

Bell Pepper Mexico Poly-Feed



Sweet pepper Open field Quantitative

Crop cycle: 200 Days
Yield goal: 60.00 ton/ha
Plot: Mexico 5 ha
Plot size: 5 ha







Transplanting

Nutrient supply for crop

Stage	Days	Macronutrients(kg/ha)			Secondary Nutrients (kg/ha)			Micronutrients (gram/ha)					
		N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Transplanting	30	24.00	48.00	27.00	6.00	3.00	7.19	750.00	352.50	116.00	86.78	57.55	18.00

Fertilizers per stage

Fertilizers application (ha/day)

 Poly-Feed Stim ARMOR 15-15-30+ME+0.4Si 3.00 kg	 Haifa MAP - Mono Ammonium Phosphate 1.89 kg	 Haifa Mag / Magnisal Magnesium Nitrate 65 gram
 Haifa BitterMag Magnesium Sulphate 562 gram	 Haifa Cal GG Calcium Nitrate 755 gram	 Haifa Micro Combi 285 gram

Nutrigation system



Volume: **1000 liter**
 Content: **Phosphorus**
 Injection volume per day: **27.23 l/day**
 Fertilizer concentration: **20 %**
 Tanks per stage: **tanks**



Volume: **1000 liter**
 Content: **Calcium**
 Injection volume per day: **5.55 l/day**
 Fertilizer concentration: **20 %**
 Tanks per stage: **tanks**

- Poly-Feed Stim ARMOR 15-15-30+ME+0.4Si **110.14 kg**
- Haifa MAP - Mono Ammonium Phosphate **69.21 kg**
- Haifa BitterMag Magnesium Sulphate **20.65 kg**

- Haifa Mag / Magnisal Magnesium Nitrate **11.71 kg**
- Haifa Cal GG Calcium Nitrate **136.71 kg**
- Haifa Micro Combi **51.58 kg**

Stock solution nutrients content:

Tanks	Macronutrients (gram/liter)			Secondary Nutrients (gram/liter)			Micronutrients (mg/liter)					
	N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Phosphorus Tank 1	24.83	58.74	33.04	-	3.30	8.80	170	60	20	10	10	20
Calcium Tank 2	22.42	-	-	36.23	1.82	-	3710	1860	620	460	310	-

Fertilizers amounts for growth stage (per plot)

 Poly-Feed Stim ARMOR 15-15-30+ME+0.4Si 450.00 kg	 Haifa MAP - Mono Ammonium Phosphate 282.75 kg	 Haifa Mag / Magnisal Magnesium Nitrate 9.75 kg	 Haifa BitterMag Magnesium Sulphate 84.30 kg	 Haifa Cal GG Calcium Nitrate 113.25 kg	 Haifa Micro Combi 42.75 kg
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Amount








Establishment

Nutrient supply for crop

Stage	Days	Macronutrients(kg/ha)			Secondary Nutrients (kg/ha)			Micronutrients (gram/ha)					
		N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Establishment	20	20.00	10.00	20.00	10.00	4.00	6.53	500.00	250.00	82.10	61.39	40.68	150.00

Fertilizers per stage

Fertilizers application (ha/day)

 Poly Feed GG 17-10-27+ME (AN) 3.70 kg	 Haifa MAP - Mono Ammonium Phosphate 213 gram	 Haifa Mag / Magnisal Magnesium Nitrate 499 gram
 Haifa BitterMag Magnesium Sulphate 766 gram	 Haifa Cal GG Calcium Nitrate 1.89 kg	 Borax - Disodium Tetraborate Decahydrate 60 gram
 Haifa Micro Combi 296 gram		

Nutrigation system



Volume: **1000 liter**
Content: **Phosphorus**
Injection volume per day: **23.89 l/day**
Fertilizer concentration: **20 %**
Tanks per stage: **tanks**



Volume: **1000 liter**
Content: **Calcium**
Injection volume per day: **13.40 l/day**
Fertilizer concentration: **20 %**
Tanks per stage: **tanks**

Poly Feed GG 17-10-27+ME (AN)	156.20 kg
Haifa MAP - Mono Ammonium Phosphate	8.96 kg
Haifa BitterMag Magnesium Sulphate	32.32 kg
Borax - Disodium Tetraborate Decahydrate	2.51 kg

Haifa Mag / Magnisal Magnesium Nitrate	37.23 kg
Haifa Cal GG Calcium Nitrate	140.71 kg
Haifa Micro Combi	22.06 kg

Stock solution nutrients content:

Tanks	Macronutrients (gram/liter)			Secondary Nutrients (gram/liter)			Micronutrients (mg/liter)					
	N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Phosphorus Tank 1	27.63	21.09	42.17	-	5.17	13.77	160	80	20	20	10	320
Calcium Tank 2	25.72	-	-	37.29	5.77	-	1590	790	260	200	130	-

Fertilizers amounts for growth stage (per plot)

						
Poly Feed GG 17-10-27+ME (AN)	Haifa MAP - Mono Ammonium Phosphate	Haifa Mag / Magnisal Magnesium Nitrate	Haifa BitterMag Magnesium Sulphate	Haifa Cal GG Calcium Nitrate	Borax - Disodium Tetraborate Decahydrate	Haifa Micro Combi
370.40 kg	21.30 kg	49.90 kg	76.60 kg	188.70 kg	6.00 kg	29.60 kg

Amount

Vegetative growth

Nutrient supply for crop

Stage	Days	Macronutrients(kg/ha)			Secondary Nutrients (kg/ha)			Micronutrients (gram/ha)					
		N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Vegetative growth	30	104.49	44.92	121.29	33.00	13.01	0.00	750.00	375.00	117.51	87.01	56.51	180.00

Fertilizers per stage

Fertilizers application (ha/day)



Poly Feed GG 17-10-27+ME (AN)
14.97 kg



Haifa Mag / Magnisal Magnesium Nitrate
2.80 kg



Haifa Cal GG Calcium Nitrate
4.15 kg



Borax - Disodium Tetraborate Decahydrate
26 gram



Haifa Micro Combi
139 gram

Nutrigation system



Volume: **1000 liter**
Content: **Phosphorus**
Injection volume per day: **76.32 l/day**
Fertilizer concentration: **20 %**
Tanks per stage: **tanks**



Volume: **1000 liter**
Content: **Calcium**
Injection volume per day: **35.45 l/day**
Fertilizer concentration: **20 %**
Tanks per stage: **tanks**

Poly Feed GG 17-10-27+ME (AN) **192.68 kg**

Borax - Disodium Tetraborate Decahydrate **341 gram**

Haifa Mag / Magnisal Magnesium Nitrate **78.96 kg**

Haifa Cal GG Calcium Nitrate **117.11 kg**

Haifa Micro Combi **3.93 kg**

Stock solution nutrients content:

Tanks	Macronutrients (gram/liter)			Secondary Nutrients (gram/liter)			Micronutrients (mg/liter)					
	N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Phosphorus Tank 1	32.75	19.27	52.02	-	-	-	190	100	30	20	10	80
Calcium Tank 2	26.44	-	-	31.04	12.24	-	280	140	50	40	20	-

Fertilizers amounts for growth stage (per plot)



Poly Feed GG 17-10-27+ME (AN)

2246.10 kg



Haifa Mag / Magnisal Magnesium Nitrate

419.85 kg



Haifa Cal GG Calcium Nitrate

622.65 kg



Borax - Disodium Tetraborate Decahydrate

3.90 kg



Haifa Micro Combi

20.85 kg

Amount

start filling

Nutrient supply for crop

Stage	Days	Macronutrients(kg/ha)			Secondary Nutrients (kg/ha)			Micronutrients (gram/ha)					
		N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
start filling	30	122.72	55.56	150.00	33.00	13.24	0.00	750.00	375.00	115.74	85.42	55.09	180.00

Fertilizers per stage

Fertilizers application (ha/day)



Poly Feed GG 17-10-27+ME (AN)
18.52 kg



Haifa Mag / Magnisal Magnesium Nitrate
2.85 kg



Haifa Cal GG Calcium Nitrate
4.15 kg



Borax - Disodium Tetraborate Decahydrate
20 gram



Haifa Micro Combi
90 gram

Nutrigation system



Volume: **1000 liter**
Content: **Phosphorus**
Injection volume per day: **93.83 l/day**
Fertilizer concentration: **20 %**
Tanks per stage: **tanks**



Volume: **1000 liter**
Content: **Calcium**
Injection volume per day: **35.44 l/day**
Fertilizer concentration: **20 %**
Tanks per stage: **tanks**

Poly Feed GG 17-10-27+ME (AN) **195.09 kg**

Borax - Disodium Tetraborate Decahydrate **213 gram**

Haifa Mag / Magnisal Magnesium Nitrate **80.34 kg**

Haifa Cal GG Calcium Nitrate **117.12 kg**

Haifa Micro Combi **2.54 kg**

Stock solution nutrients content:

Tanks	Macronutrients (gram/liter)			Secondary Nutrients (gram/liter)			Micronutrients (mg/liter)					
	N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Phosphorus Tank 1	33.17	19.51	52.68	-	-	-	200	100	30	20	10	60
Calcium Tank 2	26.59	-	-	31.04	12.45	-	180	90	30	20	20	-

Fertilizers amounts for growth stage (per plot)



Poly Feed GG 17-10-27+ME (AN)

2777.85 kg



Haifa Mag / Magnisal Magnesium Nitrate

427.05 kg



Haifa Cal GG Calcium Nitrate

622.65 kg



Borax - Disodium Tetraborate Decahydrate

3.00 kg



Haifa Micro Combi

13.50 kg

Amount





Fruit filling

Nutrient supply for crop


Stage	Days	Macronutrients(kg/ha)			Secondary Nutrients (kg/ha)			Micronutrients (gram/ha)					
		N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Fruit filling	90	424.52	197.72	533.85	99.00	45.00	0.00	2250.00	1125.00	342.05	251.59	161.14	395.44

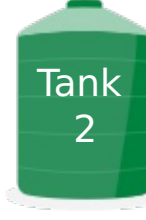
Fertilizers per stage

Fertilizers application (ha/day)

 Poly Feed GG 17-10-27+ME (AN) 21.97 kg	 Haifa Mag / Magnisal Magnesium Nitrate 3.23 kg	 Haifa Cal GG Calcium Nitrate 4.15 kg
 Haifa Micro Combi 42 gram		

Nutrigation system

 Tank 1
Volume: **1000 liter**
Content: **Phosphorus**
Injection volume per day: **112.11 l/day**
Fertilizer concentration: **20 %**
Tanks per stage: **tanks**

 Tank 2
Volume: **1000 liter**
Content: **Calcium**
Injection volume per day: **37.10 l/day**
Fertilizer concentration: **20 %**
Tanks per stage: **tanks**

Poly Feed GG 17-10-27+ME (AN) **195.96 kg**

Haifa Mag / Magnisal Magnesium Nitrate **86.96 kg**

Haifa Cal GG Calcium Nitrate **111.90 kg**

Haifa Micro Combi **1.13 kg**

Stock solution nutrients content:

Tanks	Macronutrients (gram/liter)			Secondary Nutrients (gram/liter)			Micronutrients (mg/liter)					
	N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B
Phosphorus Tank 1	33.31	19.60	52.91	-	-	-	200	100	30	20	10	40
Calcium Tank 2	26.48	-	-	29.65	13.48	-	80	40	10	10	10	-

Fertilizers amounts for growth stage (per plot)

			
Poly Feed GG 17-10-27+ME (AN)	Haifa Mag / Magnisal Magnesium Nitrate	Haifa Cal GG Calcium Nitrate	Haifa Micro Combi
9886.05 kg	1451.70 kg	1867.95 kg	18.90 kg

Amount

Total nutrient supply for season

Stage	Days	Macronutrients(kg/ha)			Secondary Nutrients (kg/ha)			Micronutrients (gram/ha)						Irrigation	
		N_Total	P2O5	K2O	CaO	MgO	SO4	Fe	Mn	Zn	Cu	Mo	B	Interval (Days)	Volume (m3/ha/day)
Transplanting	30	24.00	48.00	27.00	6.00	3.00	7.19	750.00	352.50	116.00	86.78	57.55	18.00	1	1
Establishment	20	20.00	10.00	20.00	10.00	4.00	6.53	500.00	250.00	82.10	61.39	40.68	150.00	1	1
Vegetative growth	30	104.49	44.92	121.29	33.00	13.01	0.00	750.00	375.00	117.51	87.01	56.51	180.00	1	1
start filling	30	122.72	55.56	150.00	33.00	13.24	0.00	750.00	375.00	115.74	85.42	55.09	180.00	1	1
Fruit filling	90	424.52	197.72	533.85	99.00	45.00	0.00	2250.00	1125.00	342.05	251.59	161.14	395.44	1	1
Total	200	695.73	356.20	852.14	181.00	78.25	13.72	5000.00	2477.50	773.40	572.19	370.97	923.44		

Total for season per plot

Stage	Transplanting	Establishment	Vegetative growth	start filling	Fruit filling	Total
 Poly Feed GG 17-10-27+ME (AN)	-	370.40 kg	2246.10 kg	2777.85 kg	9886.05 kg	15.3 ton
 Poly-Feed Stim ARMOR 15-15-30+ME+0.4Si	450.00 kg	-	-	-	-	450.00 kg
 Haifa MAP - Mono Ammonium Phosphate	282.75 kg	21.30 kg	-	-	-	304.05 kg
 Haifa BitterMag Magnesium Sulphate	84.30 kg	76.60 kg	-	-	-	160.90 kg
 Haifa Mag / Magnisal Magnesium Nitrate	9.75 kg	49.90 kg	419.85 kg	427.05 kg	1451.70 kg	2.4 ton
 Haifa Cal GG Calcium Nitrate	113.25 kg	188.70 kg	622.65 kg	622.65 kg	1867.95 kg	3.4 ton
 Haifa Micro Combi	42.75 kg	29.60 kg	20.85 kg	13.50 kg	18.90 kg	125.60 kg
 Borax - Disodium Tetraborate Decahydrate	-	6.00 kg	3.90 kg	3.00 kg	-	12.90 kg

Environmental Footprint

Environmental parameters

Environmental parameters	Haifa-fertigation	Topsoil application	Fertigation rating performance
Env. Footprint single score $\mu\text{Pt/Kg produce}$	2.50e+4	3.91e+4	EXCELLENT
Carbon footprint kg CO2 eq./Kg produce	1.48e-1	2.23e-1	EXCELLENT
N leaching kg NO3/Kg produce	2.03e-4	1.47e-3	EXCELLENT
N runoff kg NO3/Kg produce	1.96e-5	1.77e-4	EXCELLENT
N volatilization kg NH3/Kg produce	1.41e-4	2.79e-3	EXCELLENT
Eutrophication, freshwater kg P eq./Kg produce	6.79e-5	2.12e-4	EXCELLENT

*INDEX (Fertigation vs Topsoil)

EXCELLENT	BETTER	EQUAL	BAD	WORSE
>30%	10 to 30%	10 to -10%	-10 to -30%	<-30%

* % Difference between fertigation and topsoil application

NutriNet calculates the difference between the environmental footprint of fertigation programs compared to top-soil fertilizer application. In both cases NutriNet uses the same field characteristics, however, fertilizer composition is different and thus the overall values of the environmental footprint are different.