

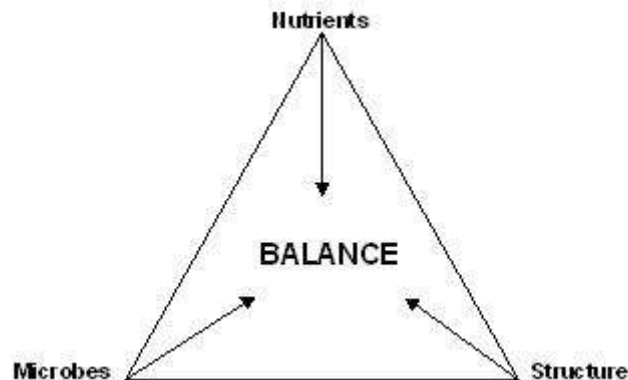
SWEP at the Forefront!

While the list of 'ills' in agriculture seems to grow almost daily (salinity and sodicity are on the increase, soil structure decline is rampant, biodiversity is threatened, soil and nutrients wash down to pollute rivers, even the climate seems to be affected), the question remains: "Is there anything left to be done, or have we left it all too late?"

One man who has devoted himself to finding solutions to these kinds of problems is Ted Mikhail – founder and Managing Director of SWEP Laboratories.

Now after more than 40 years, Ted's research continues to ensure that the light at the end of the tunnel continues to shine brightly. Still based on his concept of 'Balance' and a belief that soil is the foundation of everything in agriculture, he has now extended the analytical 'reach of SWEP laboratories into the 'final frontier' of agricultural management – soil biology.

Ted's vision is that three functional components of soil contribute strongly to sustainable agriculture – Cation balance (as they influence the physical nature of the soil), balanced plant nutrition and soil biology. Each of these components needs to be managed in a balanced way and then balanced with each other if true sustainability is to be achieved.



"I believe in treating the soil as a living system," Ted says. "The health of this system has similar requirements to those of healthy people. For example, it is important to have good strong bones and for this you need Calcium, Magnesium, Sodium and Phosphorus – in the right proportions. In a similar way, strong, healthy soil needs Calcium, Magnesium, Sodium, Potassium and Hydrogen – **in the right proportions.**"

Similarly with plant nutrition (in contrast to the usual system of using the soil as a nutrient sponge for plants – filling it up to 'Luxury' levels with a few major elements, squeezing it dry and filling it up again), Ted has developed a system of balanced plant nutrition that adjusts the levels of all essential nutrients in the soil to a point where they are sufficient to provide the needs of a specific Land Use through the period of its growing season. This system has proved successful in maintaining high levels of productivity without the need to maintain luxury levels of soil fertility.

It is also important to understand why the Mikhail System places such an emphasis on achieving BOTH cation and nutrient balance in the soil. "Without a good skeleton, a man or woman cannot grow strong muscles. But they need more than just strong bones; they also require carbohydrates, protein and fat – in the right proportions. So too with plants, the main nutrients are N, P, K – **in the right proportions!**"

"But healthy people need more than just 'Carbs', Protein and Fat – they also require certain amounts of minerals and vitamins. Plants are no different and they need the right balance of Trace Elements for good productivity."

The validity of Ted's vision has been confirmed several times over the years, with the successes achieved through application of his soil balance and plant nutrition principles. Now it has been confirmed yet again with results from recent research showing that soils balanced according to the Mikhail System show a consistent and predictable balance in proportions of certain key indicator groups of soil organisms.

Again, Ted likens this to the situation with other living organisms – including people. “Healthy people do not live in sterile bubbles”, he says. “We all need the right balance of ‘good bacteria’ in our digestive systems and on our skin to help us make the most of available nourishment and help ward off infection. I have always believed that the same would be true in soil and now our research has proved it.”

One particular breakthrough from the SWEP research has been in establishing a link between the active populations of the five indicator groups of micro-organisms (Fungi, Yeast, Photosynthetic Bacteria, Lactic acid Bacteria and Actinomycetes) in well-balanced soils and the Adjusted Cation Exchange Capacity.

This is important, because while other soil biology tests are available, none has ever been able to accurately relate their results to basic soil functions and develop meaningful corrective recommendations. But as a result of its proprietary research into this field, SWEP now offers the first truly complete diagnostic service for those interested in genuinely sustainable, high quality production.

Ted Mikhail has long contended that the key to sustainable soil management lies in ‘Balancing’ each of the three main soil components – Chemistry (nutrients), Physics (cations) and Biology. This approach has come to be known as the “Mikhail System” and is now proving to be one of the most successful and reliable production support systems available.

The new Complete Soil Balance Report includes 33 laboratory tests and 17 calculated results in three sections, covering Plant Nutrition, Soil Cations and Soil Biology. The tests also include both Total Phosphorus and Total Nitrogen as standard inclusions (optional inclusions with the Standard Soil Analysis).

The introductory price for the Complete Soil Balance Analysis will be \$300 per sample (plus GST). This makes the new service significantly cheaper than other ‘biology-only’ tests presently available – while providing much, much more!