



*Quality Ingredients
Australian Made
Family Owned*

FERTILIZERS

Nutrient Solutions



Post-Harvest Stone Fruit Nutritional Guide

Post Harvest nutrient management is a key factor in fueling your trees from bud-swell to petal fall. What happens post harvest can influence bud fertility and the strength of bloom in spring. Are you getting the balance correct?

Working with SLTEC®'s Agronomy team can help you to maximise the factors that are in your control.

sltec.com.au

Why Choose SLTEC® Fertilizers?

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

SLTEC®'s Commitment

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



Post-Harvest Nutrition Information

Approximately 20% of the annual nitrogen, 24% of the phosphorus, 30% of the potassium, 12% of the calcium, 29% of the magnesium and 30% of the sulphur requirements come from stored reserves taken up after harvest.

Benefits of Post-Harvest Fertilizer Applications in Pome Fruit

As the harvest season ends, attention should be given to next year's crop potential, including beginning the correction of any nutrient issues that may have been diagnosed during the season and from summer tissue and fruitlet testing.

Post-harvest fertiliser is vital in ensuring trees have adequate energy to facilitate healthy root, bud and stem growth in early Spring.

Nutrients applied after harvesting are stored in perennial tissue as carbohydrate reserves in the form of starch and sugars and utilised in early growth periods during the absence of enough leaf area. A low carbohydrate reserve at the beginning of the season will significantly impact the tree's early growth and potential yield.

Carbohydrate storage requires photosynthesis. Therefore, post-harvest fertiliser applications should be applied as soon as possible while there is still an adequate number of healthy leaves.

It is now widely accepted that both post-harvest foliar and fertigation nutrition as soon as possible after harvest is a key tool in providing adequate bud nutrient levels through to petal fall.

Irrigation

Trees must receive adequate water post-harvest to maximise their carbohydrate storage and nutrient uptake for the following season.

Remaining irrigations must be managed carefully to maintain a functional canopy for three to four weeks after harvest. Both topsoil and subsoil moisture must be 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.

Stone Fruit	N	P	K	Ca	Mg	S
Nutrient usage post-harvest	20%	24%	30%	12%	29%	30%

Total nitrogen removal in fruit alone per hectare for a 50 t/ha crop of stone fruit is estimated at 32 kg/ha.

It is well established that late summer post-harvest nitrogen applications provide the primary source of nitrogen reserves to support tree function and early growth until post-bloom. Once growth has stopped (terminal buds set) as much as 30% of the trees fertilizer needs may be applied through ground and foliar methods depending on the variety and growing season length.

Fertigation applications to the soil immediately after harvest are more effective than later post-harvest applications. Care should be taken with excessive nitrate applications which can promote excessive growth post-harvest and prevent a tree from setting terminal buds and shutting down properly before winter.

Recent research has proven that stone fruit trees do respond to post-harvest urea applications with a positive effect on stored carbohydrate in buds, cold hardiness and increased spur leaf size in spring.

Applying phosphorus and calcium at this time provides for strong bud development and promotes good root growth going into winter. In stone fruit, approximately 24% in of the annual phosphorus requirements can be required post-harvest depending on the soil type, with the balance applied monthly or at the correct physiological intervals.

Approximately 30% of the annual potassium required at this growth stage in stone fruit to assist with bud strength for early spring to fruit set. This will also aid in maintaining the balance of salts and water in plant cells to cope with frost and other stress.

For every 10 ton of stone fruit removed approximately 21kg of potassium is removed.

Key foliar trace elements to apply now are magnesium, zinc, copper, manganese and boron with nutrients translocating from leaves to buds and wood for storage. SLTEC®'s Recharge Foliar range will be formulated in the correct ratio to match the crop's usage.

The Process

Our approach to formulating an accurate program for post-harvest applications combines the examination of a number of data sources specific to pome and stone fruit, alongside specific considerations that are unique to each growing situation.

Theoretical

1. Nutrient Uptake Curve & Data

This information allows us to better understand the nutrient demands and the ratios of these nutrients at specific physiological stages of the plants growth and recognise the nutrients it requires in the correct balance to maximise its potential at that growth stage.



Understanding Liebig's Law of the Minimum we can ensure we don't exclude any nutrient that can have a detrimental effect on our yield or quality parameters.

3. Crop Removal Rates

This information allows us to look at the target yield and the nutrients required to archive this yield.

Nutrient Uptake & Removal Data		Nutrient Usage Post Harvest %				
		N	P	K	Ca	Mg
	kg/ha of fruit removed	1.50	0.40	3.00	0.40	0.30
	kg/ha of fruit replacement potential for 1 t of fruit	0.50	0.11	0.45	0.09	0.02
	kg/ha of fruit replacement potential based on tons removed	7.65	1.68	6.75	1.52	0.93

Nutrient Ratio Data		Nutrient Ratio				
		P & K	Ca	Mg		
	N:P:K	6.6	1.0	4.0		
	N:Ca:Mg	23.7		4.0	1.0	
	N:K:Ca	1.8		1.0		

4. Nutrient Ratio Options

This segment ensures we are providing the plant with the nutrients in the correct ratio to maximise the efficiency of our application and result.

Stone Fruit Macronutrient Uptake (g/plant/day)											
Nitrogen			Phosphorus			Potassium			Calcium		
Plant 10 days after emergence	per Day & per plant	% of total uptake	per Day & per plant	% of total uptake	% of total uptake	per Day & per plant	% of total uptake	% of total uptake	per Day & per plant	% of total uptake	% of total uptake
20	1.8	1.80%	0.5	0.50%	0.5	0.5	0.50%	0.5	0.5	0.50%	0.50%
24	1.7	1.67%	0.5	0.50%	0.5	0.5	0.50%	0.5	0.5	0.50%	0.50%
28	1.5	1.47%	0.4	0.40%	0.4	0.4	0.40%	0.4	0.4	0.40%	0.40%
32	1.3	1.30%	0.3	0.30%	0.3	0.3	0.30%	0.3	0.3	0.30%	0.30%
36	1.1	1.10%	0.2	0.20%	0.2	0.2	0.20%	0.2	0.2	0.20%	0.20%
40	0.9	0.90%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
44	0.7	0.70%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
48	0.5	0.50%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
52	0.3	0.30%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
56	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
60	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
64	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
68	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
72	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
76	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
80	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
84	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
88	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
92	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
96	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
100	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
104	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
108	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
112	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
116	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
120	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
124	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
128	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
132	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
136	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
140	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
144	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
148	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
152	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
156	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
160	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
164	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
168	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
172	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
176	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
180	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
184	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
188	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
192	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
196	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
200	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
204	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
208	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
212	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
216	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
220	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
224	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
228	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
232	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
236	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
240	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
244	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
248	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
252	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
256	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
260	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
264	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
268	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
272	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
276	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
280	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
284	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
288	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
292	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
296	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
300	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
304	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
308	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
312	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
316	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
320	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
324	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
328	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
332	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
336	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
340	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
344	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
348	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
352	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
356	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
360	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
364	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
368	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
372	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
376	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
380	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
384	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
388	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
392	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
396	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
400	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
404	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
408	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
412	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%
416	0.1	0.10%	0.1	0.10%	0.1	0.1	0.10%	0.1	0.1	0.10%	0.10%



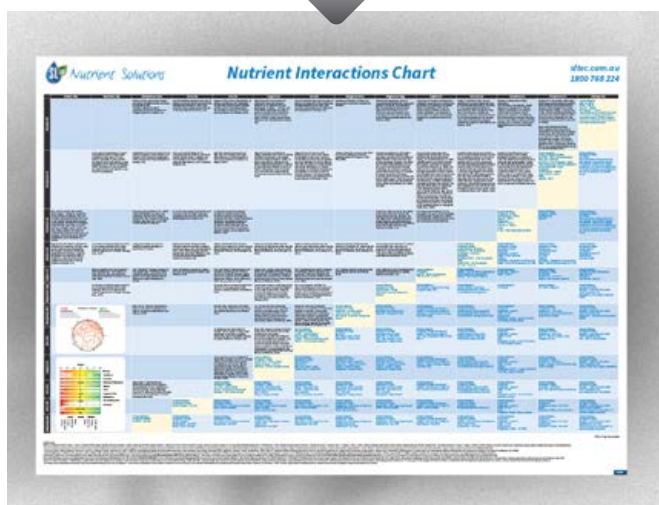
Customised To the client's needs

6. Site Considerations

It is important that we gather all previous historical data from the site and understand any long-term trends. We can learn a lot from history and save ourselves a lot of pain in the future.

Potential Site Considerations:

- Age of the trees
- Previous yields (quantity)
- Previous pack out (quality)
- Soil tests
- Tissue Tests
- Irrigation practices
- Budget
- Soil pH – is there any amelioration to be done?



7. Nutrient to Nutrient Interactions

SLTEC® has invested vast resources into researching the interaction between nutrients in both the soil and plant.



8. Nutrient Role Information

SLTEC® has invested vast resources into the role of different nutrients in the soil and plant.



9. Application Considerations

It is critical to understand the ability of the client to apply product options in the most efficient application method.



The Result

All things considered this process will ensure the grower maximises their post-harvest applications to ensure they maximise their following years yield and product quality.

***To undertake this process for your specific situation,
please contact your SLTEC® Representative***

Post-Harvest Product Options

Utilising the data examined in the post-harvest process, we are able to prescribe the appropriate product to ensure that your crop is receiving the exact nutrients it requires to achieve maximum health, and ultimately yield.

Fertigation Options

L of product to replace 1 ton of removed fruit	Post-harvest product options	N % w/v	P % w/v	K % w/v	Ca % w/v	Mg % w/v	S % w/v	SG (kg/L)
1.7	Stone Fruit Recharge P K S		2.9	36.9			1.8	1.42
2.9	Stone Fruit Recharge N P K S	10.7	1.6	21.9			1.0	1.30
1.4	Stone Fruit Recharge N P S	23.0	3.4				1.3	1.19
1.6	Stone Fruit Recharge P K		3.0	40.7				1.53
1.6	Stone Fruit Recharge N, Ca & Mg	20.0			1.0	3.0		1.31
1.3	Stone Fruit Recharge N & Ca	24.0			1.4			1.27

Foliar Options

SLTEC®'s range of Foliar Recharge products have been designed with several key factors in mind.

1. Highly Plant available form nitrate trace elements to ensure maximum efficacy
2. Formulated in the same ratio of nutrients the plant requires.
3. Highly concentrated products to ensure low volume for maximum return.
4. A clear design in the application rate based on crop removal ratios.

With these major mechanisms you can be assured you are getting the best possible result for your post-harvest investment.

Stone Fruit TE Recharge Foliar™

N % w/v	Mg % w/v	Mn % w/v	Zn % w/v	Cu % w/v	Fe % w/v	SG (kg/L)
9.8%	5.1%	2.9%	4.2%	1.1%	0.5%	1.41

3.5 L of Stone Fruit TE Recharge Foliar™ for every 10 ton of fruit removed, will deliver;

N	Mg	Mn	Zn	Cu	Fe
340g	180g	100g	150g	40g	20g

MoBo Complex™

MoBo Complex™ should be tank mixed with Stone Fruit TE Recharge Foliar™ with at least 500 L of water.

N (% w/v)	Mo (% w/v)	B (% w/v)
6.0	0.3	14.7

Grams of nutrients delivered per application

200mL of MoBo Complex™ for every 10 ton of fruit removed, will deliver;

Mo	B
0.6g	30g

Single Nutrient Fertigation & Foliar Product Options

Nitrogen: Nitro QUAD 20™

Nitro QUAD 20™ is a high nitrogen source with all the benefits of 20% QuadSHOT® ensuring improved efficiency of your nitrogen application

Analysis (% w/v)			
N 34.1%, N as NO ₃ 8.6%, N as NH ₄ 8.5%, N as Urea 17.0%, P 0.3%, P as PO ₄ 0.3%, K 0.5%, Fe 0.006%, Fulvic Acid 0.005%, Fish Emulsion 1.5%, Humic Acid 1.3%, Kelp 1.5%, Molasses 1.5%			
SG (kg/L)	ph	Fertigation	Foliar (use 200 - 2,000 L/ha water)
1.297	4.0 - 6.0	10 - 80 L/ha	10 - 60 L/ha

Phosphorus: SS 11:16:0™

SS 11:16:0™ is a blend of nitrogen and highly plant available phosphorus to assist in post-harvest root health

Analysis (% w/v)			
N 9.8%, N as NO ₃ 9.8%, Mg 8.8%			
SG (kg/L)	ph	Fertigation	Foliar (use 200 - 2,000 L/ha water)
1.297	6.0 - 7.0	20 - 100 L/ha	1 - 5 L/ha

Calcium: BiologiCAL® PLUS

Highly available, activated calcium with the added benefit of biostimulants

Analysis (% w/v)			
N 0.3%, N as NO ₃ 0.3%, P 0.1%, K 2.0%, S 1.8%, Ca 6.5%, B 0.1%, C 12.5% Fulvic Acid 0.009%, Fish Emulsion 0.3%, Humic Acid 0.2%, Kelp 0.3%, Molasses 41.8%			
SG (kg/L)	ph	Fertigation	Foliar (use 200 - 2,000 L/ha water)
1.281	8.0 - 10.0	20 - 60 L/ha	1 - 20 L/ha

Foliar: Baseline Plus™

Baseline Plus™ is a blend of 15 essential nutrients and biostimulants

Analysis (% w/v)			
N 11.7%, N as urea 11.7%, P 4.9%, P as PO ₄ 4.9%, K 13.6%, S 2.0%, C 0.3%, 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%			
SG (kg/L)	ph	Fertigation	Foliar (use 200 - 2,000 L/ha water)
1.304	7.5 - 8.5	10 - 80 L/ha	2 - 15 L/ha

Potassium: Carbo K™

High analysis potassium blend (43.8%) as potassium acetate

Analysis (% w/v)			
N 9.8%, N as NO ₃ 9.8%, Mg 8.8%			
SG (kg/L)	ph	Fertigation	Foliar (use 200 - 2,000 L/ha water)
1.545	13.0 - 14.9	10 - 80 L/ha	1 - 5 L/ha

Foliar Nitrogen Applications with TE & Nitrogen

Common foliar application rates for deciduous fruit trees to enhance stored nitrogen and carbohydrate reserves are 10 to 20 kg/ha for one to two sprays. Low Biuret Urea can be combined with your choice of SLTEC®'s single trace elements such as the highly compatible Nitro Trace Range or a pre-formulated trace element blend such as.

As an alternative to Urea, a number of growers are now recognizing the benefits of applying SLTEC®'s Nitro QUAD 3 post harvest. This product provides three forms of nitrogen in combination with organic stimulants contained in QuadSHOT® and can be applied as foliar or through fertigation.



Nutrient Roles in Post-Harvest

Macro Nutrients

Nitrogen (N)

Post-harvest nitrogen applications via both foliar and soil application are proven to increase flower duration, the length of time for pollination and subsequent fruit set. Cherries, apricots and early season apple varieties rely heavily on post harvest nitrogen applications and may receive from 50 - 80% of their seasonal nitrogen allocation post-harvest, depending on the site, variety, rootstock and previous crop load.

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 safeguard 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.

Trace Elements

Foliar application of trace elements with low biuret urea is highly beneficial in most situations as the nitrogen stimulates uptake. Key foliar trace elements to apply now are magnesium, zinc and boron. Movement of both boron and zinc is minimal in the tree until extension growth commences.

Boron (B)

Boron is involved in calcium mobility, cell membrane integrity and cell wall polysaccharides and is well known to influence good pollination, seed set and fruit shape. It is prone to leaching and during winter levels can fall below the desired requirements for fruit production, therefore post harvest application of boron plays an important role to ensure adequate levels at bud burst.

Zinc (Zn)

Zinc is essential for the production of the primary growth hormone - auxin and is required by a large number of enzymes and for chlorophyll production. Only small amounts are taken up by roots and deficiency is common in pears resulting in blind buds and small leaves. Although foliar zinc applications are very effective in most fruit tree crops - care must be taken with timing of application on sensitive varieties (Apricots and Peaches).

Magnesium (Mg)

It is also common to apply magnesium at this time although it is quite mobile and deficiency can usually be corrected relatively easily during the growing season. Magnesium is part of the chlorophyll molecule and is subsequently critical for photosynthesis.

Manganese (Mn) & Iron (Fe)

Manganese and iron are also essential in photosynthesis through enzyme activation and electron transfer respectively.

Iron has limited mobility in plants and both Iron and manganese uptake can be easily affected by high pH soil conditions.

Copper (Cu)

Adequate copper levels are important, contributing to yield, firmness as well as the reduction of fruit rot and fruit cracking. Copper improves skin strength and is a component of lignin, pectin, cellulose and compounds in cell walls.

Copper sprays can be applied as a post-harvest foliar spray when there is no risk of fruit russetting, but when the leaves are still active and green.

Applying copper as a foliar is an efficient method to boost plant tissue and bud levels, recharging levels in the plant ahead of the following season.

Our Sustain & Gro®

Range focuses on soil health and biostimulation. QuadSHOT® provides a valuable combination of fish emulsion, kelp, humates and molasses to stimulate recovery of root-zone biology prior to winter. If you are looking for a highly plant available source of calcium to aid root development go no further than BiologiCAL® PLUS.

**To assist in mineralisation, nutrient
and water availability as the soil
temperatures drop during post-harvest**

QuadSHOT®

Product Code: SG0039

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	1.154 kg/L
pH	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 - 60 L/ha as a directed soil spray,
prior to planting or banded under canopy,
with 200 - 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)	



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

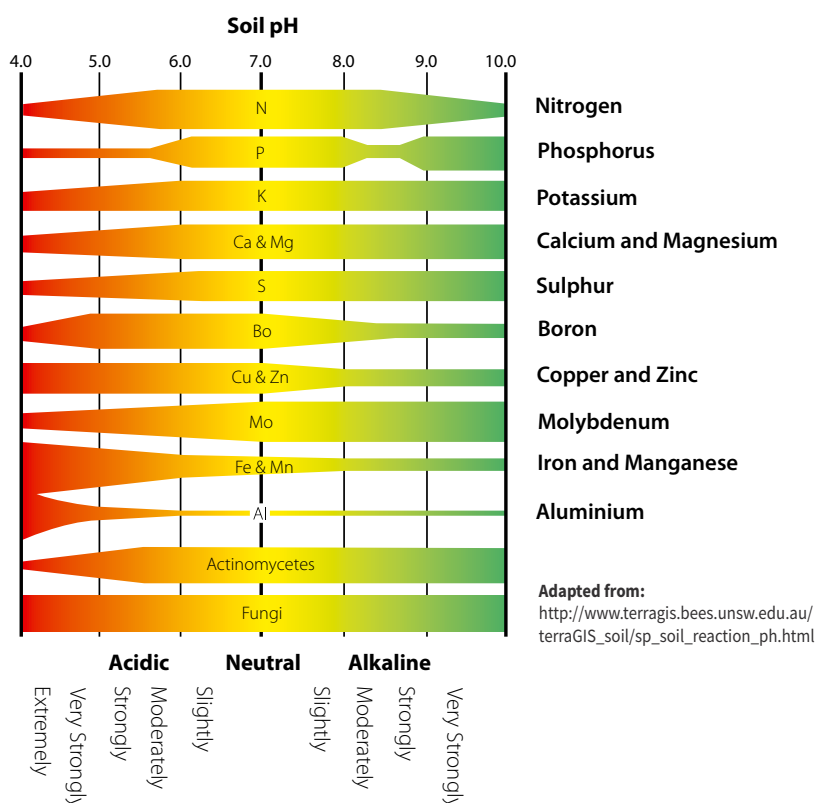
(preferred level >10 meq/100g)

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



AquaLIME 38™ (Flowable Lime)

Product Code: SG0037

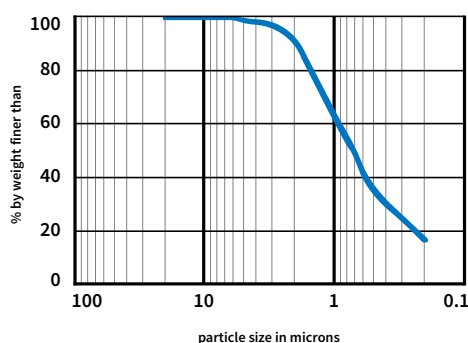


AquaLIME 38™ is an extremely effective tool at post-harvest to amend any acidification of the soil around the drip tape which can occur with fertigation.

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

AquaLIME 38™ is an extremely concentrated and reactive form of calcium carbonate (or “lime”). 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.

Particle Size Distribution



AquaLIME 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 AquaLIME 38, its effective neutralising value is considered to be 99 because every particle is 100% reactive in the soil.

Why Use AquaLIME 38™?

- Highly uniform - extremely fine particle size (1 micron)
- Highly reactive - high purity calcium carbonate
- Neutralising 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 AquaLIME 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 +

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%



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