



## *Sustainable plant health, naturally.*

CropBioLife is a 100% natural, new generation plant supplement developed in Australia. It is designed to enhance the way a plant absorbs and utilises nutrition.

CropBioLife is a specially formulated blend of organic compounds extracted from plants and concentrated in a liquid spray. When applied to the leaves of any plant these compounds are absorbed and stimulate the plants own production of these important compounds. Nature likes things to be balanced and CropBioLife drives the metabolism in plants towards perfect balance and better plant health.

CropBioLife contains Flavonoids. Flavonoids are found throughout the plant kingdom and form part of a vital group of plant compounds called "Phenolic Compounds". All plants need these compounds to perform at the top of their game. Phenolic compounds are part of a larger specialised group of plant specific compounds called "Secondary Metabolites".

CropBioLife acts on triggering the plants basic cycle of health and nutrition. You can think of CropBioLife like the metaphoric "snow ball effect". As the flavonoids and other compounds in CropBioLife move through the plant they stimulate the production of additional Secondary Metabolites which unlock a host of functions responsible for overall plant health and vitality.



Once stimulated, the cycle perpetuates with better health driving better nutrition which in turn drives further enhanced health culminating in sustained performance. Plants performing at their best naturally are not reliant on synthetic chemical sprays which just produce unsustainable results.

Increased health and nutrition has many valuable, direct effects on plant sustainability. Even when the plant is stressed by environmental issues, insect or disease attack an energy reserve can be the difference between high yield and a wasted growing season.

Being an all-natural folio spray, free from toxins, CropBioLife spray is extremely safe to use. There is no risk to farm staff or stock. Run off onto soils does not impact the environment. Waterways and staff are also safer from the reduced reliance on traditional toxic chemical sprays. Furthermore, it will not harm beneficial insects as it is not a poison.

Add CropBioLife to your spray program and enjoy the benefits our customers are already enjoying. It will put a smile on your face when you see and taste what natural plant health can deliver.



## Nutrition

Possibly the most important action of CropBioLife is the stimulation of better nutrient absorption.

The first step to improved health for plants is the ability to take up balanced nutrition and use it efficiently. Plants can't get up and go and get nutrients, the nutrients need to be delivered. If we don't want to move we can call for food to be delivered. Plants actually can do the same thing, sort of. Through the actions of Secondary Metabolites their roots become like little transmitters in the soil. These little transmitters signal to the soil organisms in the root area, called the Rhizosphere. It does this by improving a function of the roots called Root Exudation. For centuries it was believed if you simply add more and more nutrients to the soil everything would be great. Wrong. We now know there is an amazing cooperative relationship between plants and soil microbes. There is a microcosm of life around the roots of healthy plants. These little organisms deliver "plant available nutrition" to the surface of the roots so the plant can absorb it. In turn the plant encourages and nurtures the microbes it needs. Using fertilisers without a healthy soil microbe population won't help the plant. It simply can't absorb it.



Once the plant has better access to "Plant Available Nutrition" it needs the energy to process it into new growth and reproduction. (i.e. fruit) By boosting the plants own Phenolic compounds CropBioLife helps with that too. Secondary Metabolites are responsible for growth, photosynthesis and reproduction in the plant.



Phenolic compounds are also responsible for the plants defences and their ability to handle environmental stress like heat, drought and frost. Yes, plants can defend themselves if they are very healthy, without going to the hardware store for a pesticide. Plants don't have the luxury of moving away from disease or moving into the shade. They evolved the mechanisms to cope with disease and stress events but they only work well when the plant is fit and healthy with strong Phenolics running through it.

## Humans and Nutrition

Let's expand on the importance of balanced plant nutrition and how it relates to human health. When we taste fruit or vegetables that flavour is a representation of its nutrient value and is important for our human health. Every plant we grow is a reflection of the environment it's grown in and the plants health throughout its growing cycle. What we taste is a direct representation of the plants ability to assimilate nutrients. Ever thought some tomatoes from the supermarket have no taste? Mass produced as cheaply as possible with a focus on yield, they lack nutrition and therefore taste.

Just to sum up. CropBioLife delivers flavonoids in a leaf spray that boosts and balances secondary metabolism in plants. Our customers and our lab results show major improvements in the take-up of nutrition which enhances the health and vitality of the plant. Fit plants, just like fit humans, are able to perform better and survive better. Put some CropBioLife on your crop and watch it grow fit and healthy.

***DR Raj Kumar, Nov 2017***

## **Phenolic Compounds**

*Phenolic compounds are key to a variety of functions within plants. Many are formed in the plant from amino acids.*

*Simple phenolic compounds can be important in defence against bacterial or fungal pathogens. Phenolic compounds have been observed to increase in concentration in the leaves of certain plants in response to fungal attack which enables the plant to mount a complex defence response.*

*Other phenolic compounds, called isoflavones, are synthesized rapidly in plants of the legume family when they are attacked by pathogens, and they have strong antimicrobial activity.*

*Other Phenolics function as attractants. Anthocyanins and anthocyanidins are phenolic pigments that impart pink and purple colours to flowers and fruits. This pigmentation attracts insects and other animals that move between individual plants and accomplish pollination and fruit dispersal.*

