



FERTILIZERS

*Quality Ingredients
Australian Made
Family Owned*

Nutrient Solutions

***Almond* Nutritional Guide**

Crop nutrient budgeting is critical to improve production efficiency and to reduce environmental impacts. SLTEC®'s range of quality fluid fertilizers and soil and plant stimulants are supported by our comprehensive field agronomy service to help you achieve your production goals.

www.sltec.com.au

Why Choose SLTEC® Fertilizers?

SLTEC® Fertilizers is a leading manufacturer of fluid Fertilizers, based in Northern Victoria.

Our Promise

Quality

SLTEC® Fertilizers is committed to supplying consistently high quality products.

Investment

SLTEC® Fertilizers will ensure that your fertilizer inputs maximise the return on your investment.

Service

SLTEC® Fertilizers will provide professional, logistical and agronomic support to ensure a sustainable relationship.

Read our quality assurance policy online at sltec.com.au/quality

Why use Fluid Fertilizer?

- Efficient and highly plant available
- Can deliver many nutrients with a single application
- Small and frequent applications reduce leaching and runoff
- Foliar and Fertigation options allow flexible application timing unlike relying on broadcast application
- Consistency of product and uniform application across the soil
- Nutrients infiltrate to the root zone where maximum uptake is achieved
- Foliar application particularly of trace elements avoids tie up in the soil
- Can be mixed with a range of farm chemicals
- Labour savings and improved workplace safety



SLTEC's Commitment to Quality

Can your fertilizer supplier give you this sort of quality assurance?

SLTEC® is committed to delivering quality products and services.

We continue to put a tremendous effort into ensuring that our products meet the tightest quality parameters.


- We carefully select the ingredients we use in our formulations from suppliers all over the globe.
- We routinely seek independent laboratory testing to confirm the levels of all nutrients listed on our product labels. We also regularly test for heavy metals or other contamination.
- Our blends are developed by our formulation chemist, who has now developed over 400 different blends, some of which have been servicing very sensitive crops in hygienically clean glass house environments.
- We invest annually in formulation research and advanced chemistries for the fluid fertilizer and industrial water treatment sectors.
- Our team has specialized formulation software that aids the development of each blend, from basic chemistry building blocks into complex and sophisticated formulations for applications such as hydroponics, foliar fertilizer, fertigation, water treatment etc.
- Our batching and mixing systems are calibrated every 6 months by an external certifying body.
- Each batch must meet a variety of tests and quality specifications before being released for dispatch.
- Our labels state accurately the nutrient content of each blend and comply fully with state and federal legislation and the Fertilizer Australia Labelling Code of Practice.
- We retain samples of each and every blend made with a unique batch number, enabling traceability of batches.
- Our staff are qualified and thoroughly trained to ensure our products and services remain at the highest standards of excellence.


In summary, quality is an absolutely essential component of the culture and processes at SLTEC® and we pride ourselves on it. Development, manufacture, storage, labelling and transport of our products is carried out in a manner that aims to provide our customers with the assurance that the products they receive are of the highest quality, ready to use and will deliver the outcomes desired.

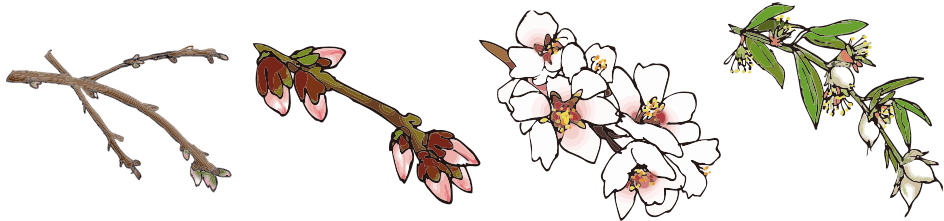

















































Almond Fluid Fertilizer Options

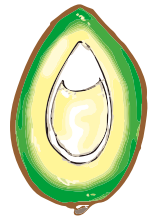
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








Fertigation

Foliar



Growth Stage		Dormancy		Budswell		Blossom		Stage 1	
				Green Tip		Full Bloom		Fruit Set	
Physiological Process		Root Growth				Pollination		Cell Division	
Product Code	Name	Below is a list of some key products in the SLTEC range suitable for almond production							
SG0037	Liquid Lime 38								
SS9003	SS 10:14:0 + Zn								
GG0064	Nitro QUAD 3								
GG0024	Cal Mag & Boron								
GG0009	Baseline Plus								
SNPK0061	Nitro Combi TE								
GG0072	Carbo K								
SG0017	BiologiCAL® PLUS								
SG0039	QuadSHOT®								
SNPK0036	Super Z Foliar								
SNPK0050	Boron Complex								
SNPK0046	TE 8 PLUS								
SNPK0031	Fe PLUS								
SNPK0026	Z PLUS								



Stage 1		Stage 2		Stage 3		Post Harvest	
Fruit Enlargement		Kernel Development		Hull Split		Leaf Fall	
Cell Expansion		Embryo Sizing		Dry Matter Filling & Bud Differentiation		Root Growth	
Our aim is to take away the hassle of mixing fertiliser and to make fertigation easier for you.							
							
							
							
							
							
							
							
							
							
							
							
							



Product Technical Information

Product Technical Information												
Product Code	Name	N% (w/v)	P% (w/v)	K% (w/v)	S% (w/v)	Ca% (w/v)	Bio Stimulant	Chelating Agent	Specific Gravity (kg/L)	pH Range	Typical Application Rates	
											Fertigation	Foliar Use 200 to 2,000 L/ha water
SS9003	Liquid Lime 38	-	-	-	-	38.0	-	-	1.60 - 1.61	9.0 - 10.0	Speak to your SLTEC® representative for specific application rates	
SS9003	SS 10:14:0 + Zn N as NH ₄ 10.1%, P as PO ₄ 14.0%, Zn 1.0%	10.1	14.0	-	-	-	-	Y	1.29 - 1.30	6.0 - 7.0	20 - 100 L/ha	1 - 5 L/ha
GG0064	Nitro QUAD 3 N as NO ₃ 10.3%, N as NH ₄ 10.3%, N as Urea 20.6%, P as PO ₄ 0.1%, Fe 0.001%, Si 0.003%, Fulvic Acid 0.01%, Fish Emulsion 0.2%, Humic Acid 0.2%, Kelp 0.2%, Molasses 0.2%	41.1	0.1	0.1	-	-	Y	Y	1.30 - 1.32	6.0 - 7.0	10 - 80 L/ha	10 - 60 L/ha
GG0024	Cal Mag & Boron N as NO ₃ 12.4%, Ca 12.1%, Mg 3.4%, B 0.2%	12.4	-	-	-	12.1	-	Y	1.47 - 1.50	2.0 - 3.0	10 - 100 L/ha	5 - 10 L/ha
GG0009	Baseline Plus N as NO ₃ 0.02%, N as Urea 11.7%, P as PO ₄ 4.9%, Mg 0.2%, Mn 0.01%, Zn 0.01%, Cu 0.005%, Mo 0.005%, B 0.02%, Fe 0.01%, Fulvic Acid 0.01%, Fish Emulsion 0.4%, Humic Acid 0.3%, Kelp 0.4%, Molasses 0.4%	11.7	4.9	13.6	2.0	0.01	Y	Y	1.29 - 1.32	7.5 - 8.5	10 - 80 L/ha	2 - 15 L/ha
SNPK0061	Nitro Combi TE N as NO ₃ 2.7%, Zn 2.2%, Fe 2.2%, Mn 1.6%, Cu 0.3%, B 0.8%, Mo 0.03%, Mg 0.7%, Na 0.014%	2.7	-	-	1.3	-	-	-	1.24 - 1.26	2.0 - 3.0	2 - 15 L/ha	1 - 2 L/ha
GG0072	Carbo K	-	-	43.9	-	-	-	-	1.54 - 1.55	13.0 - 14.0	10 - 80 L/ha	1 - 5 L/ha
SG0017	BiologiCAL® PLUS N as NO ₃ 0.3%, P as PO ₄ 0.1%, Fulvic Acid 0.01%, Fish Emulsion 0.3%, Humic Acid 0.2%, Kelp 0.3%, Molasses 41.9%	0.3	0.1	2.0	1.8	6.3	Y	Y	1.27 - 1.30	8.0 - 10.0	20 - 60 L/ha	4 - 20 L/ha
SG0039	QuadSHOT® C 5.2%, Fe 0.006%, Fulvic Acid 0.3%, Fish Emulsion 8.0%, Humic Acid 6.6%, Kelp 8.0%, Molasses 8.0%	0.3	0.1	3.4	0.2	0.2	Y	Y	1.15 - 1.16	10.0 - 11.0	20 - 60 L/ha	1 - 20 L/ha
SNPK0036	Super Z Foliar N as NO ₃ 10.6%, N as NH ₄ 7.7%, N as Urea 0.7%, Zn 6.6%	19.0	-	-	-	-	-	-	1.33 - 1.34	3.0 - 4.0	5 - 10 L/ha	1 - 3 L/ha
SNPK0050	Boron Complex N as amine 6%, B 15%	6.0	-	-	-	-	-	-	1.34 - 1.38	7.5 - 8.5	2 - 5 L/ha	1 - 3 L/ha
SNPK0046	TE 8 PLUS N as NO ₃ 2.6%, Mg 2.4%, Mn 3.1%, Zn 3.1%, Cu 0.5%, Mo 0.02%, B 0.2%, Fe 0.7%, Co 0.05%, Fulvic Acid 0.5%	2.6	-	0.1	4.2	-	Y	Y	1.28 - 1.29	1.0 - 2.0	10 - 25 L/ha	2 - 10 L/ha
SNPK0031	Fe PLUS Fe 8.1%, Fulvic Acid 0.5%	-	-	0.1	4.7	-	Y	Y	1.22 - 1.23	2.0 - 3.0	5 - 10 L/ha	1 - 3 L/ha
SNPK0026	Z PLUS Zn 15.9%, Fulvic Acid 0.5%	-	-	0.1	7.8	-	-	Y	1.36 - 1.38	2.0 - 3.0	5 - 10 L/ha	1 - 3 L/ha

At last! A complete fluid nutrient solution



Baseline Plus™

Baseline Plus has a complete and balanced NPK analysis suitable for fertigation and foliar application across a wide range of crops. The analysis is perfect for plant establishment and maintained growth where a N : K ratio near 1 : 1 or a mid-season nutrient boost is required.

Benefits of Baseline Plus

- Chelated trace elements for rapid plant uptake and to drive the NPK metabolism.
- Contains SLTEC's QuadSHOT® - The ingredients stimulate soil biological activity; improving the cycling and availability of plant nutrients, plant uptake efficiencies and soil fertility and health.
- Baseline Plus has a high analysis compared to other liquid products and provides economic and efficient supply of nutrients and the capacity to reduce rates compared to common prilled complete fertilizers on the market.
- Efficiencies can be made with Baseline Plus in fertigation applications by placing the nutrients at the root mass where they will be taken up by the plant; reducing loss or waste of nutrients.



“Growing a healthy tree and filling the canopy space early is a priority in a new orchard. SLTEC®'s fertigation program has assisted us to achieve our growth targets.”
Rodney Hogan, Montague Legana Orchards

Guaranteed Analysis

Nitrogen (N):	11.8%
Phosphorus (P):	4.8%
Potassium (K):	13.6%
Sulfur (S):	2.0%
Magnesium (Mg):	0.2%
Manganese (Mn):	0.01%
Zinc (Zn):	0.01%
Copper (Cu):	0.005%
Boron (B):	0.02%
Iron (Fe):	0.01%
Molybdenum (Mo):	0.005%
Fulvic Acid:	0.01%
Fish Emulsion:	0.42%
Humic Acid:	0.34%
Kelp:	0.42%
Molasses:	0.42%
Specific Gravity:	1.29 - 1.32 kg/L
pH Range:	7.5 - 8.5

Typical Application Rates

Foliar:

2 to 15 L/ha
Horticulture use 200 to 2,000 L/ha water
Broadacre use at least 100 L/ha water

Fertigation:

10 to 80 L/ha

Contact:

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E: enquiries@sltec.com.au

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Crop Nutritional Information

To assist in developing a greater understanding of the nutrients required to grow healthy, profitable and sustainable crops, we have put together a summary of some of the functions and interactions that occur.

To maximise yield and profit, we are constantly reminded of Liebig's Law, which states, "Growth is not controlled by the total amount of resources available to a plant, but rather, the most limiting resource required, at any one time".

The nutrients that you invest in to maximise yield, quality and profit, do not work in isolation, but in many complex chemical interactions, that together, convert light energy into a valuable food and fibre source.

Almonds result from a vegetative and reproductive cycle

extending over two years. To maximise crop potential, a fertiliser program needs to stimulate current season growth, and at the same time target bud development for the following season.

A balanced fertilizer program needs to aim to increase the uptake and storage of nutrients to support and sustain growth, bud development and crop production. The bulk of the program is best delivered by regular fertigation, however complimentary foliar applications are necessary during peak nutrient demands throughout the season.

SLTEC® Fertilizers range of innovative fluid fertilizers offer growers concentrated fully dissolved solutions, readily available to Almond crops in a convenient ready to use form.

Fertilizer Program

High inputs of nitrogen, phosphorus and potassium remain the major focus of contemporary almond production. In order to provide a balanced supply of nutrients, it is necessary to consider the nutrients removed with the crop in the previous year and also estimate other losses that occur within the production system. Various trials have explored the export of nutrients from harvested fruit.

The table below illustrates average whole fruit nutrient removal figures (kg/t) from demonstration trials in South Australia's Riverland. The figures are drawn from nut samples collected just prior to harvest; fruit was hand cracked and a full analysis of husk, shell and kernel conducted.

Average Whole Fruit Nutrient Removal kg/t (Kernel Yield of 3.7 t/ha)

N	P	K	Ca	Mg	Zn	Mn	Fe	Cu	B	S
60	7.5	68	6	4.5	0.09	0.08	0.35	0.03	0.13	2.3

The fruit removal figures provide a basis for developing an almond fertilizer program, however more inputs are required to account for the nutrients used, stored and lost during the season. It has been estimated that between 20-30% above fruit removal is necessary for tissue growth, storage in roots,

branches and the trunk, and losses via the atmosphere, soil leaching and prunings etc. The following table illustrates a fertilizer program (kg/ha) based on the same fruit nutrient removal data, plus a 20% margin for tree growth and orchard losses.

Average Whole Fruit Nutrient Removal kg/ha plus 20% (Kernel Yield of 3.7 t/ha)

N	P	K	Ca	Mg	Zn	Mn	Fe	Cu	B	S
264	33	300	25	20	0.39	0.37	1.50	0.11	0.58	10

"Export of nutrient" analysis can help guide the development of an almond fertilizer budget, however it is imperative that other tools such as soil and foliar plant tissue sampling, sap analysis and soil solution extraction are employed to help guide fertilizer decision making. Of course, an accurate assessment of actual crop load needs also drive decisions of fertilizer use during the growing season.

Mature almond tree vigour, in terms of vegetative growth, needs to be maintained at a sustainable level (i.e. a healthy cropping to vegetative growth ratio is the aim).

Excessive vegetative growth can lead to increased shade within the canopy and poor flower bud development, reducing cropping potential. An optimal fertilizer regime will enhance fruitfulness while keeping excessive canopy growth in check.

Critical timing to provide NPK nutrition is during nut growth from bloom to hull split, with most nitrogen required early Spring to drive shoot growth and potassium demand continuing through to mid Summer. Zinc and boron trace elements are most needed at bloom, with post-harvest foliar applications proving to be particularly effective at loading buds prior to dormancy.

Macro Nutrients

Nitrogen

Nitrogen is the major nutrient for shoot and fruit development and as a key component of chlorophyll is necessary for photosynthesis. Also an essential component of structural proteins, the demand for nitrogen is high throughout the early half of the growing season to produce quality wood for next year's crop. Later, post-harvest applications of up to 20-30 percent of yearly nitrogen requirements are necessary to facilitate carbohydrate storage in roots and branches in preparation for dormancy.

Nitrogen is integral to bud building, initiation and differentiation. Foliar application of nitrogen at pit hardening increases the nitrogen content of buds, promoting stronger buds and uniform flower development for the following season.



Nitro QUAD 3™

41% nitrogen in three forms with added biological stimulants for maximum uptake and soil retention.

Phosphorus

Phosphorus is necessary for new cell formation, cell division and enlargement; photosynthetic processes and carbohydrate transport. Phosphorus encourages the early development of shoots and especially roots, stimulates flower and fruit production and hastens maturity. Phosphorus needs to be available for crop 3 to 4 weeks prior to bud burst and through the flowering and fruit development.



SS 10:14:0 + Zn™

Ammoniated phosphorus with zinc, perfect to promote growth in early spring.

Potassium

Potassium is an essential nutrient for photosynthesis, aiding the functioning of chlorophyll and the activation of enzymes. Potassium is involved in the formation of proteins and is especially important in the translocation of carbohydrates, sugars and fats. Potassium is the 'plant preferred' ion for maintaining water content within cells.

Potassium is critical to the health of almond trees. Adequate potassium inputs can increase almond yields, whilst a deficiency can result in poor filling and low oil content in kernels. Foliar applications of potassium nitrate have been shown to improve the flowering coincidence across all varieties.



Carbo K™

High analysis (43.8% potassium) for maximum nut fill.

Calcium

Calcium is necessary for the growth and function of shoot and especially root tips, strengthens cell walls, aids in cell division, cell elongation and the permeability of cell membranes.

It is also important to maintain adequate calcium levels in the soil to promote healthy soil structure, improve cation exchange balance and encourage beneficial soil flora.



BiologiCAL® PLUS

Plant available calcium with a balanced mix of biostimulants.

Magnesium

Magnesium is an essential mineral component of the chlorophyll molecule and is therefore critical to photosynthesis. Magnesium aids in enzyme function, protein synthesis and the formation of sugars and starches. Magnesium uptake is reduced when competing with high potassium and ammonium levels in irrigated sandy soils; deficiency (interveinal chlorosis of older leaves) will become a problem as these soils acidify over time.



Cal Mag & Boron™

Maintains plant calcium:magnesium ratios with boron to assist calcium mobility.

Micro Nutrients



Zinc

Zinc plays an essential role in protein, carbohydrate and hormone synthesis and is involved in enzyme activity and plasma membrane integrity. In almond trees zinc deficiency may be evidenced in reduced leaf size (little leaf disease) and inhibited shoot formation. Zinc deficiency is the most commonly encountered nutrient deficiency in Australian agriculture, particularly on the irrigated calcareous soils of the Murray – Mallee.



Z PLUS™

15.9% zinc with added fulvic acid for maximum uptake.

Iron

Iron is necessary for chlorophyll formation and photosynthesis, aids respiration, protein formation and the release of energy from starches. Iron availability is limited in calcareous soils with a high subsoil pH, especially those prone to water logging or following significant rainfall; leaf yellowing or chlorosis is common in almonds grown on these soils.



Fe PLUS™

8% iron with added fulvic acid for maximum uptake.

Boron

Boron is involved in cell division, protein and hormone synthesis, carbohydrate metabolism and calcium translocation. It is critical for pollen tube elongation and therefore flowering and fruit set; Boron deficiency at flowering will reduce fruit set and yields. As boron accumulates in almond hulls, significant quantities are removed at harvest and must be replaced via the nutrient program. Boron availability to the tree is reduced in high pH soils, overlimed soils, soils with high levels of nitrogen and/or calcium, sandy soils and soils with low organic content. Cold wet weather, especially after a long dry spell can also inhibit boron availability.



Boron Complex™

15% boron to load up buds for maximum set at flowering.

Copper

Copper is involved in chlorophyll production, photosynthesis, enzyme systems, water movement and seed production. Copper is critical for disease resistance and lignification (wood development). Deficiency causes twig die back and weakens limbs resulting in breakage under heavy crop loads or during windy weather. High soil nitrate levels reduce copper uptake and sandy alkaline soils with little organic matter contain only low levels of available copper.



TE 8 PLUS™

A foliar multi-trace element blend for rapid plant response.



Nitro Combi TE™

Combine all of your trace element requirements with one blend. A balanced, high analysis formulation with fulvic acid for maximum uptake

References

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pH, Soil Acidity, Lime & Gypsum

Applying lime to a soil reduces its acidity by raising the pH. It also supplies calcium. Increasing soil acidity affects plant nutrient availability, reduces the activity of beneficial bacteria that decompose organic matter and heavy metals such as aluminium and iron become more soluble, tying up phosphorus into forms unavailable to plants, and may build up to toxic levels.

Soil should always be sampled before establishing a new planting. If lime and/or gypsum are required, incorporate it during soil preparation. It is often useful to dig a pit and to sample the subsoil to understand any potential limitations to tree growth further down the profile.

A soil sample every 3 years taken from the same locations within a block is recommended to monitor nutrient levels and to check that the pH remains satisfactory. This allows time for program changes to take effect. If lime is required apply in the Autumn.

The preferred pH before establishing a new vineyard is generally 5.5 to 6.8 depending on the soil type. Sandy or lighter soils tend to require pH toward the higher end. As a rule of thumb - apply lime to established vineyards when the pH falls below 5.5.

Use dolomitic lime (high in magnesium) on soils that are low in magnesium.

Gypsum is usually recommended on sodic and magnesic soils when pH is high and exchangeable calcium is low. High magnesium soils are often massive and hard setting (when exchangeable magnesium is greater than 15%). High sodium soils tend to be dispersive when wet and form a crust when dry (when exchangeable Sodium is greater than 5%).

Desirable Soil Exchangeable Cation Balance

Element	Balance (%)
Calcium	60 - 70
Magnesium	12 - 15
Potassium	3 - 5
ESP	< 5
Hydrogen	< 20
Ca : Mg ratio	2 - 4

Typical Cation Exchange Values for Various Soil Textures

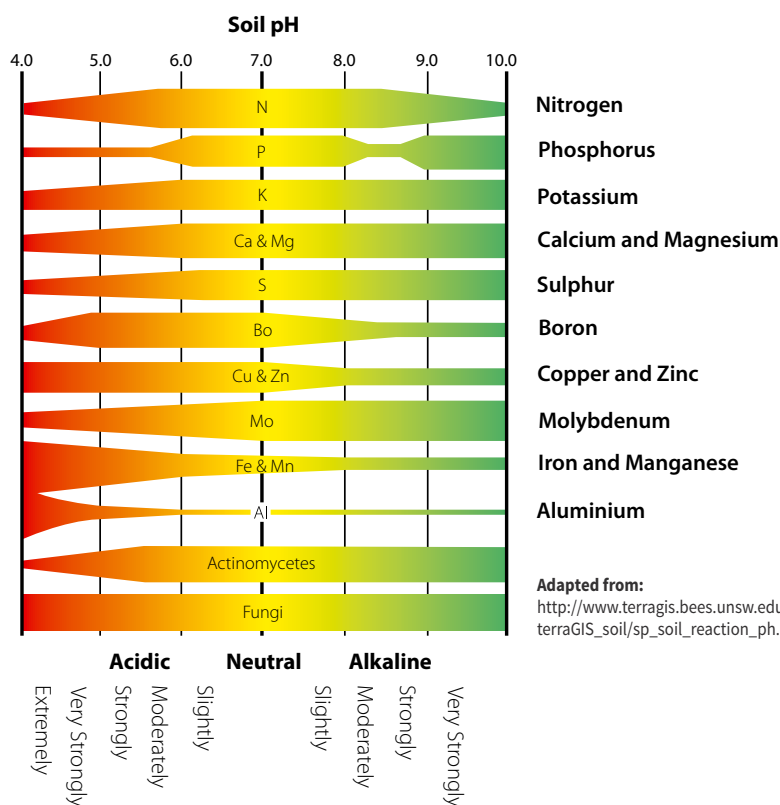
(preferred level >10 meq/100g)

Texture	Typical CEC
Sand	< 5 meq / 100g
Sandy Loam	5 - 10 meq / 100g
Clay Loam	10 - 25 meq / 100g
Light Clay	25 - 30 meq / 100g
Medium Clay	30 - 35 meq / 100g
Heavy Clay	> 35 meq / 100g

(Based on Clay content only - eg: a high organic matter clay may have a CEC over 50 meq/100g)

Recommended Soil pH Level for Almonds

Optimum pH Range	
Almond	6.0 - 7.5
Optimum	6.0 to 6.5
Lower	5.5 to 5.8



Maximise Your Crop's Yield Potential



Nitro Combi TE™

High analysis trace element blend activated with fulvic acid to maximise uptake, ideal for foliar and fertigation applications to aid flowering, drive vegetative growth and fruit or nut fill.

Benefits of Nitro Combi TE™

- A focus on zinc, copper, magnesium, manganese and iron - key trace elements associated with photosynthesis, enzyme activity and metabolism.
- Boron and zinc have been shown to have a synergistic effect when combined and applied together; promoting strong reproductive and vegetative growth.
- High boron to aid pollen tube elongation during pollination and fruit set.
- Fully soluble nutrients in plant available forms.
- Fulvic acid provides an efficient complexing agent with only very small amounts required to improve plant tissue permeability for a range of nutrients.

Nitro Combi TE™ is versatile across a range of horticultural crops. Use pre bloom to improve bud nutrient levels, during the season to drive vegetative growth or post harvest to ensure adequate nutrition in storage tissues ready for the following season.

Guaranteed Analysis

Nitrogen (N):	2.7%
N as nitrate	2.7%
Potassium (K):	0.1%
Sulphur (S):	1.3%
Magnesium (Mg):	0.7%
Manganese (Mn):	1.6%
Zinc (Zn):	2.2%
Copper (Cu):	2.7%
Molybdenum (Mo):	0.03%
Boron (B):	0.8%
Iron (Fe):	2.2%
Fulvic Acid:	0.5%
Specific Gravity:	1.25 kg/L
pH:	2.0 to 3.0

Typical Application Rates

Foliar

1 to 2 L/ha

Horticulture use 200 to 2,000 L/ha water

Broadacre use at least 100 L/ha water

Fertigation

2 to 15 L/ha



Contact:

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E: enquiries@sltec.com.au

www.sltec.com.au

Delivering Quality Produce



Cal Mag & Boron

The N : Ca ratio of 1 : 1 is perfect for plant establishment and during rapid cell division phases or periods of stress where both growth and cell strength needs to be maintained.

Magnesium maintains plant colour as it is a key component of chlorophyll production.

Both Magnesium and Boron aid in the translocation of Calcium to growing points. Boron is essential for the germination and viability of pollen.

Benefits of Cal Mag & Boron

- Soluble nutrients provide hassle free injection (no insoluble blockages) and rapid plant uptake
- High analysis provides for economic and efficient supply of nutrients and the capacity to reduce rates
- Maintains plant Ca : Mg ratios
- Boron to assist Calcium mobility
- Improves plant cell wall strength and fruit firmness
- Chloride free

Guaranteed Analysis

Nitrogen (N):	12.4%
Calcium (Ca):	12.3%
Magnesium (Mg):	3.4%
Boron (B):	0.2%
Specific Gravity:	1.47 - 1.50 Kg/L
pH Range:	2.0 - 3.0

Typical Application Rates

General Foliar:

5 to 10 L/ha
Horticulture use 200 to 2,000 L/ha water
Broadacre use at least 100 L/ha water

Fertigation:

10 to 100 L/ha

“ SLTEC® Cal Mag and Boron is a perfect fit for our premium lettuce programs.
John Frisina - Landmark VIC



“ Cal Mag & Boron driving quality strawberry production.
Peter Morrison - Roberts Ruralco, TAS

Contact:

T: 1800 768 224

E: enquiries@sltec.com.au

www.sltec.com.au

Soil Health

Inputs that Stimulate Soil Biology

Kelp

Bio Kelp (22% Kelp)

Kelp extracts contain amino acids such as glycine and plant hormones including auxins, betaines and cytokinins which in combination stimulate plant growth. They should not be regarded as fertilizers as the nutrient levels are typically too low to have any direct value. Kelp extracts do have strong effects on soil microbes and in particular stimulate the activity of photosynthetic bacteria and actinomycetes which can help provide protection against soil-borne pathogens.

Fish Emulsion

Fish Emulsion (100% Fish Emulsion)

Fish Emulsions are a source of readily available organic nitrogen and can be especially useful when this is needed to improve the C : N ratio in the soil. They are also beneficial in stimulating growth and activity of many micro-organisms. The net effect is an increase in the potential for nitrogen cycling and also a somewhat reduced requirement for nitrogen inputs to some crops and pasture. Lower application rates (2 L/ha) appear to stimulate fungi and cellulose utilisers that do not respond well to high Nitrogen. Higher rates (10 L/ha) appear to promote photosynthetic bacteria and actinomycetes and suppress lactic acid bacteria.

Humate

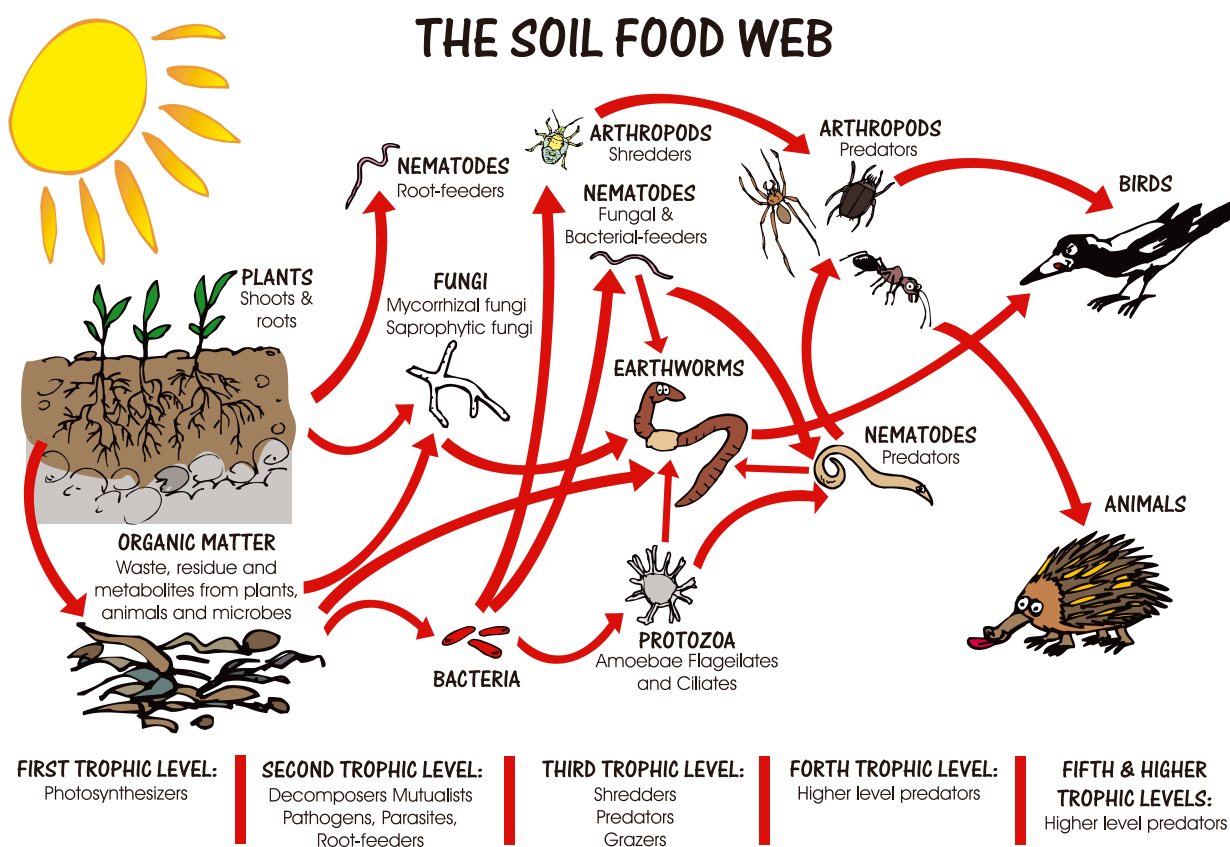
Humic K 26 (25% Humic Acid)

Humates are soil conditioners with high carbon content. They are useful materials where adjustment of the C : N ratio is required. Humates are also important in releasing bound nutrients into plant available forms and helping to improve soil structure at relatively low application rates. These materials produce significant biological effects with a strong suppression of lactic acid bacteria and stimulation of fungi, especially cellulose utilisers, which as the name suggests are important in the breakdown of cellulose and certain other resistant materials, thus increasing the formation of humus and helping to improve soil structure.

Molasses

Molasses (100% Molasses)

Molasses provides a readily metabolisable carbon and energy source that can be utilised by most organisms. Low rates (2 L/ha) can be effective in stimulating most groups of microbes and in particular fermenters like lactic acid bacteria and yeasts. However, being quickly utilised, it will provide only a short-term benefit unless other actions have been taken to improve the soil environment.





Highly Available, Activated Calcium + Organic Boost

BiologiCAL® PLUS

Plants require calcium in relatively large amounts for many functions including cell division & strength, root system and leaf development. Calcium is also an essential element required for healthy soils, influencing both the physical, chemical and biological aspects.

Benefits of BiologiCAL® PLUS

- Aids in maintaining a high pH to control club root
- Improves nitrogen efficiency; compatible with a wide range of nitrogen based products.
- Helps to displace sodium and magnesium in difficult soils
- Improves soil structure and friability
- Improving moisture penetration/infiltration
- A unique form of activated calcium that stimulates plant uptake
- Built in soil and plant stimulants to enhance soil fertility and plant health
- Assists in reduction of soil nematodes that inhibit root growth and plant productivity.
- Provides plant available calcium without extra nitrogen
- Improves plant resistance to disease and overall resilience
- Improves cell wall strength, plant durability and stress tolerance.

Guaranteed Analysis

Calcium (Ca)	6.3%
Nitrogen (N)	0.3%
Phosphorus (P)	0.1%
Potassium (K)	2.0%
Sulphur (S)	1.8%
Molasses	41.9%
Carbon (C)	20.0%
Fish Emulsion	0.3%
Kelp	0.3%
Humic Acid	0.2%
Specific Gravity	1.27 to 1.30 kg/L
pH Range	8.0 to 10.0

BiologiCAL® PLUS TE

All the Benefits of BiologiCAL® PLUS with an additional 5 trace Elements; Zn 0.6%, Mn 0.3%, Cu 0.15%, Mo 0.005% & B 0.05%



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Liquid Lime 38™ (Flowable Lime)

Product Code: SG0037



Liquid Lime 38™ is a highly flowable calcium carbonate suspension designed to deliver high purity, micronized particles to the soil to raise pH and improve soil structure. Through foliar application, it provides an extremely efficient source of calcium to crops.

Liquid Lime 38™ utilizes a highly advanced industrial process to hold the micronized particles in suspension, thereby improving the dispersion of the product when applied to the soil or foliage.

Liquid Lime 38™ is an extremely concentrated and reactive form of calcium carbonate (or “lime”). It is produced by a specialised milling process where the high purity raw material is ground to 1 micron in size. The product’s extreme fineness delivers an impressive surface area of 13 m²/g, significantly enhancing its reactivity within the soil compared to all other forms of calcium carbonate.

Liquid Lime 38™ has a superior Neutralising Value (NV) of 99 (pure calcium carbonate at NV 100 is the benchmark) compared to other fluid lime sources on the Australian market. However, this is only part of the story - because of the fineness of Liquid Lime 38, its effective Neutralising Value is considered to be 99 because every particle is 100% reactive in the soil.

Also, it is far more effective in higher pH soils. A coarse aglime will struggle to lift soil pH above 6 because the logarithmic response of the pH scale means the soil environment isn’t acidic enough to react and dissolve coarser lime particles. Liquid Lime 38™ can further assist in pH adjustment.



“The high-grade material in Liquid Lime 38™ means responses are extremely fast in the drip zone – in Thailand on red tropical soil, for example, the pH increased from 4.6 to 5.7 in three weeks after an application of 32 L/ha!”

Why Use Liquid Lime 38™?

- Highly uniform - extremely fine particle size (1 micron)
- Highly reactive - high purity calcium carbonate
- Neutralizing Value of 99
- Flowable for easy pumping
- Can be applied to soil as a broadcast or banded application or via irrigation systems
- Can be applied to crops as a foliar calcium treatment

Chemical Analysis;

Calcium (Ca):	38% w/v
Carbonate (CO ₃):	57.7% w/v
Carbon (C):	11.6 % w/v
pH:	9 - 10
Specific Gravity:	1.60 kg/L
Neutralising Value:	99

Application Rates (Soil)

Soil Type/Textural Class	L per ha Liquid Lime 38™ (per 0.1 pH improvement)
Sands / Loamy Sands	30 - 40
Sandy / Silty Loams	50 - 70
Sandy Clay Loams	70 - 85
Light to Medium Clays	85 - 90
Heavy Clays	90 +

Application Rates (Foliar)

Foliar Applications

Crop Type	Growth Stage					
Apples	Pink Bud	Flowering	Fruit Set	Fruit Development	Ripening	Total
	5 – 10 L/ha with >1500 L/ha Water	No application during this period	5 – 10 L/ha with >1500 L/ha Water	5 – 10 L/ha with >1500 L/ha Water	5 – 10 L/ha with >1500 L/ha Water	25 - 50 L/ha
Cherry	Pre-Flowering	Fruit Development	Ripening	Post Harvest		Total
	5 – 10 L/ha with >1500 L/ha Water	5 – 10 L/ha with >1500 L/ha Water	5 – 10 L/ha with >1500 L/ha Water	5 – 10 L/ha with >1500 L/ha Water		20 - 40 L/ha
Tomatoes	Vegetative	Flowering	Fruit Set	Fruit Development	Ripening	Harvest
	5 – 10 L/ha with >1000 L/ha Water Or fertigate with irrigation system at the same rate	No application during this period	5 – 10 L/ha with >1000 L/ha Water Or fertigate with irrigation system at the same rate	5 – 10 L/ha with >1000 L/ha Water Or fertigate with irrigation system at the same rate	5 – 10 L/ha with >1000 L/ha Water Or fertigate with irrigation system at the same rate	5 – 10 L/ha with >1000 L/ha Water Or fertigate with irrigation system at the same rate
						30 - 60 L/ha

Soil Banded or Broadcast Applications

Crop Type	Growth Stage	
Potato	Tuber Initiation to Canopy Closure	
	200 – 500 L/ha with 400 to 800 L/ha Water	
Carrot	3-4 Leaf Stage	7-8 Leaf Stage
	100-200 L/ha with 400 to 800 L/ha Water	100-200 L/ha with 400 to 800 L/ha Water

Nutrient Efficiency versus Soil pH

Element	pH 4.5	pH 5.0	pH 5.5	pH 6.0	pH 6.5
Nitrogen (N)	30%	43%	77%	89%	100%
Phosphorus (P)	23%	31%	48%	52%	100%
Potassium (K)	33%	52%	77%	100%	100%

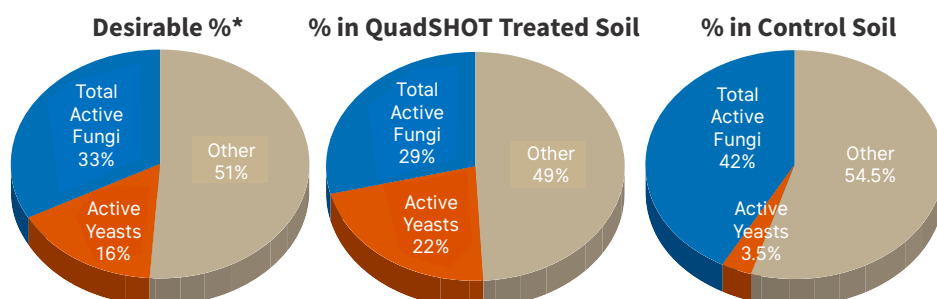
QuadSHOT® Trials – 14/15

As a part of SLTEC's commitment to R&D, we have initiated a range of bio efficiency trials in major Almond growing areas. Our aim is to ensure that we are not only delivering cost effective liquid fertilizer options; but also inputs and advice that assist you to improve and maintain the productivity and sustainability of your soil.

QuadSHOT® is a unique organic soil conditioner made from Kelp, Fish Emulsion, Molasses, and Humic acids. The ingredients of QuadSHOT® are combined with the aim of stimulating soil biology, improving soil health, nutrient cycling and the subsequent uptake of applied nutrients. Generally, organic/biological inputs will help to stimulate long term changes in nutrient uptake efficiency and

subsequent plant health and product quality, rather than simply providing immediate increases in crop yield. Therefore it is often a challenge to prove short term results arising from applications of these types of organic inputs.

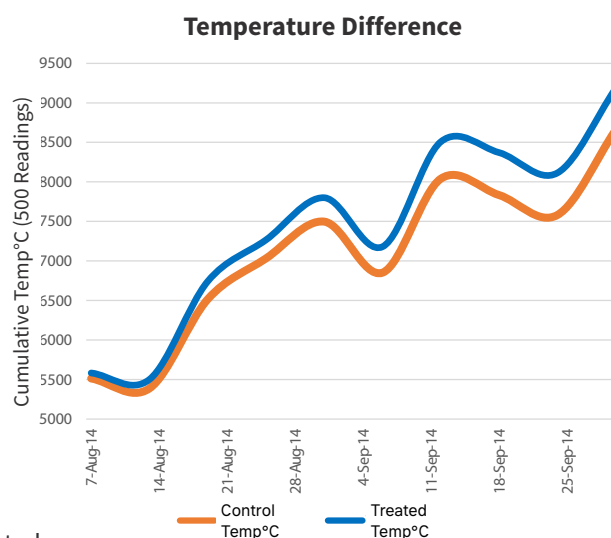
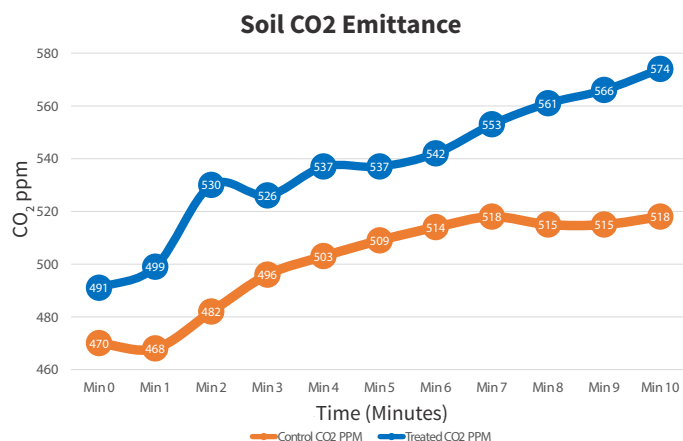
During SLTEC's recent trials (Robinvale VIC), QuadSHOT® fertigated at 30 L/ha has stimulated an increase in soil microbial activity in the Almond tree root zone. We were able to measure this as a function of emissions of soil CO₂ from the beginning of the growing season and importantly a consistently warmer soil in the QuadSHOT® treatments. This was an average of 0.7°C higher than the control over the 56 day testing period.



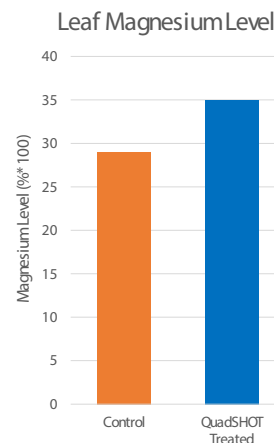
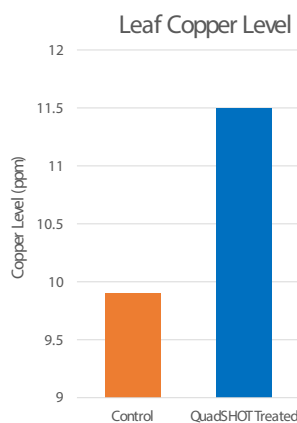
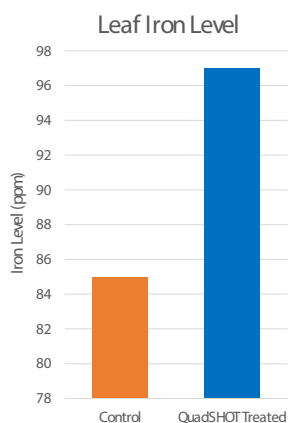
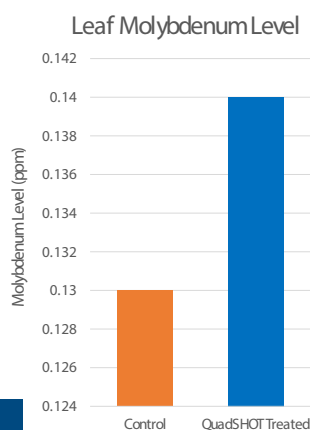
*Reference: Mikhail, E - SWEPT Pty Ltd Analytical Laboratories

During our trials, application of QuadSHOT® resulted in an increase of soil temperature consistent with a rise in soil microbial activity.

This effect on improved soil temperature in the rootzone during the early August flowering period is seen to be advantageous for early root development and nutrient uptake (Almond Board Fact Sheet 02, March 2008)



Tissue analysis of Almond leaves from the trial sites has also indicated improvement in many nutrient levels where QuadSHOT® has been applied.



Four Key Plant & Soil Microbial Stimulants Now Organically Certified

QuadSHOT®

QuadSHOT® contains a carefully selected range of organic additives and biological stimulants. These ingredients stimulate soil biological activity, thereby improving the cycling and availability of plant nutrients and soil fertility and health. Together with management practices that enhance organic matter and soil structure development, this product assists in mobilizing available nutrients and improving plant uptake efficiencies.

Humic acid – increases nutrient holding capacity of the soil

Kelp – enhances plant and root growth development

Fish Emulsion – stimulates nitrogen cycling

Molasses -promotes beneficial soil biology

Each of these stimulants are also available as individual products

Benefits of QuadSHOT®

- Improves saline and sodic soils
- Improves the moisture holding capacity of soils
- Enhances nutrient cycling and availability
- QuadSHOT® can be used to soften a range of foliar fertilizers, allowing higher use rates without the potential for phytotoxic burn* -
e.g. Nitro QUAD 3™ and UAS QUAD 3™
- QuadSHOT® is designed to aid in the soils mineralisation and nutrient availability. It also increases the plants uptake efficiency of essential minerals.
- Improves overall soil health and vitality.

Guaranteed Analysis

Fish Emulsion	8.0%
Kelp	8.0%
Molasses	8.0%
Humic Acid	6.6%
Fulvic Acid	0.3%
Nitrogen (N)	0.3%
Phosphorus (P)	0.1%
Potassium (K)	3.4%
Sulphur (S)	0.2%
Carbon (C)	5.2%
Calcium (Ca)	0.2%
Iron (Fe)	0.006%
Specific Gravity (Kg/L)	1.1 to 1.2
pH Range	10.0 - 11.0

Typical Application Rates

Foliar

1 to 5 L/ha
Broadacre use at least 100 L/ha water
Horticulture use 200 to 2,000 L/ha water

Fertigation

20 to 60 L/ha through sprinkler, traveller or drip systems

Pop-Up, At Planting, Directed Soil Spray

Banded with Seed: 4 to 7 L/ha
Banded to the Side: 5 to 15 L/ha
- with 10 to 100 L/ha of water

20 to 60 L/ha as a directed soil spray, prior to planting or banded under canopy, with 200 to 800 L/ha water

Dipping Rates

Tree Age	Young	Established
Fertigation	40 L/ha	80 L/ha
Pre-Plant Dip	10 - 30 L/ha (Per 100L Water)	

Contact:

T: 1800 768 224

E: enquiries@sltec.com.au

www.sltec.com.au



1800 768 224
enquiries@sltec.com.au

 @Sltecfert

2055 Finlay Road / PO Box 43,
TONGALA VICTORIA 3621

ABN: 632 340 733 78 ACN: 113 670269



Organisation



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