The Science of Biological Farming Methods

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Effectively the nutritional integrity and thus health value of our food and our health is governed substantially (up to 90%) by whether it contains and can provide us with the over 33+ essential nutrients, trace elements and plant products (vitamins etc) that are essential for our preventative health.

What matters is not just the chemical concentration or density of these nutrients in our food but to what extent our food can provide these to us in the optimal concentrations, forms, ratios and balances when and where we need them. Excesses and/or in-balances can be as damaging as deficiencies. Incorrect forms can make them unavailable or even toxic.

Similarly the nutritional integrity and health of our food depends on it not containing any of the many toxic elements or concentrations of any element detrimental to our health.

It follows that how our food is grown becomes the critical determinant of whether our food has nutritional integrity and thus its essential health status.

Naturally this was not an issue as 99%+ of our food plants evolved to take up nutrients from the soil via their associated natural mycorrhizal hyphal networks. This was because the vast areas of hyphal membranes that separated the often inert toxic soil chemical environment from the living mycorrhizal membranes that separated the often inert toxic soil chemical environment from the living mycorrhizal cytoplasm were extremely efficient in selectively and intelligently solubilizing and concentrating essential nutrients from this external soil as well as excluding toxic elements. This selective intelligent membrane interface between the inert often toxic soil and the living mycorrhizal cytoplasm ensured that the fungus, the plant and thus the omnivores that evolved to live off them (ie us) each

obtained this correct concentration and balance of essential nutrients for their health. This situation was largely sustained until World War 2.

However with the explosion of industrial chemical agriculture after WW2 and it soil cultivation, over-fertilization and bio-cides, we have effectively killed most of these natural fungal networks in soils and thus their ability to selectively and intelligently solubilize, concentrate and exclude nutrients from the soil to ensure their and our nutritional integrity. Instead our industrial food now depends on the soluble ions that plant can take up from the soil solution via its transpiration flow; not unlike its roots operating as micro-straws. However this almost dictates that fewer of the essential cation nutrients that are held electro-statically on charged soil surfaces are able to be taken up relative to the soluble negatively charged anions (NO_3, SO_4, HPO_4) that are also often added as fertilizers to sustain growth. Similarly there no longer is any process to limit the high level of toxic ions (eg Al, Cd, Na) in the soil solution being taken up and concentrated by the plant. As such these industrial fertilized or hydroponically fed plants can no longer maintain their former natural nutritional integrity and should thus not be considered to be food and certainly not assumed to provide any health effects.

Organic agriculture by contrast acknowledges the dangers and damage from this post WW2 industrial chemical agricultural focus and the need for nutritional integrity and certifies that it has ceased using such fertilizers and bio-cides. However stopping the use of degrading practices does not restore the natural practices critical to nutritional integrity. This is particularly the case on degraded soils previously managed via industrial systems. Unless the critical mycorrhizal symbioses and natural selective intelligent nutrient uptake and exclusion processes have been fully restored there can be no confidence that the food from such certified organic farms has the required nutritional integrity and health value rather than be grown ‘naturally’; but at nutritional starvation levels. The certification that deleterious processes are no longer used is no guarantee that the active selective intelligent processes that naturally govern nutritional integrity operated.

The concept of ‘beyond organic’ thus provides a much higher level of assurance and health certification about the processes through which our food plants obtained their nutrients and can thus be trusted to have nutritional integrity. This can be confirmed scientifically via how the plant is grown and the nutritional

analysis of the superior food products. Rather than being a marketing brand it is an actual verifiable confirmation of a product with superior nutrition and health values. Based on this superior confirmed value it should command premiums significantly above those simply branded organic.

The beyond organic concept does not seek to undermine the intent of the organic brand but simply go well beyond it to give consumers an actual science based explanation of why nutritional integrity matters, what governs its realization and how to select for it a marketplace with many often deceptive brands and claims. Such concepts are significant nationally as now our only means to re-establish the preventative health of communities and nations and limit the ill-health and hundreds of billions in costs being driven by our industrial farming, food, pharmaceutical and disease industries.

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