

Colloidal Minerals, Friend or Foe?

Here at BioAg we are asked repeatedly how many minerals are in the Wujinsan fulvic acid solution. Many are surprised when we tell them that there are basically none. This is why Wujinsan is referred to as the “purest fulvic acid” available. Naturally the second question is, why so many fulvic acid based products include broad-spectrum mineral complexes (sometimes called “colloidal” or “nano” minerals). These are good valid questions that we would like to address from a scientific basis. We will also delve into how and why mixing minerals with fulvic acid can inhibit the chelating/detoxifying potential of this substance.

There are many compounds we rely on to sustain our daily livelihood. These compounds include minerals, vitamins, proteins, etc... However, does this mean that a haphazard shotgun approach of supplying rare minerals is a smart plan for maintaining optimum nutrition? As it turns out there are more compounds in nature that we want to avoid ingesting than those we should target for nutrition. The medical industry, the EPA and the scientific community have identified some minerals as being mildly to extremely toxic to biological functions. We have all heard of the term “Mad Hatters.” This saying stems from hat makers who would suffer from dementia caused by mercury poisoning. They would hold it in their mouths and spit it onto felt to aid them in sculpting the perfect hat. And research links aluminum exposure to diseases like Alzheimer’s and memory loss. These are only a couple examples that demonstrate not all minerals are beneficial. There are still many rare minerals that have not been adequately researched as to their effects- beneficial or toxic. We do, however, know that the percentages of elemental composition of the human body have been well documented and that individual people have different needs in meeting nutritional balance. One example of this would be iron. Those who are afflicted with anemia need iron while others may have been overexposed to iron and require removal of excess amounts. Plainly, an over abundance of even essential compounds can be negative and cause antagonism toward other essential substances. There is a reason the saying “Too much of a good thing” exists. So, we start to see that each individual must carefully consider which minerals need to be supplemented and avoid those that are not required for daily nutrition.

So, just what is in these mineral complexes? Why are they in there? And what source did they come from? The colloidal minerals used in nearly all mineral products are derived from clays that have origin of volcanic activity from deep within the earth. These clays vary slightly in their composition and therefore are called different names like, bentonite, montmorillite, kaolanite, pyrophyllite, and zeolite among others. Collectively they are known as alumino-silicates, a sub-class of phyllites. Colloidal mineral marketing touts “broad-spectrum mineral profile”, “85 minerals”, “75 minerals,” knowing that some of the minerals in the line up are toxic: including mercury, aluminum, cadmium, lead and arsenic. Even minerals like beryllium, bromine, and bismuth, silver, and nickel should be considered carefully for overexposure and long-term accumulation. The reason why these materials are used is fairly simple, they are cheap and available. Not to mention that they have a large profile of minerals that are used as a marketing tool,

based on the notion that if a few are good then more is better. One of the ways companies will try and “talk around” these issues will be to say that these minerals are in such small proportions that there is not enough to do harm, or said levels are safe and beneficial. Again taking these substances regularly increases the chances of long-term accumulation and/or acute toxicity. And some minerals in these clays are not found in small portions: such as aluminum (which may be obvious from their common class name). Typically, aluminum constitutes about 10-20% of these clays. The claim made by sellers is that the aluminum is bound in the silicate structure and is therefore not biologically active. This may be true from a chemistry standpoint, when only examining the clay itself, but is not the case when it is reacted with fulvic acid. So the caveat here is that fulvic acid is well documented to dissolve silicates as well as mono, di, and polyvalent cations (positively charged ions). This means that fulvic acid binds and retains these minerals in a bio-available form for cell penetration or uptake. Now the aluminum has a very high biological significance, unfortunately a toxic one. While fulvic is a known chelator of these metals, inducing high amounts into your system is still not wise.

If we try and trace the sources of the mineral craze the waters get even murkier. Many marketing companies quote (without reference) Dr. Linus Pauling (winner of two unshared Nobel Prizes among many other accomplishments in Biochemistry and Quantum chemistry and considered one of the founders of Molecular Biology) as saying that mineral deficiencies in the diet explain all diseases and ailments known to man. There is no known documentation or scientific publications that leads to a quote or any such research done by Pauling. In fact if you visit The Linus Pauling Institute at Oregon State University (<http://lpi.oregonstate.edu/ss03/contents.html>) you will find a statement that refutes this quote as you can see by the following:

A Major Misquotation

*A statement purportedly attributed to Linus Pauling has proliferated on the Internet, often in association with the sale of mineral supplements. The alleged quote is usually akin to “You can trace every sickness, every disease, and every ailment to a mineral deficiency.” We are reasonably certain that Pauling never made such a statement **for the obvious reason that it is untrue**. Pauling was interested in the health effects of micronutrients, especially vitamin C, the vitamin that absorbed his interest for almost thirty years. Throughout his career, Pauling used x-ray diffraction to elucidate the molecular structure of many inorganic substances, such as minerals, and organic substances like proteins. If he had been particularly interested in the health benefits of minerals, he would have focused his research in this direction. There is no evidence in the published literature that he did so.*

There is quite a bit of information on the Internet regarding the dangers associated with heavy metals/minerals and other toxic minerals. Also available is what we actually need in the form of RDA (recommended daily allowances), which is well documented in

nutrition, biology and biochemistry literature. The moral is that we must be selective about what we put in our bodies and just because it is a mineral does not mean it is beneficial. If you are concerned about a deficiency visit your physician and find out for sure what elements you are not getting enough of and how much you need daily to fill the void.