typically about 45%) of the dry weight of any plant is carbon, and almost all that "C" came from CO2 in the atmosphere. No wonder plants love more CO2.

Trees and bushes can grow out of cracks in rocks because they suck the carbon right out of the air. Likewise hydroponics is only possible because the building blocks come from liquid *and* aerial fertilizer.

CO2 is about the only "pollution" you can pump around plants and watch them grow faster, stronger, taller and indeed more resistant to most of the stresses that normally bother a plant.



Watch these plants grow

The team at CO2science grew seedlings for 42 days in chambers of 450ppm (high) and 1270 ppm (very high) CO2 concentrations. They document the growth of cowpea plants (*Vigna unguiculata*) via time-lapse photography, and show what most market gardeners know: more CO2 in the air makes for taller, stronger, faster growing plants. Indeed CO2 is one of the essential nutrients for plants, and is often the thing that limits their growth. Pretty much all the plants on earth grow faster when CO2 levels are higher.

In a cornfield the CO2 levels change in the air above the corn, starting at sunrise, as the plants wake up and start photosynthesizing, the levels of CO2 begin to fall in the air over the field. Within an hour the levels start to plummet–dropping 25% by morning tea time. Somewhere around 200ppm the plants slow down and struggle to grow.

Harvest Measurements	Percent Enhancement
Stem Length (mm)	52
Stem Weight (g)	21
Root Length (mm)	339
Root Weight (g)	143
Leaf Number	38
Leaf Weight (g)	9
Total Biomass (g)	44

Those who say it is "pollution" aren't into helping plants.

The ingredient plants need most is carbon from CO2. They typically exchange over 2,000 water molecules to grab one CO2 molecule. Plants are desperate for carbon from the air, just like we humans are desperate for oxygen from the air. "No CO2″, implies no plant growth. One of the main roles of water in plant life is just so the plant can exchange it for carbon.

Green the deserts?

When there is more CO2 in the air, the plants don't need as much water. They become more drought resistant. From the CO2Science Biospheric Summary:

> One of the important ramifications of this CO_2-induced increase in plant water use efficiency is the fact that it enables plants to grow and reproduce in areas that were previously too dry for them. With consequent increases in ground cover in these regions, the adverse effects of wind- and water-induced soil erosion are also reduced. Hence, there is a tendency for desertification to be reversed and for vast tracts of previously unproductive land to become supportive of more abundant animal life, both above- and below-ground, in what could appropriately be called a "greening of the earth."

The mass of plant matter in the world today is about 6% higher than it was 20 years ago, according to satellites. The deforestation in South America and South Asia is about matched by reforestation in North America, Russia and Europe, and extra CO2 is making for more biomass per square meter

Due to today's higher CO2 levels, plants on average grow 15% faster than they did 200 years ago (and some major cereals grow 40% faster). Higher CO2 levels are a major part of the green revolution, averting starvation for hundreds of millions of thinking, breathing, human beings.

If the Greens wanted to *green* the world, the single fastest way to do it, is to *raise* carbon dioxide levels. O' the irony.