



FERTILIZERS

*Quality Ingredients
Australian Made
Family Owned*

Nutrient Solutions

Potato Nutritional Guide

Backup your pre-plant fertilizer and push the boundaries of production with SLTEC's range of quality fluid fertilizers.

SLTEC can assist you to develop your nutrient budget, improve production efficiency and reduce environmental impacts.

www.sltec.com.au

SLTEC Fertilizers provide a convenient range of fluid options suited to both foliar and fertigation that provide flexibility and assist you to maximise your crops potential.

Good fertilizer management practices based on soil and tissue testing enable you to target specific peaks in crop demand during the growing season. Understanding crop nutrient removal is a key component of this process.

Average Nutrient Removal

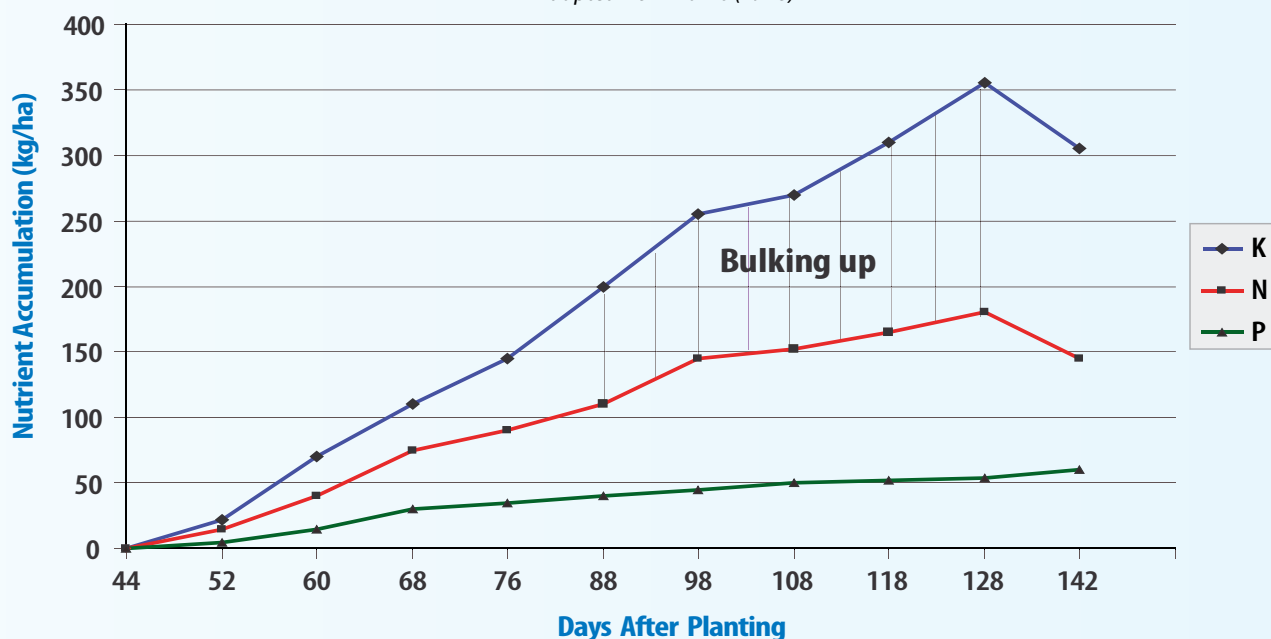
Description	N	P	K	S	Ca	Mg
kg Nutrient / tonne Crop - Australia	3.26	0.40	4.35	0.29	0.13	0.18
(kg Nutrient / ha) (60 t / ha crop)	195.4	24.0	261.1	17.3	7.6	10.8

Research indicates that total plant uptake (tubers and above ground plant) is often double this. **Note:** Potatoes have a high seasonal Iron requirement - as high as 2 - 3 kg / ha.

- Maier (1998)
- Cresswell and Huett (1998)
- K.Jackson (pers.comm)
- G.Rayment (1993, 1994) n=21
- L.Sparrow (pers.comm)
- Chapman et al (1992)
- Sparrow and Temple-Smith (1988)
- Hosking (1986)
- I.McPharlin (pers.comm)
- Robertson et al. (1999)

Nutrient Uptake by Potatoes Through the Season

Adapted from Harris (1978)



Plant Establishment / Tuber Initiation

Nutrients such as P - K - Ca - B, are required by the plant right from planting. An adequate supply of nutrients and water is important during tuber initiation to build tuber number and size.

Nitrogen is required throughout the plants life. 75% is required in the early part of the vegetative stage (first 60 to 80 days after planting) and then tapers up to mid - late flowering.

Products such as **Nitro QUAD 3** allow nitrogen to be supplied as split applications via fertigation or foliar methods over the life of the crop.

Bulking Up

Potassium requirement peaks during the bulking up stage of the tubers. Flowering indicates the beginning of the bulking up stage.

Products such as SLTEC's **High KP** and **Carbo K** are high analysis liquids that provide plant available Potassium. Average daily accumulation rates of potato tubers during bulking up may be in the order of 4 to 6 kg/ha N, 0.5 to 3 kg/ha P and 5.0 to 10 kg/ha K.

Maturation

During Maturation nutrients are transferred from the vegetative portions to the tubers. The vegetative parts

of the plant need to be sufficiently healthy to continue to supply carbohydrates to the maturing tubers however excessive soil Nitrogen, applied late in the season can delay maturity and result in poor skin set, which harms the tuber quality and storability properties.

Note: slower growth leads to greater Specific Gravity (SG) at harvest. Inadequate Potassium nutrition can be associated with low SG.

To increase SG, avoid excessive irrigation as vines start to senesce. Timing is approximately 2 weeks prior to vine death.

Deep soil testing and petiole nitrate sampling during the growing season are recommended for correct nitrogen management.

References

- Stark and Westermann 2008, "N, P, and K accumulation by Russet Burbank potatoes grown with non-limiting nutrition and water in the Snake River Valley of Idaho"
- Mikkelsen and Hopkins, "Fertilizer Management Practices for Potato Production in the Pacific Northwest", International Plant Nutrition Institute (IPNI) - Ref: 08054
- Asfary, Harris, Wild, June 1982, "Growth Mineral Nutrition and Water Use by Potato Crops" - Dept soils Science University of Reading.
- Harris 1978, "The Potato Crop. The Scientific Basis for Improvement". Chap 5 - Mineral Nutrition.
- Stark, Westermann and Hopkins - "Nutrient management Guidelines for Russett Burbank Potatoes" Bul 840, University of Idaho - Extension, Oct 2004

Potato Growth Stage & Suggested Product Application Timeline



QuadSHOT® - 4 way combo of Humic Acid, Kelp, Fish Emulsion and Molasses that stimulates plant uptake.

For more information see
QuadSHOT® Fact Sheet
www.sltec.com.au/downloads/

See back page for technical analysis

Product Code	Product Name	Planting	Sprout Development	Vegetative Growth	Tuber Initiation	Tuber Bulking	Maturation	Notes
GG0064	Nitro QUAD 3 *		30 - 80					42% Nitrogen with QuadSHOT® (fish emulsion, kelp, humic and molasses) to enhance uptake
				5 - 15				
SS9008	NEW SS 14:21:0	10 - 50	20 - 100					Polyphosphate offers a slower Phosphorus release in high 'lock-up' situations.
SS9003	SS 10:14:0 + Zn *	10 - 50	20 - 100					Ammoniated Phosphorus with Zinc for plant establishment.
GG0090	Macro Z	10 - 50	20 - 100					NPK (8 - 14 - 7 - 2) plus Zinc - advantage of SS 10:14:0 plus Potassium and Sulphur
GG0024	Cal Mag & Boron			50				Maintain Nitrogen, Calcium,, Magnesium and Boron at peak demand time.
				5 - 20				
GG0068	High K P		20 - 80					0-12-37 to push tuber initiation and bulking.
				5				
GG0072	Carbo K				5			Max K (44%) for maximum response.
SNPK0013	Mag K Plus				5 - 10			Foliar 10% Potassium with 5% Magnesium when Magnesium balance needs to be maintained.
GG0009	Baseline Plus				5 - 20			Complete NPK liquid (12 - 5 - 14) plus chelate trace and biostimulants
SNPK0050	Boron Complex				0.5 - 2			Convenience of a 15% Boron liquid to assist with Calcium mobility and tuber quality.
GG0048	TE 8 (Formerly TE 6)							Multi trace foliar for plant establishment
				2 - 10				

Banded below or to the side of seed

Fertigation

Foliar

All rates are L/ha - Foliar use at least 200 L/ha water

* SLTEC can provide a wide range of custom blends including addition of trace elements to our existing range on request depending on volume.

Disclaimer: Interpretations and recommendations given here are a guide only. The recommendation is made in good faith, based on the best technical information available. Additionally, environmental and managerial factors influence production, therefore Sustainable Liquid Technology Pty Ltd does not accept any liability arising out of these interpretations and recommendations for any damage loss or injury of any nature and the user takes these interpretations and recommendations on these terms.

Product Technical Analysis

Product Code	Name	N% (w/v)	P% (w/v)	K% (w/v)	S% (w/v)	Ca% (w/v)	Specific Gravity (kg/L)	pH Range
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	-	-	1.30 - 1.32	6.0 to 7.0
SS9008	 SS 14:21:0 N as NH ₄ 14.0%, P as PO ₄ 20.8%	14.0	20.8	-	-	-	1.39 - 1.41	6.2 to 7.0
SS9009	SS 10:14:0 + Zn N as NH ₄ 10.2%, P as PO ₄ 13.6%, Zn 0.8%	10.2	13.6	0.3	-	-	1.28 - 1.29	6.0 to 7.0
GG0090	Macro Z N as NH ₄ 8.32%, P as PO ₄ 13.62%, Zn 0.82%	8.3	13.6	6.8	2.1	-	1.34 - 1.36	6.0 to 7.0
GG0024	Cal Mag & Boron N as NO ₃ 12.2%, Mg 3.4%, B 0.2%	12.2	-	-	-	12.1	1.47 - 1.50	2.0 to 3.0
GG0068	High K P P as PO ₄ 12.2%	-	12.0	36.5	-	-	1.55 - 1.57	12.0 to 13.0
GG0072	Carbo K	-	-	43.9	-	-	1.54 - 1.55	13.0 to 14.0
SNPK0013	Mag K Plus Mg 4.9% , Fulvic Acid 0.5%, Kelp 1%	0.01	-	9.5	7.7	-	1.29 - 1.33	5.5 to 6.5
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%, 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	-	1.29 - 1.32	7.5 to 8.5
SNPK0050	Boron Complex N as amine 6%, B 15%	6.0	-	-	-	-	1.34 - 1.38	7.5 to 8.5
GG0048	TE 8 (Formerly TE 6) N as NO ₃ 2.8%, Mg 2.5%, Mn 3.3%, Zn 3.3%, Cu 0.5%, Mo 0.02%, B 0.2%, Fe 0.8%	2.8	-	-	4.4	-	1.30	1.0 to 2.0

Please contact SLTEC for details
of your closest dealer



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