



Biocult®

It is possible for plants to become more tolerant to disease and pest pressure when we manage nutrition well. This sounds like a bold statement. When you dig deeper you'll understand how nutritional imbalance is a foundational method to manage a plant's energy levels.

WHY ARE ENERGY LEVELS IN PLANTS SO IMPORTANT?

Sugars, owing to their regulatory function, affect all phases of the life cycle of plants and, interacting within phytohormones, control the processes of growth and development of plants. There are many reports on the importance of sugar (as well as protein and lipid) levels in plant resistance to diseases, and, based on the results of ecological and agronomic studies, there is a strong correlation between soluble sugar concentration and stress tolerance – both biotic and abiotic.

Biocult® forms part of the **NuWay®** approach to sustainable agriculture to assist growers to achieve equivalent results to programs relying on chemical fertilisers, while reducing the environmental footprint.

Biocult®

Put life back into the soil

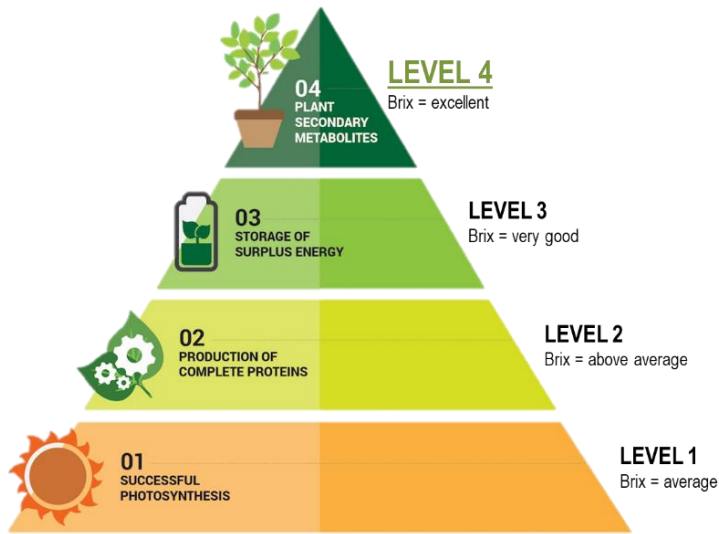
Plants rely less on chemical inputs as plants become more tolerant to pests and diseases.

Biocult® assists the plant in obtaining nutrients from areas that the roots cannot reach, ensuring optimal fertiliser uptake.

Bearing plants have more uniform blossom and fruit size which leads to improved quality of plant produce and yield increase.

For more information on Biocult®, NuWay®, and other AECI Plant Health Products: visit our [website](#), contact your nearest AECI Plant Health representative ([Africa](#) | [International](#)), or contact [Chris Hendriks](#)

In the previous bulletin we briefly looked at the energy level pyramid of a plant:



Resistance levels based on the type and complexity of compounds found in the plant sap | Level 4:

- Systemic acquired resistance (SAR) and induced systemic resistance (ISR) pathways are triggered by microbiome.
- Increased concentration of immunity-related compounds and plant secondary metabolites produced because of the surplus of nutrients available to the plant.
- Plants become more resistant to chewing pests as well as nematodes and viruses.

For the plants to reach this energy level and acquire the resistance associated with the amount of energy in the system, the plants require the correct microbes in the microbiome to assist with nutrient assimilation, metabolism and delivery.

By following a NuWay® program, the grower achieves equivalent results to programs relying on chemical fertilisers.



SO, WHAT DOES A NUWAY® PROGRAM LOOK LIKE?

Our [NuWay®](#) program begins with an assessment of the farmers' soil after which the farmers' planting, nutritional and chemical spray programmes can be optimised. We seek to build healthy soils that better retain nutrients and water to buffer against environmental stresses and recycle nutrients from soil organic matter. This forms the basis of the program and that is why [Biocult®](#) is a vital part of any crop program.

Healthy soil means healthy plants. Soils which allow oxygen and water to permeate through stimulate beneficial soil biology. [Dekompakt®](#) not only leaches Sodium from the topsoil, it also improves soil structure to increase water infiltration and, more importantly, increases oxygen influx into the root zone. This, along with [Biocult®](#), creates a favourable environment for a beneficial biological community which receives nutrients from the roots and in return makes other nutrients available from the soil matrix to deliver added organic metabolites and minerals the plant needs for optimal growth and to combat stress and disease.

The NuWay® programme seeks to ensure that crop energy levels are optimised to give the plant the best chance of achieving yield targets, product quality and fighting off pest pressure. [Rappid®](#) and [Rappid® K](#) are polyphosphate-based to drive energy levels in the plant. [Alexin®](#) contains salicylic acid, which plays an important role in the plant's systemic acquired resistance (SAR), as well as carbohydrate-chelated nutrients to support energy levels while sustaining resistance levels.

Plants cannot grow without water, and agriculture is a major consumer of this valuable and scarce resource. The programme optimises water usage throughout the crop life cycle by building capacity in the soil to retain moisture, optimise irrigation scheduling, minimising water run-off and monitoring the plant's water needs.

The objectives are to proactively address the needs of the crop and, in so doing, reduce the reactive, and often overly aggressive response by the farmer when a crop is in trouble. By addressing nutrient deficiencies with one of our unique nutritional blends ([Multifeed®](#), [Supafeed®](#), [Qwemikelp®](#), [Maxiboost®](#)) or single carbohydrate-chelated elements (Max range), the grower provides the crop with the required nutrients to drive the energy level of their crop to the next level.

Building soil capacity, optimising the crop's own inherent ability to fight disease pressure and minimising the indiscriminate use of fertilisers and agrochemicals is a long term win-win, for the farmer and the consumer. Producing better quality food with fewer chemical residues is the ultimate objective of our NuWay® programme – One Farm at a Time.

