

SLTEC[®] Maize Program

Crop nutrient budgeting is critical to improving production efficiencies and to reduce any environmental impacts from the overuse of fertilizers. As part of SLTEC[®]'s maize program, we aim to assist growers to better understand the nutrient requirements of their crop and at which stages of growth the peak demand for nutrients occurs.

The program shown below is an example based on a 15t grain crop in Northern Victoria. In other regions, other nutrients such as Potassium may be required to achieve expected yields due to differing soil conditions.

The final fertilizer program and nutrient budgeting used on an individual crop in any region should be made in consultation with your agronomist after consideration of yield expectations and nutrient removal from previous crops. SLTEC[®] strongly recommends soil testing prior to planting along with plant tissue testing during the growing season.

Maize Grain and Stover Nutrient Removal Charts

	kg per tonne						g per tonne					
	N	P	K	S	Mg	Ca	Cu	Mn	Zn	B	Fe	Mo*
Grain	10.24	2.33	3.17	1.22	0.51	0.21	7.64	10.42	16.67	36.81	22.92	1.00
Stover	7.50	1.16	15.22	1.17	3.33	2.17	4.86	125.00	25.00	4.86	41.67	0.1
Grain & Stover	17.74	3.49	18.39	2.39	3.84	2.38	12.50	135.42	41.67	41.67	64.59	1.1

Table adapted from: <http://www.agphd.com/resources/nutrient-removal-charts/corn-grain-and-stover-nutrient-removal-charts/>

Removal is based on a 16.14 t/ha of grain crop.

* Indicative only

Period 1	Period 2	Period 3	Period 4	Period 5	Period 6												
Week 0	Week 1 - 3	Week 4 - 6	Week 7 - 9	Week 10 - 12	Week 13 - 17												
Sowing / Pre Plant	Emergence - V6	Shoulder High	Tasseling > Silking	Silking > Blister	Milk Line 3 Full Dent > Black Layer												
Estimated proportion of annual crop nutrient demand for each crop stage																	
N	P	K	N	P	K	N	P	K	N	P	K	N	P	K	N	P	K
1%	1%	2%	20%	7%	28%	45%	28%	57%	27%	39%	13%	6%	22%	0%	1%	3%	0%

Product Code	Product Name	Product Description	Application Method	Total No. of Applications	Total L/kg Applied for Season	Suggested application timings, methods and rates (L/ha)												
						Please consult your agronomist for specific information regarding your situation												
-	DAP (Granular)	Diammonium phosphate (18 - 20 - 0)	Banded/Broadcast	1	200 - 350	200 - 350												
-	Urea (Granular)	Urea (46 - 0 - 0)	Banded/Broadcast	1	200 - 300	200 - 300												
SS9003	SS 10:14:0 + Zn	Highly plant available nitrogen, phosphorus and chelated zinc, designed for application into the seed bed at sowing, to ensure strong early vigorous roots and development.	Liquid Sowing	1	40	40												
SSCB0007	SS 8:10:0 + 2.3% Zn	Nitrogen and phosphorus blend developed to combat high zinc requirements.	Liquid Sowing	1	40	40												
CB0013	Corn Popup	Formulated to deliver a range of five nutrients required for strong germination, including boron and molybdenum .	Liquid Sowing	1	40	40												
SNPK0054	Mo 250P (applied with SS)	25% molybdenum. Can be co-applied with SS 10:14:0 + Zn at sowing or foliar applied later in the season.	Liquid Sowing & Foliar	1	0.1	0.1												
SNPK0033	Z Chel (applied with herbicide)	Highly crop available zinc chelate (EDTA). Tank mix compatible with most ag-chem to boost the crop and eliminate spray shock.	Liquid Sowing & Foliar	1	2			2										
GG0066	UAS (Water Run)	Liquid nitrogen and sulphur in a 1:4 ratio. Can be water run short distances or applied via sprinklers. 400 L may have enough sulphur to cover crop removal.	Fertigated	3	300 - 600				100 - 200		100 - 200		100 - 200					
GG0032	Urea 26	100% urea nitrogen designed for water running with irrigation water or applied via pressured systems.	Fertigated	3	300 - 600				100 - 200		100 - 200		100 - 200					
SNPK0053	MoBo Complex	Foliar boron and molybdenum for foliar application. Can be applied with some ag-chem products.	Foliar Applied	1	2			2										
SNPK0080	High P Z	Highly crop available phosphorus, potassium and zinc pop-up. Can be used to encourage crop growth in unfavourable conditions.	Foliar Applied	1	3 - 5			3 - 5										

SLTEC® Maize Fertilizer Options

Maize Growth Stage Considerations

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	Foliar Use at least 100 L/ha water	Liquid Injection
SS9003	SS 10:14:0 + Zn N as NH ₄ 10.1%, P as PO ₄ 14.0%, Zn 0.8%	10.1	14.0	-	-	-	1.27 - 1.28	6.5 - 7.0	20 to 100 L/ha	2 to 20 L/ha	20 to 40 L/ha
SSCB0007	SS 8:10:0 + 2.3% Zn N as NH ₄ 8.3%, P as PO ₄ 10.1%, Zn 2.3%	8.3	10.1	-	-	-	1.25 - 1.26	6.0 - 8.0	20 to 100 L/ha	2 to 20 L/ha	20 to 40 L/ha
CB0013	Corn Popup N as NH ₄ 8.8%, P as PO ₄ 11.0%, Zn 1.9%, Mo 0.004%, B 0.04%	8.8	11.0	-	-	-	1.26 - 1.27	6.0 - 7.0	20 to 100 L/ha	2 to 20 L/ha	20 to 40 L/ha
SNPK0054	Mo 250P (applied with SS) P as PO ₄ 11.0%, Mo 25.0%	-	11.0	-	-	-	1.57 - 1.58	3.5 - 4.5	N/A	40 to 150 mL/ha	50 to 200 mL/ha
SNPK0033	Z Chel (applied with herbicide) N as NH ₄ 3.0%, Z 6.5%	6.0	-	-	-	-	1.17 - 1.18	7.0 - 8.0	2 to 10 L/ha	1 to 3 L/ha	20 to 40 L/ha
GG0066	UAS (Water Run) N as NH ₄ 5.7%, N as urea 20.9%	26.6	-	-	6.7	-	1.23 - 1.24	3.0 - 7.0	50 to 200 L/ha	20 to 60 L/ha	N/A
GG0032	Urea 26 N as urea 26.0%	26.0	-	-	-	-	1.13 - 1.14	6.0 - 8.0	50 to 200 L/ha	N/A	N/A
SNPK0053	MoBo Complex Mo 0.3%, B 14.7%	6.0	-	-	-	-	1.38 - 1.39	7.0 - 8.0	2 to 10 L/ha	1 to 3 L/ha	N/A
SNPK0080	High P Z P 18.0%, K 2.0%, Zn 14.1%	-	18.0	2.0	-	-	1.45	1.0 - 2.0	N/A	3 to 5 L/ha	N/A
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	0.01	1.29 - 1.32	8.0 - 9.0	10 to 80 L/ha	2 to 15 L/ha	N/A
GG0097	Nitro QUAD 20™ N as NO ₃ 8.6%, N as NH ₄ 8.5%, N as Urea 17.0%, Fe 0.006%, Fulvic Acid 0.05%, Fish Emulsion 1.5%, Humic Acid 1.3%, Kelp 1.5%, Molasses 1.5%	34.1	0.3	0.5	-	-	1.28 - 1.29	4.0 - 6.0	10 to 80 L/ha	10 to 60 L/ha	N/A



Sowing / Pre Plant - Period 1

This first stage, including the preparation of the field, involves the application of a large amount of nitrogen, phosphorus and in some cases, potassium prior to planting.

Irrigating early in the season generally results in a reduction in soil temperature which can negatively impact the emergence of the maize seed.

Nutrients applied in liquid form at sowing assists in both the uniform and quick emergence of the germinated seed.

Applying **SS 10:14:0 + Zn** and **Mo 250P** is an effective way to supply seeds with efficient plant available nutrients. Both can be applied with insecticides. Contact SLTEC® for specific compatibility data.

Emergence – V6 - Period 2 (Planting - Week 3)

At this stage the maize crop is established and will take up approximately 20% of the overall crop needs of nitrogen, 7% phosphorus and 28% of the potassium needs. At this stage any trace element deficiencies must be remedied to achieve optimal yields. The crop should also receive top up nitrogen which can be effectively applied to the crop via irrigation water.

UAS (27% nitrogen, 7% sulphur) – water run with irrigation water to save labor and damage to the crop.

Summer Boost (2 :22 :7 + Zn) to assist in cold starts. Can be co-applied with some herbicides.

MoBo Complex (15% boron, 0.3% molybdenum) to ensure essential trace elements are not limiting. Can be co-applied with insecticides.

Shoulder High - Period 3 (Week 4 - 6)

Once the crop reaches this stage, in-crop applications are difficult due to the size of the crop canopy. This stage has the highest uptake of nutrients with 45% of the overall nitrogen requirements, 28% of the phosphorus and 57% of the potassium requirements of the entire crop being utilised during this stage.

Adequate nitrogen and limiting water stress are essential to crop growth and future development. At this stage extra nitrogen and sulphur can be added to the program if the crop potential is higher than initially expected.

UAS (27% nitrogen, 7% sulphur) – water run with irrigation water to save labour and damage to the crop.

Tasseling/ Silking - Period 4 (Week 7 - 9)

During the tasseling and silking stage, it is essential that the crop is not placed under any water stress. Any stress may affect polling production and thus affect grain set into the future stages. Nitrogen uptake is 27%, phosphorus 39% and potassium 13%.

UAS (27% nitrogen, 7% sulphur) – water run with irrigation water to save labour and damage to the crop

Silking/ Blister - Period 5 (Week 10 - 12)

At this stage the crop changes from vegetative stage to reproductive stage. Nutrient uptake is reduced and the plant now converts stored nutrients into ear and grain production.

Milk Line- Black Layer - Period 6 (Week 13 - 17)

In the final stage very little nutrients are taken from the field, and water requirements are reduced with the crop only needing approximately 11% of the overall water requirements. Throughout this stage the grains are filled and a stressed crop will result in reduced kernel size.

Data and information in this booklet has been adapted from HSR Seeds, Pioneer Seeds and Pacific Seeds.



See reverse side for SLTEC® Fertilizers Maize Program