



FERTILIZERS



Nutrient Solutions



Wine Grape 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.

sltec.com.au

Why Choose SLTEC® Fertilizers?

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

Our Promise

Quality

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

Investment

SLTEC® Fertilizers will ensure that your fertiliser 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 Fertiliser?

- 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® Commitment to Quality

Can your fertiliser 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 fertiliser 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 fertiliser, 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.

Further information on our quality policy is available on our website.



Nutrient Budgeting

Understanding Crop Nutrient Removal

As part of SLTEC®'s Balanced Agronomy™ program we aim to assist growers to better understand crop nutrient removal and at which growth stages their crops peak demand for nutrients occurs.

Estimated Total Nutrient Elements Removed from the soil by Grapevines (kg / ha / year)												
N	P	K	S	Ca	Mg	Fe	Zn	Mn	Cu	B	Cl	Mo
100	18	85	15	115	20	650	150	120	88	115	235	0.6

White Reising at 4800 vines per ha, yielding 13 t/ha - Christiansen et al 1978 - from Bennett - Nutrient Deficiencies and toxicities of crop plants - 1993

Please consult your agronomist for specific information regarding your situation.

Suggested Optimum Nutrient Levels in Petioles

Grapevine Petiole Analysis Standards Sampled at Flowering					
Nutrient	Deficient	Marginal	Adequate	High	Toxic
Nitrogen (%)			0.8 - 1.1		
NO₃ - N (mg/kg)	< 340	340 - 499	500 - 1200	> 1200	
Phosphorus (%)	< 0.2	0.2 - 0.24	0.25 - 0.50	> 0.50	
Potassium (%)	< 1.0	1.0 - 1.7	1.8 - 3.0		
Calcium (%)			1.2 - 1.5		
Magnesium (%)	< 0.3	0.3 - 0.39	> 0.4		
Sodium (%)					> 0.5
Chloride (%)					> 1.0 - 1.5
Iron (mg/kg)			> 30		
Copper (mg/kg)	< 3.0	3.5 - 5.0	6.0 - 11		
Zinc (mg/kg)	< 15	16 - 25	> 26		
Manganese (mg/)	< 20	20 - 29	30 - 60		> 500
Boron (mg/kg)	< 25	26 - 34	35 - 70	71 - 100	> 100

From Robinson et al. (1997)

Plant tissue analysis

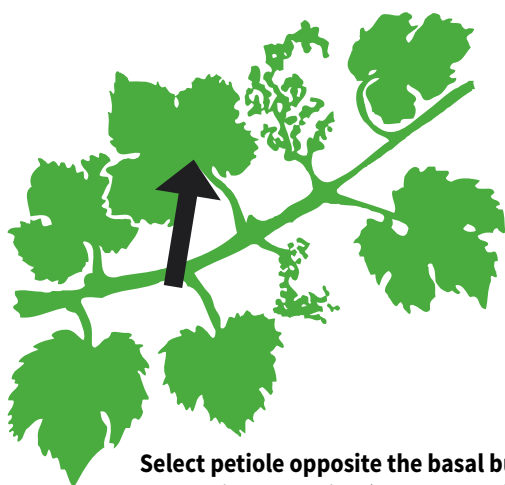
Plant tissue analysis provides an estimate of vine nutrient status which can reflect uptake from the soil. This makes plant tissue analysis a useful tool to quantify the nutrient status of vines, verify any suspected deficiencies/toxicities in the vines and for problem diagnosis.

The timing of sampling for tissue analysis

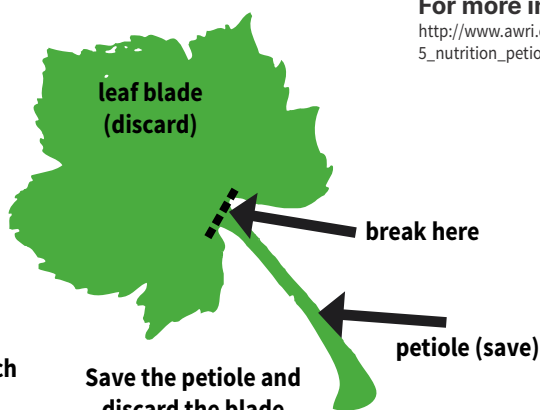
Samples for grapevine tissue analysis are usually taken on an annual basis because vines can generally integrate the nutrient supply for the whole season. A well defined phenological growth stage provides a means of standardising sampling time. Samples for petiole tissue analysis are usually taken at 80% flowering. For sampling later in the season, standards also exist for leaf blades sampled at veraison.

For more information see -

http://www.awri.com.au/wp-content/uploads/5_nutrition_petiole_analysis.pdf



Select petiole opposite the basal bunch during flowering (50% cap fall)



Save the petiole and discard the blade

Product Technical Information

Product Code	Name	N% (w/v)	P% (w/v)	K% (w/v)	S% (w/v)	Ca% (w/v)	Biological Stimulation	Chelating Agent	Specific Gravity (kg/L)	pH Range	Typical Application Rates	
											Fertigation	Foliar Use 200 to 2,000 L/ha water
SG0037	AquaLIME 38™	-	-	-	-	38.0	-	-	1.601	9.0 - 10.0	50 - 200 L/ha depending on soil pH	N/A
SG0017	BiologiCAL PLUS™ N as NO ₃ 0.3%, P as PO ₄ 0.1%, B 0.1%, C 12.5%, Fulvic Acid 0.009%, Fish Emulsion 0.3%, Humic Acid 0.2%, Kelp 0.3%, Molasses 41.8%	0.3	0.1	2.0	1.8	6.5	Y	Y	1.280	8.0 - 10.0	20 - 60 L/ha	4 - 20 L/ha
SNPK0074	CellCAL PLUS™ Cu 0.3%, B 0.1%	-	-	-	-	5.9	?	?	1.138	6.0 - 7.0	5 - 10 L/ha	?
SG0015	Bio Kelp Guardian™ Kelp 26.0% - Frost Protection	0.1	2.9	9.2	0.5	-	Y	Y	1.160	9.4 - 9.8	5 - 20 L/ha	2 - 10 L/ha
GG0072	Carbo K™ C 6.7%	-	-	43.8	-	-	-	-	1.545	13.0 - 14.9	10 - 80 L/ha	1 - 5 L/ha
GG0009	Baseline Plus™ N as urea 11.7%, P as PO ₄ 4.9%, Mg 0.2%, Mn 0.006%, Zn 0.01%, Cu 0.005%, Mo 0.005%, B 0.02%, Fe 0.01%, C 0.3%, 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	-	Y	Y	1.304	7.5 - 8.5	10 - 80 L/ha	2 - 15 L/ha
GG0022	Calcium Nitrate™ N as NO ₃ 13.0%	13.0	-	-	-	18.5	-	-	1.480	5.0 - 7.0	10 - 100 L/ha	5 - 10 L/ha
SNPK0069	PhosCal Plus™ P as PO ₄ 15.0%	-	15.0	-	-	4.5	?	?	1.305	< 1.0	?	?
GG0180	Spring Strength™ N as NH ₄ 5.5%, N as NO ₃ 11.3%, N as urea 11.1%, Mg 0.4%, Mn 0.2%, Zn 0.5%, Cu 0.1%, B 0.09%	27.9	-	-	-	7.0	-	-	1.399	3.0 - 4.0	10 - 60 L/ha	5 - 10 L/ha
SS9001	SS 11:16:0™ N as NH ₄ 11.3%, P as PO ₄ 16.0%	11.3	16.0	-	-	-	-	Y	1.297	6.0 - 7.0	20 - 100 L/ha	2 - 10 L/ha
GG0095	Vine Recharge™ N as NH ₄ 1.7%, N as NO ₃ 4.9%, P as PO ₄ 1.4%, Mg 0.3%	6.6	1.4	5.8	-	1.3	-	-	1.197	< 1.0	10 - 200 L/ha	1 - 5 L/ha
SNPK0046	TE 8 PLUS™ N as NO ₃ 2.6%, Mg 2.4%, Mn 3.2%, Zn 3.2%, Cu 0.5%, Mo 0.02%, B 0.2%, Fe 0.7%, Fulvic Acid 0.5%	2.6	-	0.1	4.2	-	Y	Y	1.295	1.0 - 2.0	10 - 25 L/ha	2 - 10 L/ha

Growth Timeline













Legend

Fertigation

Foliar



EL 1	EL 4 - 18
Dormancy Lime, Dolomite or Gypsum applications based on soil test results	Budburst to the Start of Flowering

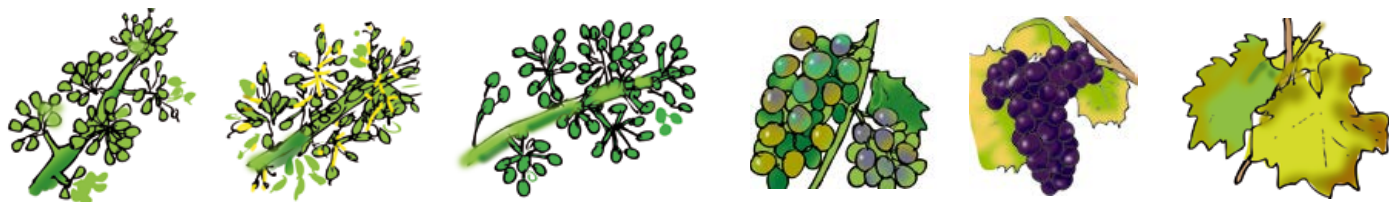
Product Code	Name	Key SLTEC® Vineyard products - see page 6 for technical details		
SG0037	AquaLIME 38™	Liquid lime for pH improvement. 		
SG0017	BiologiCAL® PLUS	No Nitrogen form of plant available calcium with stimulants		
SNPK0074	CellCAL PLUS	Formulated to improve calcium uptake and skin quality in both apples and cherries		
SG0042	Kelp Boost™	3 to 4 L/ha every 10 to 12 days or 48 hours before or after frost event to aid recovery		
GG0072	Carbo K™	High analysis potassium with antifungal properties		
GG0009	Baseline Plus™	12-5-14 plus an additional 8 nutrients & 5 biostimulants		
SNPK0069	PhosCal Plus™	High analysis phosphorus and calcium liquid designed to enhance quality (firmness and colour) in pome and stone fruit and other horticultural crops.		
GG0180	Spring Strength™	Spring Strength - ensure your canes are strong		
SS9001	SS 11:16:0™	Highly plant available phosphorus for root growth flush		
GG0095	Vine Recharge™	All in one post harvest nutrient solution		
SNPK0046	TE 8 PLUS™	8 micronutrients to ensure balanced vine growth		

Replacement values per hectare are usually in the order of 2 to 3 times greater after taking into account tree canopy / root growth, losses and returns in prunings / fallen leaves, nutrient tie up, mineralization and leeching losses, depending on soil type, background nutrient status and growing environment.

Table 1 - Nutrient Removal Estimates

	Nutrient Removal kg/t of Fruit	Tonnes of fruit removed per ha	Total Nutrients Removed kg/ha	Bud Burst to Start of Flowering	
				% Crop Demand	kg/ha
N	1.5	10	15	14%	2.1
P	0.4	10	4	16%	0.6
K	3	10	30	15%	4.5
Ca	0.4	10	4	10%	0.4
Mg	0.1	10	1	10%	0.1

Wine Grape Crop demand adapted from Conradie (1980) and Conradie (1981).



	EL 19-26	EL 27-33	EL 34 - 40	EL 40-47
	Flowering Period (Petiole Sampling)	End of Flowering to Veraison	Veraison to Harvest	Post Harvest to Leaf Fall

Suggested application timings and methods

Flowing Period		End of Flowering to Veraison		Veraison to Harvest		Post Harvest to Leaf Fall	
% Crop Demand	kg/ha	% Crop Demand	kg/ha	% Crop Demand	kg/ha	% Crop Demand	kg/ha
14%	2.1	38%	5.7	-	-	34%	5.1
16%	0.6	40%	1.6	-	-	28%	1.1
11%	3.3	50%	15.0	9%	2.7	15%	4.5
14%	0.6	46%	1.8	8%	0.3	22%	0.9
12%	0.1	43%	0.4	13%	0.1	22%	0.2

Nutrient removal figures in kg/ t are world wide averages from SLTEC® database.

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 magnesian 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

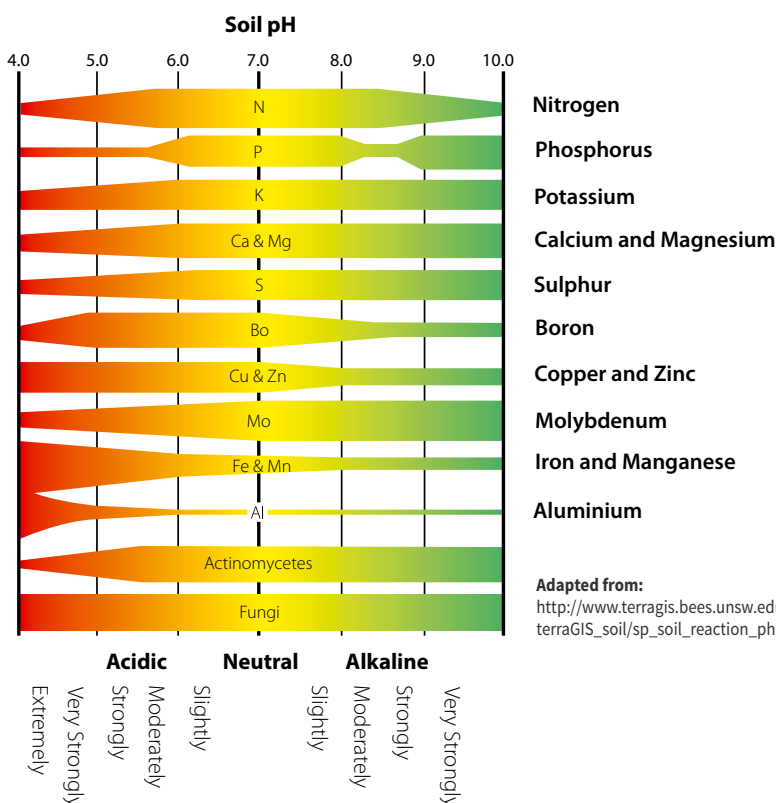
Typical Cation Exchange Values for Various Soil Textures (preferred level >10 meq/100g)

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 Vineyards

Optimum pH Range	
Upper	6.8 to 7.5
Optimum	6.0 to 6.5
Lower	5.5 to 5.8



Adapted from:
http://www.terragis.bees.unsw.edu.au/terraGIS_soil/sp_soil_reaction_ph.html

Soil Health

Inputs that Assist to Stimulate Soil Biology

Kelp Extracts - Bio Kelp Range, QuadSHOT®

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 fertilisers 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 activity of photosynthetic bacteria and actinomycetes which can help provide protection against soil-borne pathogens.

Fish Emulsions - Fish Emulsion, QuadSHOT®

Fish emulsions are a source of readily available organic bitrogen and can be especially useful when this is needed to improve the carbon-bitrogen 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 bitrogen cycling and so also a somewhat reduced requirement for bitrogen 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 bitrogen. Higher rates (10 L/ha) appear to promote photosynthetic bacteria and actinomycetes and suppress lactic acid bacteria.

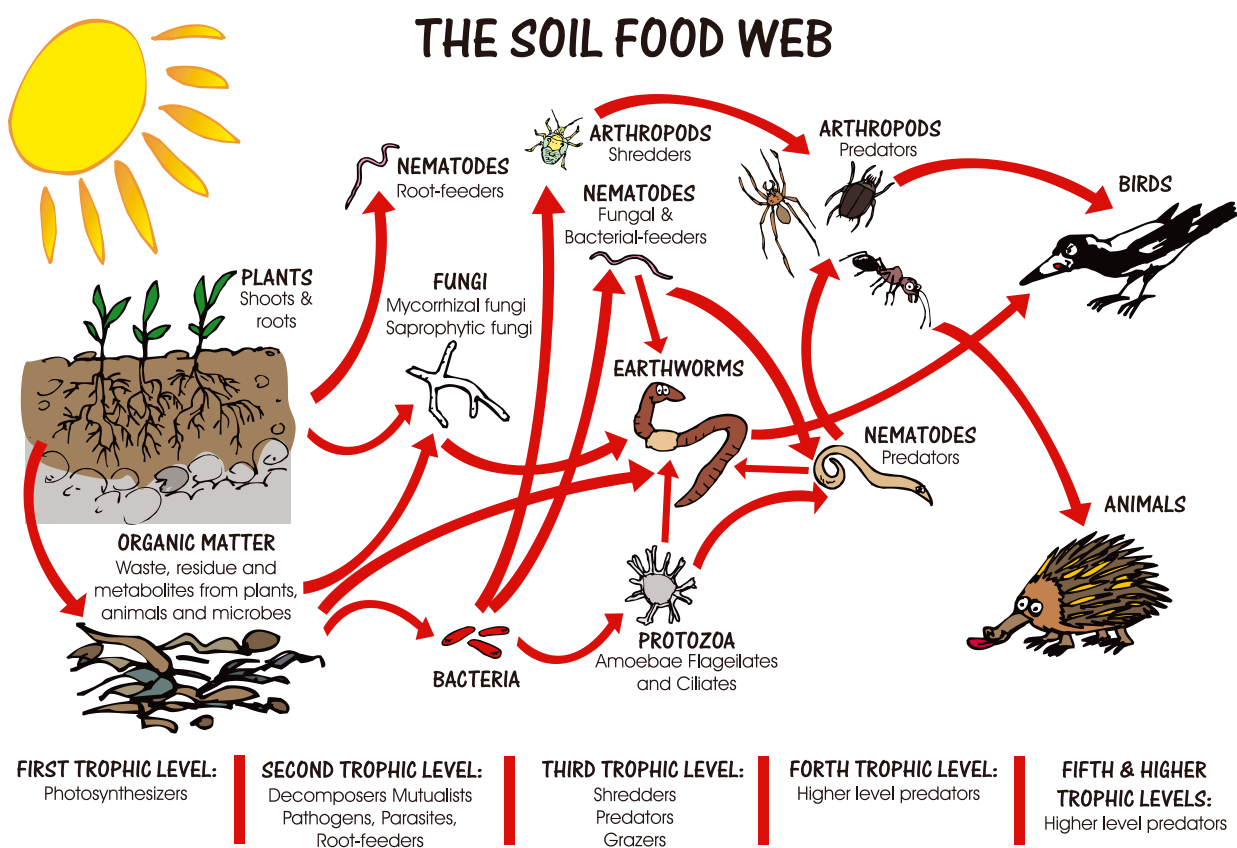
Humates - Humic K 26™, QuadSHOT®

Humates are soil conditioners with high carbon content. They are useful materials where adjustment of the carbon-nitrogen 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 - BiologiCAL® PLUS, QuadSHOT®

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.

Adapted from - Mikhail, E - "Understanding & Achieving Optimum Soil Balance - The Mikhail System" - 2009



Nutrient Deficiencies

Nitrogen⁵

Deficiency Symptoms

Typical N deficiency symptoms are a general chlorosis of the older leaves on a plant along with slower growth and generally smaller plants. Some plants have more specific visual symptoms.



Phosphorous⁶

Deficiency Symptoms

The typical visual symptoms of P deficiency exhibited by most plants include

- Stunted growth
- Dull-green or blue-green color
- Possible purple coloration on some part of the plant
- Reduced flowering and/or seed production
- Delayed maturity



Potassium⁷

Deficiency Symptoms

The typical signs of potassium deficiency is marginal chlorosis of older plant leaves. However, yield losses typically occur before these symptoms are visible. For example, a crop with insufficient K is likely to wilt sooner in a dry spell. Also, insufficient K could express itself by causing the plants to suffer from more severe disease problems. It might also show as a fruit crop that doesn't quite develop the proper quality or flavor.



Zinc⁸

Deficiency Symptoms

Develops first in young leaves, which begin to show chlorosis between veins as well as necrotic spots. Left untreated zinc deficiency can stunt growth and result in smaller leaves and a widened petiolar sinus.



5 Nitrogen Deficiency (2018) Grapevine Nutrient Deficiencies. Dracaena Wines. Available at: <https://dracaenawines.com/grapevine-nutrient-deficiencies/> (Accessed: January 16, 2023).

6 Phosphorous Deficiency (2018) Grapevine Nutrient Deficiencies. Dracaena Wines. Available at: <https://dracaenawines.com/grapevine-nutrient-deficiencies/> (Accessed: January 16, 2023).

7 Potassium Deficiency (2018) Grapevine Nutrient Deficiencies. Dracaena Wines. Available at: <https://dracaenawines.com/grapevine-nutrient-deficiencies/> (Accessed: January 16, 2023).

8 Bulatovic-Danilovich, M. (2021, December 1). Fertilizing grapes. Available at: <https://extension.wvu.edu/agriculture/horticulture/fertilizing-grapes> (Accessed: January 16, 2023).

Nutrient Deficiencies

Boron¹

Deficiency Symptoms

Symptoms vary between crop species, but generally occur in the growing points or flower and fruiting parts of the plant. Young leaves will often show a general chlorosis.



Iron²

Deficiency Symptoms

Interveinal chlorosis of young leaves. Severe deficiencies may progressively affect the entire plant turning the leaves from yellow to bleached-white.



Magnesium³

Deficiency Symptoms

The classic deficiency symptom is interveinal chlorosis of the lower/older leaves. However, the first symptom is generally a more pale green color that may be more pronounced in the lower/older leaves. In some plants, the leaf margins will curve upward or turn a red-brown to purple in color. Full season symptoms include preharvest leaf drop, weakened stalks, and long branched roots.



Manganese⁴

Deficiency Symptoms

Because Mn is not translocated in the plant, deficiency symptoms appear first on younger leaves. The most common symptoms on most plants are interveinal chlorosis. Sometimes a series of brownish-black specks appear in the affected areas. In small grains, grayish areas appear near the base of younger leaves. Manganese deficiencies occur most often on soils with a high pH and/or naturally low Mn content.



1 Boron Deficiency (2018) Grapevine Nutrient Deficiencies. Dracaena Wines. Available at: <https://dracaenawines.com/grapevine-nutrient-deficiencies/> (Accessed: January 16, 2023).

2 Bulatovic-Danilovich, M. (2021) Iron Deficiency, Fertilizing Grapes. Available at: <https://extension.wvu.edu/agriculture/horticulture/fertilizing-grapes> (Accessed: January 16, 2023).

3 Grant, S. (2020) Magnesium Deficiency, Foliar Symptoms Of Mineral Nutrient Problems. Available at: <https://www.lodigrowers.com/foliar-symptoms-of-mineral-nutrient-problems/> (Accessed: January 16, 2023).

4 Grant, S. (2020) Manganese Deficiency, Foliar Symptoms Of Mineral Nutrient Problems. Available at: <https://www.lodigrowers.com/foliar-symptoms-of-mineral-nutrient-problems/> (Accessed: January 16, 2023).



A Multitrace Solution to Maximize Crop Potential

TE 8 PLUS™

Product Code: SNPK0046

A foliar multi-trace element blend activated with fulvic acid (0.5%) to maximise uptake at lower rates than standard trace blends across a wide range of crops.

Benefits of TE 8 PLUS™

- A focus on magnesium, manganese, zinc and copper – the key drivers of photosynthesis and healthy leaves and plants; resulting in reduced disease pressure.
- Molybdenum and boron to enhance assimilation and transport in the plant.
- Fully soluble nutrients in plant available forms.
- Fulvic acid provides an efficient chelating agent with only small amounts required to benefit plant permeability to a range of nutrients.
- TE 8 PLUS™ is physically compatible with a wide range of herbicides, insecticides and fungicides. Please contact SLTEC® for more information.
- TE 8 PLUS™ will help ensure you utilise all your fertilizer inputs as the trace elements work in synergy with your macro applications.

TE 8 PLUS™ is versatile across a range of crops from broadacre cereals and vegetables to pre-bloom and post harvest application in vineyards and orchards where it is often combined with SLTEC® Nitro QUAD 3™ or Lo Biuret Urea to improve bud nutrient levels to drive early spring growth.

Guaranteed Analysis (w/v)

Potassium (K)	0.1%
Sulphur (S)	7.2%
Magnesium (Mg)	2.4%
Manganese (Mn)	3.2%
Zinc (Zn)	3.2%
Copper (Cu)	0.5%
Molybdenum (Mo)	0.02%
Boron (B)	0.2%
Iron (Fe)	0.7%
Fulvic Acid	0.5%
Specific Gravity	1.284 kg/L
pH Range	1.0 - 2.0

Typical Application Rates

Foliar

2 - 10 L/ha

Horticulture use 200 to 2,000 L/ha water

Broadacre use at least 100 L/ha water

Fertigation

10 - 25 L/ha



At Last! A Complete Fluid Nutrient Solution



Baseline Plus™

Product Code: GG0009

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.

Guaranteed Analysis (w/v)

Nitrogen (N)	11.7%
N as urea	11.7%
Phosphorus (P)	4.9%
P as PO ₄	4.9%
Potassium (K)	13.6%
Sulphur (S)	2.0%
Magnesium (Mg)	0.2%
Manganese (Mn)	0.006%
Zinc (Zn)	0.01%
Copper (Cu)	0.005%
Molybdenum (Mo)	0.005%
Boron (B)	0.02%
Iron (Fe)	0.01%
Fulvic Acid	0.01%
Humic Acid	0.3%
Fish Hydrolysate	0.4%
Kelp	0.4%
Molasses	0.4%
Specific Gravity	1.304 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



Highly Available, Activated Calcium + Organic Boost



BiologiCAL® PLUS

Product Code: SG0017

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 clubroot
- 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 the 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 (w/v)

Nitrogen (N)	0.3%
N as nitrate	0.3%
Phosphorus (P)	0.1%
Potassium (K)	2.0%
Sulphur (S)	1.8%
Calcium (Ca)	6.5%
Boron (B)	0.1%
Fulvic Acid	0.3%
Fish Hydrolysate	0.3%
Kelp	1.0%
Molasses	20.0%
Carbon (C)	6.1%
Specific Gravity	1.177 kg/L
pH Range	6.0 - 8.0

Typical Application Rates

Foliar:

Broadacre: 1 to 40 L/ha
with at least 100 L/ha
Horticulture: 1 to 20 L/ha
with 200 - 2,000 L/ha

Fertigation:

20 to 60 L/ha

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 with 50 to 100 L/ha water



Maximise Fruit Quality



PhosCal Plus™

Product Code: SNPK0069

PhosCal Plus is a high analysis phosphorus and calcium liquid designed to enhance quality (firmness and colour) in pome and stone fruit and other horticultural crops.

Benefits of PhosCal Plus

- Soluble nutrients with rapid plant uptake
- Available in pack sizes 20L to 1,000L
- Compatible with **CellCAL PLUS™** and **Cal 1750™** at normal water volumes to allow convenient addition of calcium to the spray program to further enhance fruit firmness.
- 100% Australian made

Guaranteed Analysis (w/v)

Phosphorus (P)	15.0%
Calcium (Ca)	4.5%
Specific Gravity	1.305 kg/L
pH	< 1.0

Typical Application Rates

Orchards:

5 to 10 L/ha with 1,000 to 2,000 L/ha water or 500 mL/100 L based on canopy volume.

Tree Fruits:

Apply 2 to 3 sprays of PhosCal PLUS at 7-10 day intervals from petal fall to the end of rapid cell division. Apply again at approximately 4-5 weeks and 2 weeks before anticipated harvest.

This product can be applied with SLTEC®'s Cal 1750™.



Contact:

T: 1800 768 224

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www.sltec.com.au

Improve Fruit Firmness and Skin Strength



CellCAL PLUS™

with Calcium Acetate Product Code: SNPK0074

CellCAL PLUS™ has been formulated with the support of industry leaders. CellCAL PLUS™ can improve calcium levels in crops such as;

- Apples
- Citrus
- Table grapes
- Cherries
- Almonds

The three nutrients in CellCAL PLUS™ (calcium, copper & boron) work in a symbiotic relationship assisting in the overall health and strength of the cell walls within the fruit which produces fruit firmness and skin strength.

Both boron and copper are important during rapid fruit growth in cherries to assist in calcium uptake into cell walls and to reduce the occurrence of splitting.

Please also consider using CellCAL PLUS™ in combination with either;

PhosCAL PLUS™

Designed to enhance firmness and colour in pome and stone fruit.

15.0% Phosphorus, 4.1% Calcium

Apply at 5 - 10 L/ha at 7 - 10 day intervals from early fruit set. For colour enhancement in Apples apply 2 - 3 sprays beginning at early pigment development and running up to 2-3 weeks before anticipated harvest.

FirmBright P™

Designed to drive rapid cell growth sugar production and colour.

19.2% Phosphorus, 6.1% Potassium, 6.1% Magnesium

Suggested application rates for Apples and Stone fruit are 5 - 10 L/ha for two to four sprays from early fruit set at 7 to 14 day intervals.

Both are compatible with CellCAL PLUS with a minimum of 500L of water

Guaranteed Analysis (w/v)

Calcium (Ca)	5.9%
Copper (Cu)	0.3%
Boron (B)	0.1%
Specific Gravity	1.138 kg/L
pH Range	6.0 - 7.0

Typical Application Rates

Foliar

5 to 10 L/ha

Horticulture use 200 to 2,000 L/ha water

For crop specific rates, please contact your SLTEC® representative



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Utilise the benefits of kelp and Nature's K™



Kelp Boost™

North Atlantic - Ascophyllum nodosum - Seaweed Extract

Product Code: SG0042

Kelp Boost™ is a formulation of North Atlantic Kelp (*Ascophyllum nodosum*) & Nature's K™ – the combination of these two products work synergistically to increase the crop's natural stress responses – resulting in a healthier crop and more significant gains for growers. Kelp Boost™ contains a wide range of beneficial plant metabolites (including polysaccharides, osmoprotectants, amino acids, fulvic acids, polyphenolic compounds, betaines, polyamines, and hormones) which are proven to upregulate and boost natural plant biosynthetic pathways. Kelp Boost™ has increased potassium, which is vital for plant survival under stress conditions and is involved in several biochemical and physiological processes, including water movement regulation.

Benefits of *Ascophyllum nodosum* seaweed extracts;

- increase nutrient uptake & yield.
- increase shelf life of fruit and cut flowers.
- increase frost tolerance.
- increase high temperature tolerance.
- decrease water stress, due both to drought and salinity.
- increase chlorophyll production.
- repair the photosynthetic system.
- decrease accumulation of harmful reactive oxygen species.
- increase resistance to fungal & sucking insect attack.
- increase rachis stretch (grapes).
- increase fruit set.
- decrease crop stress associated with fungicide applications.
- enhance germination.

Guaranteed Analysis (w/v)

Kelp	10.0%
Nitrogen (N)	0.4%
Phosphorus (P)	0.7%
Potassium (K)	6.4%
Sulphur (S)	0.6%
Carbon (C)	2.3%
Fulvic Acid	1.1%
Amino Acids	1.4%
Specific Gravity	1.123 kg/L
pH	9.0 - 11.0

Also contains;

Beneficial organisms:

- Fungi - such as cellulose utilisers
- Yeasts
- Actinomycetes
- Photosynthetic bacteria
- Lactic acid bacteria

Application Rates

Fertigation

5 to 20 L/ha

Foliar

4 to 10 L/ha

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



Ensure Your Canes Are Strong



Spring Strength™

Product Code: GG0180

A formulation of nitrogen and calcium (at 4 : 1) with the addition of 5 trace elements to encourage robust, healthy wood and canes.

Benefits of Spring Strength

Spring Strength has been formulated through consultation with Horticultural Industry Consultants with the intent to create a product with a balance between nitrogen and calcium (4:1) to develop strong cells and desired internode spacings. With the addition of five highly plant available trace elements to reduce the effects of any limiting nutrients.

Guaranteed Analysis

Nitrogen (N)	27.9%
N as nitrate	11.3%
N as ammonium	5.5%
N as urea	11.1%
Calcium (Ca)	7.0%
Magnesium (Mg)	0.4%
Manganese (Mn)	0.2%
Zinc (Zn)	0.5%
Copper (Cu)	0.1%
Boron (B)	0.09%
Specific Gravity	1.399 kg/L
pH	3.0 - 4.0

Typical Application Rates

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 60 L/ha

Directed Soil Spray:

50 to 110 L/ha as a directed soil spray, with 50 to 100 L/ha water, or irrigated in after application (depending on crop).

Contact:

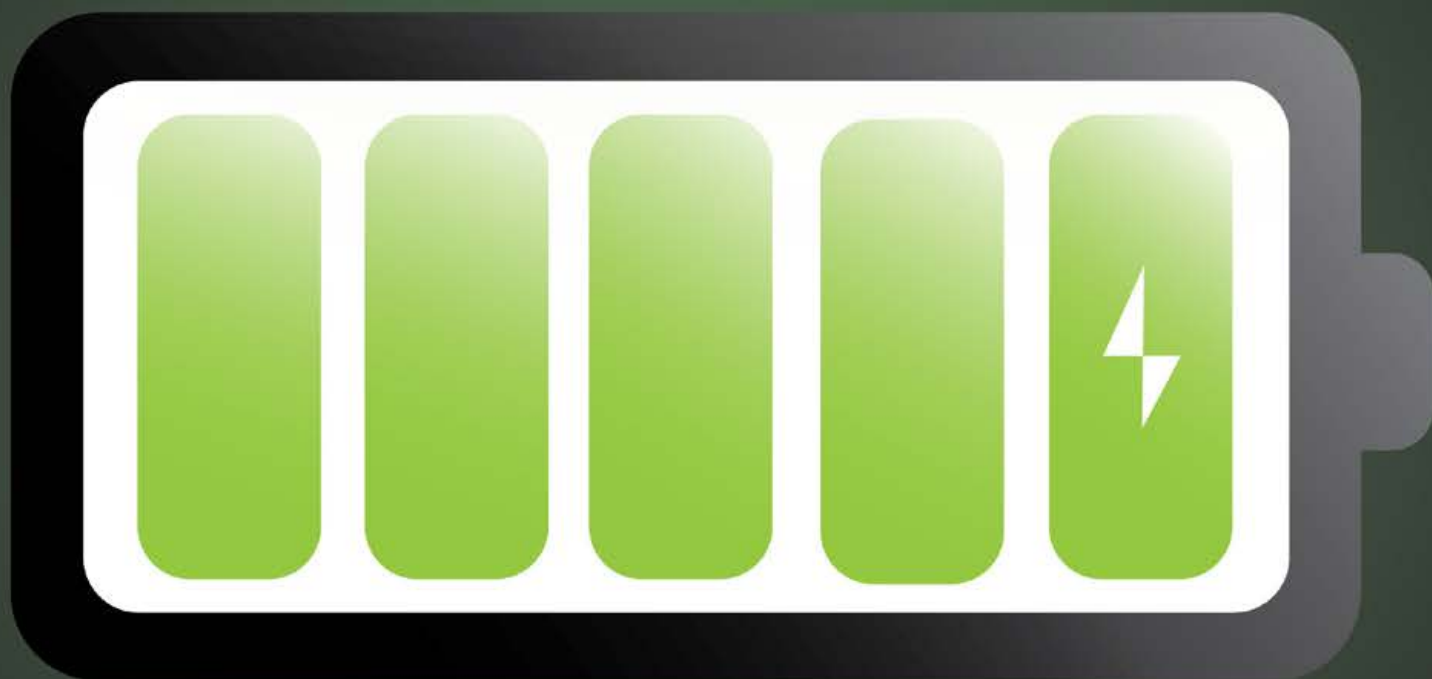
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START YOUR SEASON WITH A FULL CHARGE



Vine RECHARGE

**WHEN YOUR
BATTERY IS
FLAT YOU
RECHARGE IT...**

**WHY NOT DO THE SAME
FOR YOUR VINES?**

Formulated specifically for wine and table grapes to recharge nutrients and carbohydrates depleted after a growing season. To be applied to the vineyard as soon as possible after harvesting.





All-in-One Post Harvest Fertigation Solution

Vine Recharge™

Product Code: GG0095

Approximately 30% of the annual nitrogen and phosphorus, 20% of the calcium and magnesium and 15% of the potassium requirements come from stored reserves taken up after harvest.

Vine Recharge™ is specifically formulated by SLTEC®'s research and development team for grape vine post-harvest fertigation applications. Vine Recharge™ is a blend of five nutrients in the ratios the vine requires; providing the convenience of all your major nutrient requirements in one blend.

The following table displays the required application rate of Vine Recharge™ in relation to the amount of t/ha of crop removed.

Simply apply Vine Recharge™ at 8 L/ha for every 1 t/ha of crop that you have removed to supply the required nutrients.

t/ha	1	5	10	15	20
L/ha	8	40	80	120	160

Guaranteed Analysis (w/v)

Nitrogen (N)	6.6%
N as nitrate	4.9%
N as ammonium	1.7%
Phosphorus (P)	1.4%
P as PO ₄	1.4%
Potassium (K)	5.8%
Calcium (Ca)	1.3%
Magnesium (Mg)	0.3%
Specific Gravity	1.197 kg/L
pH Range	< 1.0

Typical Application Rates

Fertigation:

10 to 200 L/ha

Crop Removal & Demand

	Nutrient Removal kg/t fruit	Tonnes of fruit removed / ha	Total Nutrients Removed kg/ha	Post Harvest to Leaf Fall	
				% Crop Demand	kg/ha
Nitrogen	1.5	10	15	34%	5.1
Phosphorus	0.4	10	4	28%	1.1
Potassium	3.0	10	30	15%	4.5
Calcium	0.4	10	4	22%	0.9
Magnesium	0.1	10	1	22%	0.2

Wine Grape Crop demand adapted from Conradie (1980) and Conradie (1981). Nutrient removal figures in kg/ t are world wide averages from SLTEC® database.

Barney Toohey at Kennedy Vineyard 27 hectares - Heathcote region

'For the past two years we have been using Vine Recharge™ post-harvest and have been impressed with the even bud-burst across the vineyard and the early spring growth the next year. This has led to more even yields across the vineyard while maintaining quality.'



Nutrient and carbohydrate reserves for grape vines are essential for vine health and performance for the following year.

Post-harvest nutrient application increases the stored nutrient status of vines, reducing potential deficiencies from bud break up to the end of flowering.

Irrigation

It is imperative that vines receive adequate water post-harvest to maximize their carbohydrate storage and nutrient uptake for the following season.

It is critical that remaining irrigations are carefully managed to maintain a functional canopy for three to four weeks after harvest.

It is important that both topsoil and subsoil moisture is maintained over the winter period as dormant plants still use water.

Remember to ensure soils don't become too dry as roots and soil biology will be negatively affected, leading to reduced nutrient uptake in spring. To improve soil biology and subsequent nutrient cycling over the dormant period please consider QuadSHOT® - providing a valuable blend of microbial food sources and root zone stimulants.

Nitrogen (N)

Nitrogen applications post-harvest play a large role in the available nitrogen for the coming season; safeguarding a strong and even bud burst and aiding in the early spring flush of growth.

Phosphorus (P)

Phosphorus is critical for root development and has a direct effect on yield and quality. The application of phosphorus increases the beneficial translocation of other nutrients, such as magnesium from the roots to the shoots.

Potassium (K)

Potassium is involved in the active translocation of sugars from the leaf to the fruit and therefore plays an important role in fruit quality, size and yield. Potassium is also involved in the osmotic potential of cells as well as the turgor of the guard cells that open and close stomata. Good potassium levels in early spring can help to safe-guard buds and new growth from frost damage.

Calcium (Ca)

Calcium is a key component of cell walls, maintaining membrane structure and nutrient uptake. It has a significant role in fruit quality, colour and aroma.

Using BiologiCAL PLUS®, a plant-available calcium source containing microbial stimulants already in solution, will increase calcium levels in the soil under the dripper where the majority of the root structure lies.

Magnesium (Mg)

Magnesium is an essential component of chlorophyll and is needed for many processes including the transfer of energy, protein synthesis and cell structure.

After harvest, vines accumulate a significant amount of magnesium, which is then stored in the roots, shoots and woody components of the trunk. Magnesium accumulation continues until leaf fall with most being stored in the roots and leaves.





Compatibility Request

FERTILIZERS

SLTEC® will help you make better fertiliser decisions with a simple Compatibility Test.

When mixing fertiliser, it is important to check fertiliser compatibility. As incompatible fertiliser can not only jeopardise your crops but also your equipment.

Test can be conducted between:

SLTEC® products

SLTEC® products and agricultural chemicals

Many SLTEC® products feature high compatibility, allowing for multiple products to be applied in one pass.

Let SLTEC® take the guess work out of fertiliser blends.

Simply scan the QR Code to request your compatibility test today.



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Please contact SLTEC® for details of your closest dealer

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