



FERTILIZERS

*Quality Ingredients
Australian Made
Family Owned*

Nutrient Solutions

Lucerne Nutritional Guide

Crop nutrient budgeting is critical to improve production efficiency and to reduce environmental impacts. SLTEC®'s range of quality fluid fertilisers and microbial stimulants are supported by our comprehensive in-field agronomy service.

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.



Crop Nutritional Information

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".

Total crop removal for lucerne is outlined in the table below. Notably, the nitrogen removal from the soil is zero. If a lucerne crop is growing at optimal, it should produce enough nitrogen via the nitrogen fixation bacteria that are present on the root system.

The actual nitrogen that can leave the paddock in the hay can be as high as 20 - 30 kg per ton.

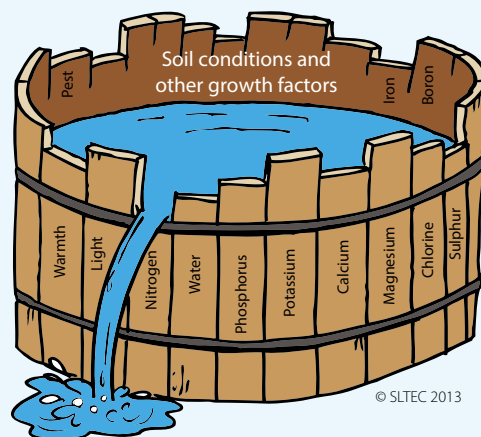


Table 1. Nutrient removal (kg) for hay from a 10 and 20 ton crop (14% moisture)

	N	P	K	S	Ca	Mg	Mn	Zn	Cu	Mo	B	Fe
10t hay crop / ha (9 t/ha dry matter)	250	28	221	28	138	28	0.6	0.2	0.5	0.009	0.4	1.5
20t hay crop / ha (18 t/ha dry matter)	500	56	442	56	276	56	1.2	0.4	1	0.018	0.8	3

Crop removal data - Adapted from the Pioneer NZ lucerne growing guide.

A good second year or older lucerne stand should yield close to 20 t/ha hay or 18 t/ha dry matter in a season.

If it's a first year stand, it would be expected that the yield is half of that of the above.



Product Technical Information

Product Code	Name	N% (w/v)	P% (w/v)	K% (w/v)	S% (w/v)	Ca% (w/v)	Specific Gravity (kg/L)	pH Range	Typical Application Rates		
									Fertigation	Directed Soil Spray	Foliar Use at least 100 L/ha water
GG0198	Lucerne Boost™ N as NH ₄ 0.1%, P as PO ₄ 1.2%, Zn 0.3%, Cu 0.1%, Mo 0.1%, B 0.3%, Co 0.004%, Amino Acids 2.5%, Fulvic Acid 1.9%	0.9	1.2	9.0	0.9	-	1.168	7.0 - 10.0	20 - 100 L/ha	20 - 200 L/ha	20 - 40 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	-	1.295	1.0 - 2.0	10 - 25 L/ha	20 - 30 L/ha	2 - 10 L/ha
SNPK0053	MoBo Complex™ Mo 0.3%, B 14.7%	6.0	-	-	-	-	1.387	7.0 - 8.0	5 - 10 L/ha	2 - 5 L/ha	1 - 3 L/ha
SG0031	BiologiCAL PLUS TE™ N as NO ₃ 0.8%, P as PO ₄ 0.1%, Mn 0.5%, Zn 1.0%, Cu 0.3%, B 0.1%, C 11.4%, Fulvic Acid 0.008%, Fish Emulsion 0.2%, Humic Acid 0.2%, Kelp 0.2%, Molasses 38.0%	1.1	0.1	1.8	1.7	5.9	1.295	6.5 - 7.5	20 - 60 L/ha	20 - 200 L/ha	20 - 50 L/ha
SNPK0054	Mo 250P™ P as PO ₄ 11.0%, Mo 25.0%	-	11.0	-	-	-	1.578	3.5 - 4.5	-	100 - 500 mL/ha	40 - 150 mL/ha
SNPK0092	Moly-Balt™ P as PO ₄ 9.9%, Mo 22.5%, Co 0.8%	-	9.9	-	0.4	-	1.541	3.5 - 4.5	-	100 - 500 mL/ha	40 - 150 mL/ha
GG0182	Nature's K 10™ P as PO ₄ 1.5%, C 0.6%, Amino Acids 2.8%, Fulvic Acid 2.1%	0.6	1.8	10.0	2.6	-	1.160	8.5 - 10.0	40 - 300 L/ha	Up to 300 L/ha	5 - 10 L/ha

Rev Up Your Rhizobia

Moly-Balt™

SLTEC® Moly-Balt™ contains a balance of molybdenum and cobalt, which are essential for nitrogen fixation of rhizobia on pulse crops. Without ample supply of cobalt and molybdenum, your crop's root rhizobia may not function correctly and hence lose yield.

Benefits of Moly-Balt™

- A blend of two essential nutrients required for optimal nitrogen-fixing bacteria to function.
- Readily crop available nutrients that can be seed, foliar, or soil-applied.
- Compatible with a wide range of common ag chemicals, allowing for tank mixing and co-applying in a single pass.

Typical Application Rates

Seed Dressing:

2 - 4 L/t

Foliar:

40 - 100 mL/ha as required

Guaranteed Analysis (w/v %)

Molybdenum (Mo)	22.5%
Cobalt (Co)	0.8%
Phosphorus (P)	9.9%
Sulphur (S)	0.4%
Specific Gravity	1.541 kg/L
pH Range	3.5 - 4.5

SLTEC® Lucerne Program

Year One

Year Two and Onwards

	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Soil test																												
Apply soil conditioners and base fert based on soil test																												
Apply weed control / insect control as required																												
Sow lucerne seed																												
Monitor establishment (treat with herbicides and insecticides as required)																												
First Cut (silage)																												
Apply SLTEC® Lucerne Boost™ 20 L/ha - refer to notes																												
Second Cut (40-45 days after first)																												
Tissue Test Just prior to the third cut																												
Third Cut (35 - 40 days)																												
Apply fert based on tissue test																												
Fourth Cut (30 - 35 days)																												
Fifth Cut (30 - 35 days)																												
Sixth Cut (30 - 40 days)																												
Herbicide as required																												

Product	Description	Application Method	Crop Stages						
			Pre-plant	Seedling	Bulking-up	Early Flower	Post Cut / Grazing (re-growth from crown)	Bulking Up	Early Flowering
Soil amendments	Soil amendments as per soil test (Lime / Gypsum)	Incorporated prior to sowing / broadcasts if after establishment	Lime / gypsum etc.						
Other	Custom MOP / DAP/ SSP blends based on soil tests	Broadcast / pre-sowing							
Soil testing	Analytical soil test	Soil testing	Always test prior to sowing a crop	At least once a year at most commonly during winter.					
Tissue testing	Analytical tissue test	Tissue testing				Early flower early in the growing season (Sept / October) again mid-way during the season (January)			
Liquid Fertilisers									
Lucerne Boost™	Lucerne specific product	Foliar			20 L/ha - applied to new growth. Best results when applied to every second cutting or grazing event. Up to four applications per season.				
TE 8 PLUS™	Full spectrum of essential trace elements	Foliar			10 L/ha - applied to new growth. Best results when applied to every second cutting or grazing event. Up to four applications per season.				
MoBo Complex™	High loaded boron with moly	Foliar			As per tissue testing.				
BiologiCAL® PLUS TE	Plant available calcium and traces	Foliar			up to 20 L/ha as required. Highly recommended in sodic soil or where sodic bore water is used.				
BiologiCAL® PLUS TE		Fertigation			up to 200 L/ha as required. Highly recommended in sodic soil or where sodic bore water is used.				
Mo 250P™	25% molybdenum	Foliar			200 mL early in this growing season, and again if necessary later in the season.				
Moly-Balt™	Molybdenum and cobalt	Foliar			200 mL early in this growing season, and again if necessary later in the season.				
Nature's K™	Balanced K, P and S	Foliar			As required rates up to 50 L/ha via foliar.				
Nature's K™	product with fulvic acid	Fertigation			As required rates of up to 300 L/ha via fertigation.				

Tissue Testing

Plant tissue testing allows the grower to determine the nutrient status of the crop. This allows the grower to use actual real-time data to make key management decisions that affect crop growth and income.

Tissue testing can alert growers to low or deficient nutrients status before any visual symptoms appear. Once visual, the crop will be experiencing yield loss.

When tissue testing, the samples should not be affected by any outside factors like machinery, insect or herbicide damage.

Samples should be collected mid-morning early in the week. They should be placed in a paper bag and expressed posed immediately after collection.

If the samples can't be posted immediately, they should be kept in an esky during the day or fridge overnight.

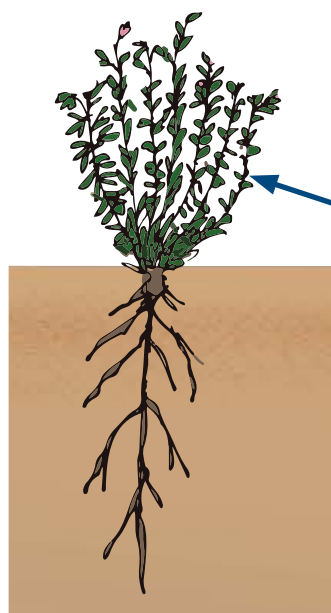
The aside table has an indicative range of nutrients levels that should be observed.

Nutrient	Typical leaf analysis nutrient levels (top 150mm at vegetative growth stage)
Nitrogen	4.5 - 5.0%
Phosphorus	0.26 - 0.70%
Potassium	2.5 - 3.8%
Sulphur	0.26 - 0.50%
Calcium	1.0 - 3.0%
Magnesium	0.31 - 1.0%
Sodium	< 0.05%
Iron	30 - 70 µg/g
Manganese	30 - 50 µg/g
Zinc	20 - 50 µg/g
Copper	10 - 15 µg/g
Boron	30 - 80 µg/g
Molybdenum	0.9 - 1.5 µg/g

Sample at first flower

Take the top 1/3 of the stem with the flower (include the flower, leaf and stem).

Remove all the plant above this point



Nutrient Deficiencies

Boron¹

Deficiency Symptoms

Boron deficiency is generally most visible on the youngest leaves or growing points of the plant.



Molybdenum²

Molybdenum deficiency is usually seen in acidic soils.

Deficiency Symptoms

The plant becomes stunted and the plant can show signs generally associated with nitrogen deficiency.



Potassium³

Deficiency Symptoms

- Reduced growth (up to 50% drop in yield before visible symptoms)
- Yellowing and white spots on outer leaves
- Symptoms will first occur in the older leaves.



Sulphur⁴

Deficiency Symptoms

Generally visible as young leaves turning yellow, and overall light-green leaves.



1 Boron. (n.d.). Retrieved May 25, 2021, from <http://anz.ipni.net/article/ANZ-3234>

2 Molybdenum—NSW | Fact Sheets | soilquality.org.au. (n.d.). Retrieved May 25, 2021, from <http://soilquality.org.au/factsheets/molybdenum-nsw>

3 3.4 The major nutrients or macronutrients. (n.d.). Fert\$mart. Retrieved May 25, 2021, from <https://fertsmart.dairyingfortomorrow.com.au/dairy-soils-and-fertiliser-manual/chapter-3-plant-nutrient-requirements/3-4-the-major-nutrients-or-macronutrients/>

4 Identifying Nutrient Deficiencies in Alfalfa | Protassium+®. (n.d.). Retrieved May 25, 2021, from <http://www.protassiumplus.com/knowledge-center/post/identifying-nutrient-deficiencies-in-alfalfa>

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, which 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 paddock 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 paddocks 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

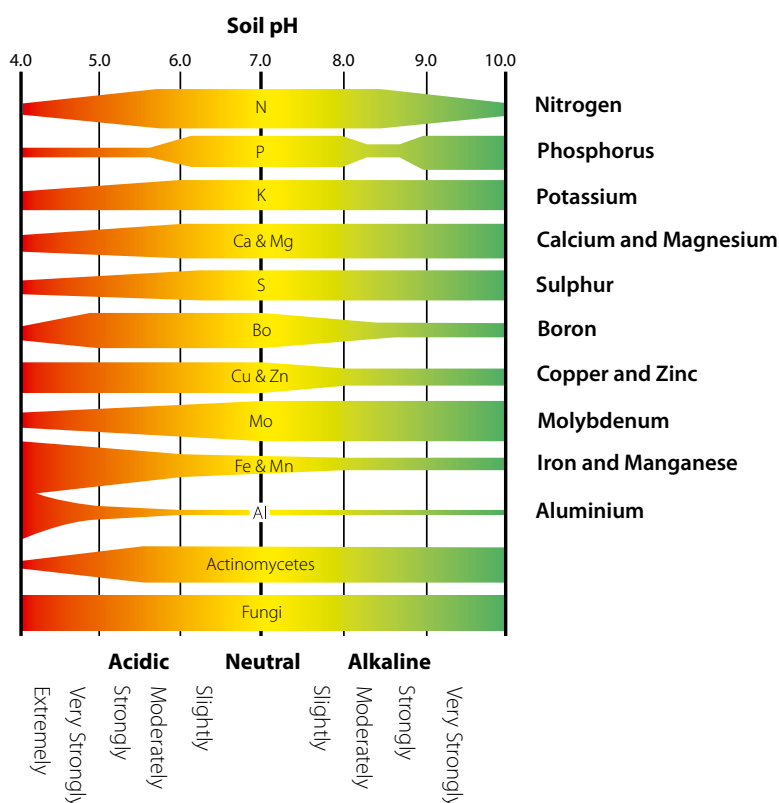
	Balance (%)
Calcium	60 - 70
Magnesium	12 - 15
Potassium	3 - 5
ESP	< 5
Hydrogen	< 20
Ca : Mg ratio	2 - 4

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)





Boost your lucerne to maximise yields

Lucerne Boost™

Product Code: GG0198

An economical product to apply regularly to boost yields.

Benefits of Lucerne Boost™

- High ratio of potassium to phosphorus / nitrogen to sulphur, well suited for a fodder crop
- Potassium is the most removed nutrient when growing lucerne and is essential to protein synthesis
- High amino acid content - proven to assist in crop health and boost yields
- Formulated with essential nutrients (cobalt, molybdenum) to optimise rhizobia activity within the nitrogen fixing nodules

Lucerne Boost™ Compatibility with Selected Ag Chem

Product Name	(mL/ha)	Compatible?
NuFarm Matador 250g/L <i>Lambda-Cyhalothrin</i>	40	Yes
ADAMA Alpha-Scud 300 EC	55	Yes
NuFarm Dimethoate 400g/L <i>Dimethoate</i>	375	Yes
ADAMA Strike-Out 500g/L <i>Chlorpyrifos</i>	300	Yes
Arysta Le-Mat 290g/L <i>Omethoate</i>	200	Yes

Compatible with agitation. 60 L/ha water used, 40 L/ha Lucerne Boost™
Mix order is water, ag chem and Lucerne Boost™,
Results indicate physical compatibility conducted in lab conditions over 6 hours,
and do not account for the impacts of efficacy and mode of action of the pesticides.

Guaranteed Analysis

Nitrogen (N)	0.9%
N as ammonium	0.1%
Phosphorus (P)	1.2%
Potassium (K)	9.0%
Sulphur (S)	0.9%
Zinc (Zn)	0.3%
Copper (Cu)	0.1%
Molybdenum (Mo)	0.1%
Boron (B)	0.3%
Cobalt (Co)	0.004%
Fulvic Acid	1.9%
Amino Acids	2.5%
Specific Gravity	1.169 kg/L
pH Range	7.0 - 10.0

Typical Application Rates

Foliar:

20 - 40 L/ha with at least 80 L of water

Fertigation:

20 - 100 L/ha



Potassium & So Much More



Nature's K™

Product Code: GG0182

Nature's K™ is derived from a highly controlled organic plant extraction process and, as a result, delivers a wide range of amino acids and organic compounds.

With 10.0% potassium as its cornerstone and 1.8% phosphorus, Nature's K™ is a cost-effective potassium source with so much more.

The ratio of 5.5 : 1 potassium to phosphorus makes Nature's K™ ideal for a wide variety of crops.

Role of Potassium in the plant

- Plays a role in photosynthesis and plant food formation.
- Important in conjunction with calcium and boron, in the proper development of cell walls.
- Controls plant cell turgor and subsequently the opening and closing of leaf stoma, supporting the plant's response to drought stress.
- Improves a plant's ability to combat disease and insect damage.

Guaranteed Analysis (w/v)

Nitrogen (N)	0.6%
N as amino acids	0.3%
Phosphorus (P)	1.8%
Potassium (K) - MKP	10.0%
Sulphur (S)	2.6%
Carbon (C)	0.6%
Fulvic Acid	2.1%
Amino Acids	2.8%
Specific Gravity	1.160 kg/L
pH	8.5 - 10.0

Also contains;

Biostimulants:

- Plant-derived amino acids
- Fulvic acids

Typical Application Rates

Foliar:

Up to 40 L/ha with at least 200 L of water, as required

Fertigation:

Maize:

100 - 300 L/ha application, as required





A Multitrace Solution to Maximize Crop Potential

TE 8 PLUSTM

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 PLUSTM

- A focus on magnesium, manganese, zinc and copper – the key drivers of photosynthesis and healthy leaves and plants; resulting in reduced disease pressure.
- Additional nitrogen to promote plant response and rapid plant uptake.
- 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 PLUSTM is physically compatible with a wide range of herbicides, insecticides and fungicides. Please contact SLTEC® for more information.
- TE 8 PLUSTM will help ensure you utilise all your fertilizer inputs as the trace elements work in synergy with your macro applications.

TE 8 PLUSTM 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 3TM or Lo Biuret Urea to improve bud nutrient levels to drive early spring growth.

Guaranteed Analysis (w/v)

Nitrogen (N)	2.6%
N as nitrate	2.6%
Potassium (K)	0.1%
Sulphur (S)	4.2%
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	1.295 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



Fluid Fertiliser Storage Systems

The team at SLTEC® have conducted extensive research into storage and handling systems and can assist you in designing and implementing your liquid nutritional program.

Well designed fluid fertiliser storage and injection systems are essential to ensuring your fluid inputs are effectively utilised, to maintain your workforce safety, and to minimise environmental impacts.

SLTEC® Fluid Fertiliser Tanks

Free Standing 32,000 L Tank

Poly Tank complete with:

- Manhole & safety lid
- Banjo fertiliser resistant fittings
- 3" camlock infill / outlet and air vent assemblies
- Stainless steel sight gauge assembly
- Bottom sump & 1" drain valve enabling 100% drainage
- Strong poly base to support and fittings

[Tank available for purchase or rental.](#)



Free Standing 10,000 L Tank

Poly Tank complete with:

- Manhole & safety lid
- Banjo fertiliser resistant fittings
- Sight gauge 3/4"
- Tank height is designed to fit under Centre Pivot centre

[Tank available for purchase only.](#)



Header Tanks for Liquid Run Fertiliser

- Made from a recycled 220 L drum
- Stainless steel float assembly with poly ball float
- 1" fertiliser resistant camlock fittings with hose supplied

[Sale only, or ask for blueprint to make your own.](#)





Agchem Compatibility

[illegible]

This compatibility chart represents physical compatibility of SLTEC products. All testing is completed under laboratory conditions. Compatibilities indicated are immediate and not over the period of application. As there are many variables in each application situation such as water volume, quality and pH, interpretations given here are a guide only, we recommend completing a bucket test prior to application. These recommendations are made in good faith, based on the best technical information we have available. Additionally, environmental and managerial factors influence crop production, therefore Sustainable does not accept any liability arising out of these interpretations and recommendations for any damage loss or injury of any nature and the user considers these interpretations and recommendations on these terms.



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



FERTCARE®

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details of your closest dealer**

sltec.com.au