



## NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

Five years ago, we did a series of articles that covered all 79 elements found in the human body. We looked at what they did in society, for soils, microbes and of course plants, animals and humans.

Since that time many new studies have been published on the importance of these elements to our health, hence it is time to review all the new information.

Example: Five years ago, the rare earth element Europium (Eu) had no known biological role, however new studies found that only 1-2 ppb (parts per billion) when fed laboratory animals, Europium increased their lifespan by 100%.

Example: I was reading a paper this morning on a study done by the Bionutrient Association on the nutrient content of various vegetables. Even in the same species of vegetable, they found mineral nutrition varied from 4-18 times! When they analyzed health giving compounds like antioxidants and polyphenols, they found variation of over 200 to 1. In other words, the best carrot they found has 200 times the number of beneficial polyphenols as the worst carrot.

Many scientists are now beginning to answer the question "WHY". Internationally, a growing field of research is on nutrient density in our food or lack thereof. Hundreds of human health problems are a direct result of the low quality of our food supply as explained by many of the books I have reviewed over the last few years. As a result, vegetable gardening has exploded over the last few years. This may include vegetables, fruits, herbs and even edible flowers or roots.

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One of the common factors to all edibles as well as our ornamental plants or our turf, is that a plants growth and health is directly tied to the health of the soil. Plants grown on mineral rich soils are more nutritious, have less insect or disease issues, they grow faster, and are more resilient to weather extremes from drought, flooding, and heat or cold. Hence the gardening proverb: Healthy Soil = Healthy plants = Healthy people.

A major component of this movement is the minerals in the soil. These minerals contain the 79 elements found in the human body and assumed that we need to be healthy. When reading labels, we need to be careful as geologists have identified thousands of minerals while there are only 84 naturally occurring elements. As an example, there are over one thousand minerals that contain the element calcium (Ca) along with the few other elements that make up the mineral, but only one major nutrient, calcium. So, depending on context, the word mineral may be mis-leading.

A common mineral that most gardeners know about is limestone (sometime just referred to as lime) which chemically is known as calcium carbonate. The symbol for calcium carbonate (short hand) is easily recognized as  $\text{CaCO}_3$ . For the non-scientists Ca is the short hand notation for calcium shown above. The element carbon is just the letter "C", and the "O" stands for oxygen. Understanding a few basics that are very simple will help all gardeners read the label on a bag of fertilizer, soil amendment and many other products in life.

This mineral above calcium carbonate,  $\text{CaCO}_3$  tells us from the symbol, that this mineral has one atom of calcium (Ca), one atom of carbon (C), and three atoms of oxygen (O). Some folks prefer words and other prefer the shorthand hence I will be using both as we go through this study.

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Many of us older (experienced) gardeners remember many of our gardening books recommending New Jersey greensand as a soil amendment. Greensand is actually an extremely mineral rich material that is high in calcium (Ca), iron (Fe), and many other elements that plants need to be healthy. If you want more information on greensand there is a paper on my website at <https://www.natureswayresources.com/infosheets/greensand.html>

Greensand was one of the first mineral packages recognized as very beneficial for plants and originally only found in New Jersey hence was very expensive. Since then, several deposits of greensand have been discovered in Texas and are now very inexpensive for us gulf coast gardeners.

Other rock dusts that have proven very beneficial are basalt and granite sands, each provides benefits that greensand does not. As a result of many requests from our customers we have all three blended together into one product that we just call Remineralizer.

There is an international organization called "Remineralize The Earth" where one can learn more about the importance of minerals.

<https://www.remineralize.org/mission/>

Using minerals greatly increases the growth rate of trees and the amount of carbon sequestered in the soil (4X) plus many more benefits. One paper I found using minerals, researchers were able to reverse and cure the disease Sudden Oak Death in California by using rock dusts (minerals).

Now that I have given you an introduction to the role of minerals in soil and plant health, we will start looking at each of the individual elements that minerals are composted of and

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especially the 79 elements found in the human body. If they are not in the soil, microbes cannot release them and plants cannot absorb them.

For those that want to get a jumpstart on the subject there is an old video on minerals and health from 1994 on U-tube called "Dead Doctor's Don't Lie", by Joel Wallach, DVM, DO whom was a nominee for a Nobel Prize.

<https://www.youtube.com/watch?v=4u4bEuLO9uI>

The talk is not only informative but at times funny with his country boy humor to make a point.

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