

People are Plants

People are plants?! Science is now discovering that humans are in fact more similar to plants than anyone had ever previously imagined possible.

5 Let's start with the basic structure of any living organism - the genome. The genome is a living thing's complete set of genetic information which it passes on to its children. The human genome is similar to that of other animals and also to plant genomes. Both the human genome and plant genomes contain around 25,000 genes.

10 Inside the cells, we find that human cells and plant cells contain six identical organelles or active components which include cell membranes, mitochondria and the nucleus. The presence of mitochondria means that both plants and humans have cellular respiration.

15 Both humans and plants have highly developed immune systems. Humans have an advantage over plants in that they can run away from threats whereas plants have to stand and fight. Richard Ulevitch of the Scripps Research Institute in the U.S.A. has discovered that plants have a similar response to bacterial infections to humans. "In reality there are only so many ways to accomplish related biological responses," he said.

20 The way humans and plants absorb food is similar. The human intestine and fertile soil both contain bacteria and fungi which help them to be healthy by killing harmful bacteria and breaking down substances to provide food. In the case of plants, bacteria and fungi help plants absorb nitrogen, phosphorus and potassium. In the case of humans, they produce vitamins K and B7.

25 Even freakier than this are experiments that suggest plants love their children, can feel afraid and even sense human intentions. Cleve Backster attached a polygraph or lie detector to the leaf of a plant. Polygraphs read changes in electrical resistance and his idea was to time how long it took water poured into the flower pot to reach the leaf. As the water entered the leaf the electrical resistance should have dropped but instead it increased. Backster noticed that the
30 curve on the graph closely resembled a human state of happiness.

His next idea was to burn the leaf to see if there was any kind of response. Just the thought of doing this made the polygraph go crazy. Apparently the plant was reacting to his intentions. For
35 the next 35 years Backster conducted many controlled experiments to research this phenomenon, called the Backster Effect. He claims that plants can detect and respond to human actions and thoughts.

40 Not all scientists accept the validity of Backster's experiments and they typically say that his experiments lacked scientific rigour. That said, his work became part of an international best-selling book called "The Secret Life of Plants" which was later made into a documentary of the same name with the soundtrack composed by Stevie Wonder. A famous supporter of the Backster Effect is Prince Charles.

45 Susan Dudley, associate professor of biology at McMaster University in Hamilton in Canada, has discovered that plants prefer to be near their children rather than plants of the same species who are not related to them. "The ability to recognize and favour kin is common in animals, but this is the first time it has been shown in plants," says Susan. "When plants share their pots, they get competitive and start growing more roots, which allows them to grab water and mineral nutrients before their neighbours get them. It appears, though, that they only do this
50 when sharing a pot with unrelated plants; when they share a pot with family they don't increase their root growth."

All this sounds great but what practical use does it have? Good question.

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Two facts: the word 'drug' means 'dried plant; more than 40% of all pharmaceuticals in use in the USA today are derived from plants. Secondly, salicylic acid is used by trees when they get too hot. A derivative of this, acetylsalicylic acid, is used by humans to treat fevers and is generally known as aspirin. The similarities of human biology and plant biology seem to mean that what works for a plant, may well work for a human. Humans have co-evolved with plants and have been eating them and making drinks from them for a long time. Carbohydrates, fat, minerals, protein and vitamins are vital to both human and plant life. Antioxidants in plants protect plant cells from oxidation as well as the cells of the humans who eat them. Our bodies recognise the substances that occur in plants, and so are able to metabolise or process them.

Nearly four million child deaths over the past 10 years could have been prevented if states were able to help the poorest, says Save the Children. The medicines they need don't reach them. A German charity called Anameds is now using plants to save people in Africa. They help villages to cultivate a plant called artemisia annua which is used against malaria. They also make a tea to cure diarrhoea caused by amoeba. Diabetics all around the world are now growing a plant from Paraguay in their gardens and green houses. Stevia rebaudiana helps the pancreas to moderate blood sugar levels and so diabetes sufferers don't need to inject themselves with so much insulin. Inexplicably, the Spanish government has banned the sale of stevia seeds. The Japanese, on the other hand, have been using stevia since the early 1970s.

Bothered by dandruff? Try a tea tree shampoo. On that note, a Valencian doctor recently told me that currently the most money being spent on medical research is for a cure for baldness in men.

The 1950s saw a revolution in agriculture with the introduction of synthetic fertilizers which resulted in harvests four times bigger. Furthermore, they allow plants to be grown in sterile soil. Also the plants grow up to five times faster. The problem with this is that the plants do not have enough time to develop their immune systems with the result that they need protection from diseases. In other words, the plants are sprayed with pesticides and fungicides. Unfortunately, what kills insects also seems to kill humans. The World Health Organisation says that 18,000 agricultural workers are killed by pesticides a year. There is also a lot of scientific evidence linking pesticides to birth defects and Parkinson's disease. A plant grown with synthetic fertilizer will have far less nutrients than a naturally grown one. It will however look more beautiful and be bigger and have a higher water content. In conclusion, if we want the plants we eat to help our immune systems it is better to grow them yourself.

How? All you need is light, some organic compost and some five litre plastic bottles. Pierce a hole in the bottle top with a sharp knife and make two holes in the neck of the bottle. Next, cut the bottle in half. Fill the base with water. Invert the top half and fill with compost. Plant three lettuce seeds and away you go. The soil is automatically watered from the base by capillary action. In 50 days you will have some healthy lettuces whose leaves will protect you from all your local toxins. Voilà.

