

Mineral Erosion From Our Planet's Soil



Depletion by Natural and Man Made Practices

Here is some great information from: [The Nutrition Security Institute - www.nutritionsecurity.org](http://www.nutritionsecurity.org)
A non-profit organization dedicated to restore depleted agricultural soils, regenerate topsoils, assure that the nutritional quality of harvested food will sustain human health

Nutrition Security

Healthy, biologically alive soil is the basis for nutrition security for all people and every single organism on the Earth. Within our limited and deteriorating supply of topsoil is the foundation for the nutrients essential for human health and the health of all other organisms on Earth.

In the United States and throughout the world there is a widespread lack of adequate nutrition in both in the agricultural soils in which food is grown and in harvested food. A critical need exists to halt the alarming declines in the world's supply of topsoil and to increase the nutritional values of our food.

Soil

Soil is the largest living segment of our planet's biosphere and the engine of life for our world. The microbial life within the thin top layer is greater than the combined weight of all other organisms on the planet. These microbial life forms are the engines of topsoil and critical to the production of nutritious food. *The number of beneficial soil organisms in one teaspoon of soil...*

The last 50 years has resulted in the destruction of over 50% of our supply of topsoil needed for food production. Extensive topsoil has been lost through the overuse of inorganic fertilizers, erosion and farming practices that deplete soil nutrients.

The nutrient values of harvested food are linked to the biological activity of soil microbes, soil organic matter, the mineral composition of the soil, fertilization practices and the genetics of the plant. Exhausted soils depleted of needed minerals and organic material cannot grow healthy, nutrient rich food. *80-year decline in the mineral content of one apple....*

Food

Food grown in depleted, nutrient deficient soils lacks the nutrients needed to keep people healthy. The nutritional content of harvested food produced today is significantly different from the food produced seventy years ago. *80-year decline in the mineral content of vegetables....*

The human body needs nutritious food to stay healthy. Food is the body's main source of energy. Nutrients in food are needed to sustain life. Our diet, the food we eat, is the source of nutrients for all our body's biochemical processes. The essential nutrients come from plants – fruits, vegetables, grains, legumes, nuts, seeds, and animals – meat, eggs and dairy foods. *Traditional Diets Compared to 20th Century Diets....*

While the nutrient density of harvested foods has declined significantly over the past 100 years, at the same time, food consumers are becoming increasingly interested in wellness and the prevention of disease. Change is needed to create incentives for growers to produce food with nutrient levels adequate to sustain the health of our families.

Health

To maintain good health, humans need good food with both vitamins and minerals. According to the USDA, Americans lack the minerals, calcium, magnesium, potassium, and the vitamins A, C, D, and E. Without needed minerals and vitamins, research has shown that people develop chronic health conditions. More and more nutritional studies have linked many of today's most prevalent disease to nutritional deficiencies. *Changes in the Nutritional Content of Beef and Chicken....*

Nutritional research has revealed the critical inter-relationship between vitamins and minerals and optimum health. Both vitamins and minerals are needed to maintain human health. We obtain them by eating food from plants and animals. *Deaths from Heart Disease....*

Minerals may be more vital to physical and mental health than vitamins. Minerals assist the body in a multitude of biochemical processes. Minerals are inorganic compounds found in the soil. Foods grown in soil depleted of minerals do not contain the minerals needed to sustain human health. *Minerals go Down, Disease goes up...*

"The alarming fact is that food – fruits and vegetables and grains – now being raised on millions of acres of land that no longer contains enough of certain needed nutrients, are starving us no matter how much we eat of them." U S Senate Document 264, 1936

Below is a white paper link on a soil depletion study and US farming practices along with greater detail on soil erosion and mineral deficiencies.

http://www.nutritionsecurity.org/PDF/NSI_White%20Paper_Web.pdf

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There are many studies showing that the amount of nutrients in soil/plants are decreasing - and soil depletion isn't something new. Here's a link to an article *written in 1936* discussing the same problem. A little excerpt:

Quote:

The alarming fact is that foods--fruits and vegetables and grains--now being raised on millions of acres of land that no longer contains enough of certain needed minerals, are starving us--no matter how much of them we eat! This talk about minerals is novel and quite startling. In fact, a realization of the importance of minerals in food is so new that the textbooks on nutritional dietetics contain very little about it. Nevertheless, it is something that concerns all of us, and the further we delve into it the more startling it becomes.

You would think, wouldn't you; that a carrot is a carrot--that one is about as good as another as far as nourishment is concerned? But it isn't; one carrot may look and taste like another and yet be lacking in the particular mineral element which our system requires and which carrots are supposed to contain. Laboratory tests prove that the fruits, the vegetables, the grains, the eggs and even the milk and the meats of today are not what they were a few generations ago.

A new study was posted only a few years ago, claiming that the levels of many nutrients in the soil was circa 50% lower than they were 50 years ago. Another new study confirms that fruits and vegetables are not as nutritious as they were 50 years ago. The info from 1936 was already quite alarming ("Many states show a marked reduction in the productive capacity of the soil...in many districts amounting to a 25 to 50 percent reduction in the last 50 years...Some areas show a tenfold variation in calcium. Some show a sixty-fold variation in phosphorous... Authorities... see soil depletion, barren livestock, increased human death rate due to heart disease, deformities, arthritis, increased dental caries, all due to lack of essential minerals in plant foods."). Even if these two studies are exaggerating or filtering away the not-so-alarming facts they found, there's no reason to believe that soil and plants contain a lot less nutrients now than they did, say 100 years ago. And: there's no reason to believe that this is true for B12 as well, but we have a separate thread about B12 levels in soil here. - where most of the info in this post has been taken from.

There's great variation from nutrient to nutrient in the various tests showing how depleted the soil/plants is/are, and here's one of the most extreme examples (Source: Japan standardized Ingredients List):

Quote:

Amounts of Vitamin C in 100 g of Spinach

1950 = 150 mg
1963 = 100 mg
1982 = 063 mg
1994 = 013 mg

That's a circa 90% reduction and this is not the rule, but an exception. Still, nobody seems to disagree that there is a severe soil depletion going on, and that this affects the nutrient levels in both livestock animals and humans. Nutrient comparisons have also been made between traditional, 'non-Western' diets and current, Western diets - look here. Another example that has been referred to a lot (possibly/maybe because it's a bit more extreme/scary than the average?), is a comparison between the nutrient changes in potatoes over the last 50 years:

Quote:

Using potatoes as an example, in a study to find out what nutrients the potato has lost over the last 50 years. This is what was concluded:

- 100% of Vitamin A
- 57% of Vitamin C and Iron
- 28% of Calcium
- 50% of Riboflavin

• 18% of Thiamine

Out of all of the nutrients analysed only niacin levels actually did increase. The conclusion was very similar for 25 fruits and vegetables under the same test conditions. Broccoli had a huge reduction in which all nutrients had significantly declined, surprisingly including niacin.

Figures have been published in scientific journals in the UK including the British Food Journal.

A professor at the center for Food Policy explained how our food has been so degraded that we would now have to eat 8 oranges to get the same amount of Vitamin A from an orange which our grandparents would have eaten many years ago.

Here's another, American study:

Quote:

As a group, the 43 foods show apparent, statistically reliable declines ($R < 1$) for 6 nutrients (protein, Ca, P, Fe, riboflavin and ascorbic acid), but no statistically reliable changes for 7 other nutrients. Declines in the medians range from 6% for protein to 38% for riboflavin. When evaluated for individual foods and nutrients, R-values are usually not distinguishable from 1 with current data. Depending on whether we use low or high estimates of the 1950 SEs, respectively 33% or 20% of the apparent R-values differ reliably from 1. Significantly, about 28% of these R-values exceed 1.

Quote:

1992 Earth Summit Statistics

1992 Earth Summit Report indicate that the mineral content of the world's farm and range land soil has decreased dramatically.

Percentage of Mineral Depletion From Soil During The Past 100 Years, By Continent:

North America 85%
South America 76%
Asia 76%
Africa 74%
Europe 72%
Australia 55%

An Article From: (NaturalNews) Soil scientists have known for many years about the decline in soil fertility. To address the problem, farmers, agricultural companies and governments have advocated a number of solutions which, however, have not ensured that our food is more nutritious.

Farming is big business and the aim is to give people cheaper food and make profits. This has meant that crops are genetically modified to ensure resistance against disease and to grow faster; that pesticides and herbicides are used to control pests; that ammonium-based fertilizers are applied to try to improve the soil.

This business has created an entirely unnatural ecosystem, where the soil has become barren and devoid of micro-organisms that are needed to create organic mineral complexes. The trace minerals have been used up and there is no immediate way to restore the micro-organisms.

The minerals from the soil contribute to producing nutrient rich food (including minerals). These nutrients are absorbed by us when we consume food. Like it or not we are connected to the soil. If it's depleted, then so are we. Unhealthy, barren soil does not produce food that is abundant in nutrients. *For example, between 1951 and 1999 Vitamin A was completely lost in onions and potatoes.*(1)

Soil that is depleted is unable to help nutrient deficient plants overcome attacks from pests and fungus. This means more pesticides are used. Synthetic (inorganic) fertilizers have little benefit since they create insoluble mineral complexes which are difficult for plants to absorb. Dr Richard Drucker (of Drucker Labs) reports that healthy nutrient-rich crops need 70 trace minerals, but that farming is only replacing 3-5 of these.(2)

Government authorities have been aware of the problem for 70 years. In 1936 it admitted that almost all soils in the US were depleted of minerals, and this was reiterated again in 1992 at the Earth Summit.(3) What does that have to say about progress?

Another reason why soils are depleted is acid rain. The University of Maine published a study in the December 2003 issue of the *Soil Science Society of America Journal* which confirms that acid rain depletes nutrients from the soil. Authorities have long ignored scientists' reports that acid rain depletes the soil of nutrients needed for growing trees.(4)

Can we then get minerals from other sources? Drucker believes that the best inorganic trace minerals from coral, colloidal or ionic have very large and insoluble molecules that are difficult to absorb at cellular level. Further, once they are absorbed, they accumulate in the body and are stored in fatty tissues. Over time, these substances become toxic leading to possible disease. Given this problem, we can assume that it will be difficult to get minerals from other sources. He does suggest that we need high quality supplements until a solution is found.(2)

Organic minerals have very small molecules which are easily absorbed through the cells. The minerals work as activators in the body as they are required to set off chemical reactions. For example, magnesium is an activator for over 300 enzymes and is important for the energy system of the body.

Dr Linus Pauling is famous for saying that every disease, sickness and ailment is related to mineral deficiency. The reason is that minerals are required for every cell in our body to function.

If minerals are lacking in our food, vitamins are of no use because vitamins (and enzymes) need minerals for them to work in our bodies. This means that vitamin supplements would be of no use unless we also have adequate minerals.

Our focus on progress in the name of money is having significant impacts on our health. Money was the very reason why authorities did not over the 70 years insist on sustainable farming practices, and why producers of pesticides, and synthetic fertilizers held sway. So some people have benefited financially, but what use is money if it cannot buy us food that will sustain us and keep us healthy in the long term?