



# Plant-Prod MJ™

*Plant-Prod is plant productivity*

Plant-Prod® is the world leader in soluble fertilizers and the partner for growers where high productivity is vital.

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high productivity plant nutrition

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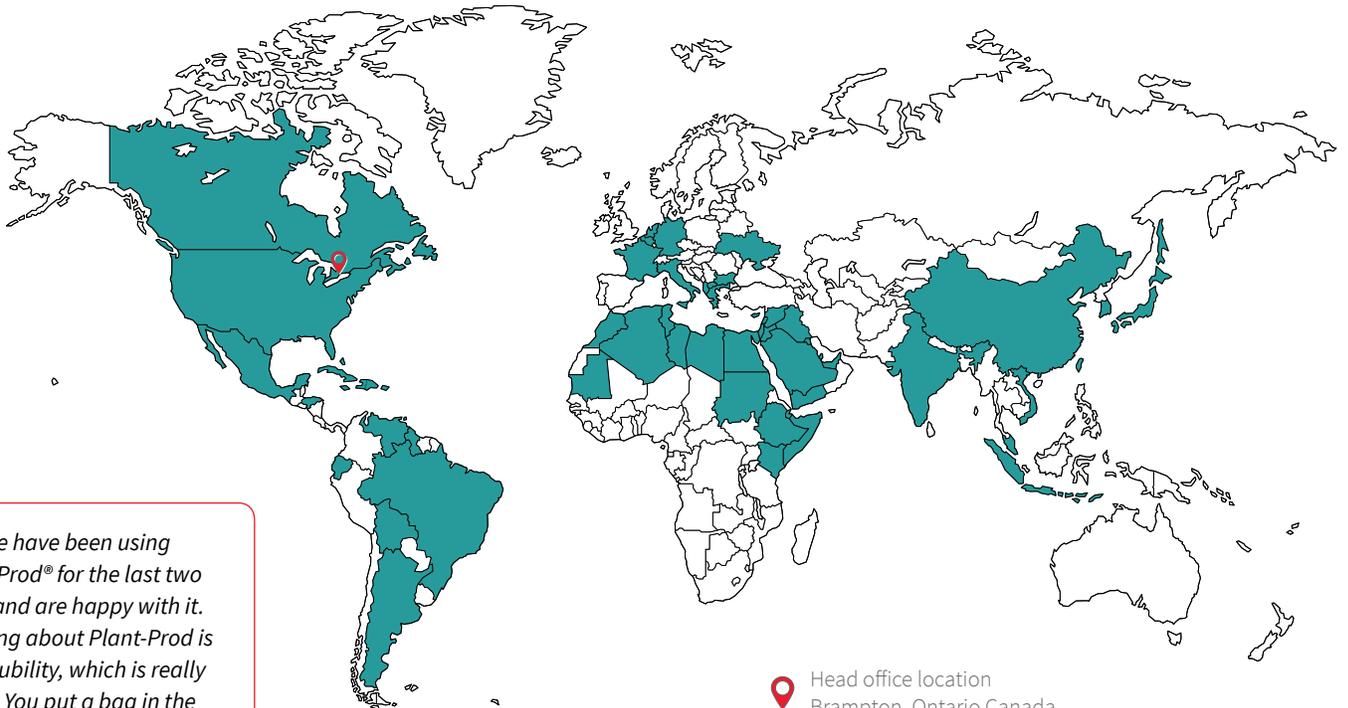
# Who we are

## Innovation backed by decades of experience

Plant-Prod® is the international leader in high quality water soluble fertilizer production. How do we do it? Start from the ground up. After over 70 years of experience, we have established and maintained relationships with the world's purest raw material suppliers. Every single product from start to finish goes through multiple quality control processes, allowing us to ensure the absolute best quality product, **every** time.

We have combined what we know best in nutrition, with our extensive knowledge of plant's requirements and created Plant-Prod MJ™ fertilizer line, specifically formulated for cannabis producers.

*"We've been using Plant-Prod® for a long time. We like them because the formulations are pure and complete. Really, whatever it tells you is in the bag is what you get when you're mixing the fertilizer, which is very important, so you know what you're using. Besides the quality product the customer service is what makes a difference for me"*



● Head office location  
Brampton, Ontario Canada

● Distribution of Plant-Prod Fertilizers

*"We have been using Plant-Prod® for the last two years and are happy with it. One thing about Plant-Prod is the solubility, which is really good. You put a bag in the water tank and everything just mixes and nothing sits at the bottom of the tank. We are a commercial grower so we keep an eye on the price point, but we would never compromise with the quality at all"*

# Overcoming compliance hurdles

## Compliant fertilizer means compliant buds

To licensed growers, compliance is everything. By using a consistent and compliant fertilizer, you can expect consistent growth of compliant buds. To help you better understand what a compliant fertilizer means, let's breakdown fertilizer regulation in North America:



### Canada

Fertilizers regulated on the federal level by the Canadian Food Inspection Agency (CFIA)

Registration only required for certain fertilizers

Exemption from registration does not mean exemption from regulation

Registered products approved based on label, QC procedures, heavy metal analysis, raw material information

Unregistered products must meet same standards as registered products; random testing in marketplace by CFIA Inspectors



### United States

Fertilizers regulated by state Agricultural Departments

Each state follows AAPFCO standards to some degree (Association of American Plant Food Control Officials)

Registration is generally required for all types of fertilizers; state dependent

Registered products approved based on product label

Registered products approved based on heavy metal analysis in some states

Random testing in marketplace by state agricultural departments

## Our promise remains the same

While registration requirements differ across each state in the United States, we maintain the same standards that are mandatory in Canada. Ensuring all our growers have the best quality product, every single time.

## Certificate of Conformity

We are proud to offer Certificates of Conformity (CofCs) for every type of product that we manufacture. These CofCs certify our compliance with the Acts and Regulations that our products are subject to.



# Quality control like no other

## The best quality, every single time

Our Quality Control and Assurance Procedures have been in place and continuously enhanced since 1945. These processes have assured that we deliver the best quality products, every single time. When you can rely on the quality and consistency of your nutritional inputs, you can rely on the quality and consistency of your crop.

## Quality starts from the ground up

While CFIA has recently outlined required details of QA and QC protocols for registered products, our practices have gone above and beyond for decades.

As the backbone of our fertilizers, our raw materials are sourced from the top producers in the world. Every source of raw material is tested and must meet our QC standards to be approved for use in our manufacturing. We receive and validate Certificates of Analysis for each batch that we receive.

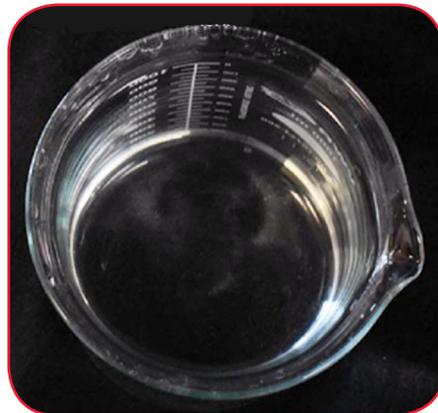
Every step in our production process is recorded and kept on hand for 3 years, including:

- Manufacturing conditions
- Production yields
- Retained samples from each batch
- Conditions of the product when produced

Random sampling and testing of our final products is done on a regular basis through a third-party laboratory to ensure unbiased representation of our production.



What we would **never**  
use in production



What we use in  
production

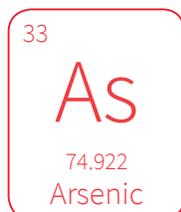
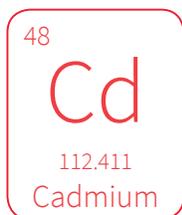
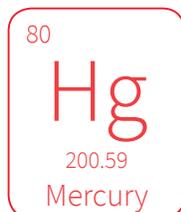
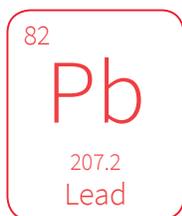
Monoammonium Phosphate (20% solution after 48 hours)

## We care about heavy metals just as much as you do

Licensed producers of cannabis are required to test their finished products for heavy metal contaminants. Plant-Prod® is pleased to make heavy metal analysis results available to growers for our Plant-Prod MJ™ line. When growers are aware of heavy metal levels in their crop inputs, they can anticipate potential levels within their buds.

Outsourced analysis of heavy metal concentrations:

Elements	Units	Plant-Prod MJ™					
		Grow	Boost	Bloom	Finisher	Cal Kick	Spike (CaMg)
Arsenic	ppm	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
Cadmium	ppm	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01
Chromium	ppm	<0.2	<0.2	<0.2	<0.2	<0.2	0.6
Cobalt	ppm	0.2	0.2	0.2	0.2	0.3	0.1
Lead	ppm	<0.5	<0.5	<0.5	<0.5	<0.5	0.2
Mercury	ppm	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05
Nickel	ppm	<0.2	<0.2	<0.2	<0.2	<0.2	0.3
Selenium	ppm	0.4	0.3	0.4	0.4	0.7	0.2



### *The problem with hyperaccumulators*

*Plants with the capability of accumulating heavy metals above concentrations that would typically cause harm or toxicity in plants are known as hyperaccumulators. Cannabis is a well-known hyperaccumulator with the ability to remove heavy metals contaminants from soils. This characteristic is desirable for soil remediation but troublesome when cannabis is grown for consumption.*

*If the nutrients you use are contaminated with heavy metals, your buds will be accumulating these heavy metals, exposing those who consume them.*

# Plant-Prod MJ™

## Media

A nutritional program that maximizes productivity begins with the right growing media. Start with a well-aerated and porous soil with a pH between 6 - 6.2 and an EC between 1 - 1.5 mmhos/cm. Routine monitoring of the pH and EC is highly recommended. Adjustments to fertilizer rates will be based on plant age, growth phase, water test analysis, temperature, humidity, pH/EC monitoring, and other factors.



## Propagation

To ensure effective propagation, dip cuttings into IBA rooting hormone (**Stim-Root®**) prior to planting to increase the number, quality and uniformity of roots per cutting. This proprietary rooting hormone is registered under the CFIA Fertilizers Act.



## Seedling Germination & Starting

Once roots are present, apply **Plant-Prod MJ™ Boost** at 0.5 g/L [0.07 oz/gal] (75 ppm N) once or twice to ensure adequate phosphorous levels. This will provide a good initial boost to the roots.

## Week 1

*For best results, customize to water conditions*

*Please contact your local Plant-Prod® sales representative for a water analysis.*



## Week 2-3



### Vegetative Growth

Lighting during this phase is generally 18-24 hours. Fertilize with **Plant-Prod MJ™ Grow** at 0.8-1.2 g/L [0.11-0.16 oz/gal] (100-150 ppm N) on a constant feeding schedule. If EC levels drop below 1, increase the feed to 200 ppm N. Monitor EC and pH during the full crop cycle.

Rotation with **Plant-Prod MJ™ Cal Kick** every second feeding is recommended. The requirement for this supplement should be determined by water sample results, provided by your Plant-Prod sales representative.



### Bud Set

Lighting should be switched to 12 hours on, and 12 hours dark. In order to help the plants set buds, or when the buds are pea sized, feed once or twice with **Plant-Prod MJ™ Boost** at 1g/L [0.13 oz/gal] (150 ppm N). Continue rotation with **Plant-Prod MJ™ Cal Kick** as needed.

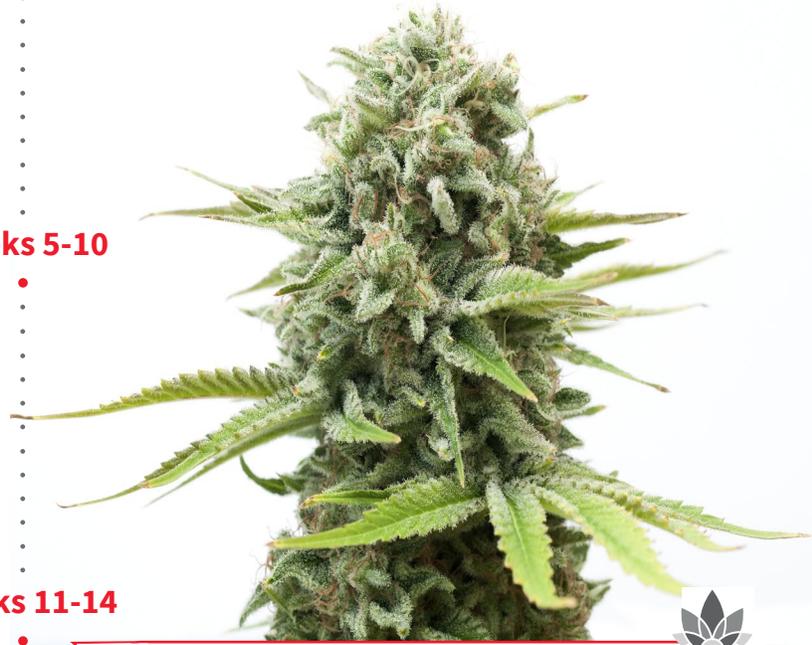
## Week 4



### Bud Sizing

Lighting should continue at 12 hours on, and 12 hours dark. Begin continuous feeding with **Plant-Prod MJ™ Bloom** at 1-1.5 g/L [0.13-0.2 oz/gal] (100-150 ppm N). This will encourage full bud set and enhance bud filling. Continue rotation with **Plant-Prod MJ™ Cal Kick** as needed.

## Weeks 5-10



## Weeks 11-14



### Finishing

**Plant-Prod MJ™ Finisher** will help with plant finishing when applied at 0.65 g/L [0.08 oz/gal] (25 ppm N, 185 ppm P<sub>2</sub>O<sub>5</sub>). The higher phosphorous and potassium will benefit the plants in their reproductive stage through to finishing. Switch to clear water 14 days before harvest.

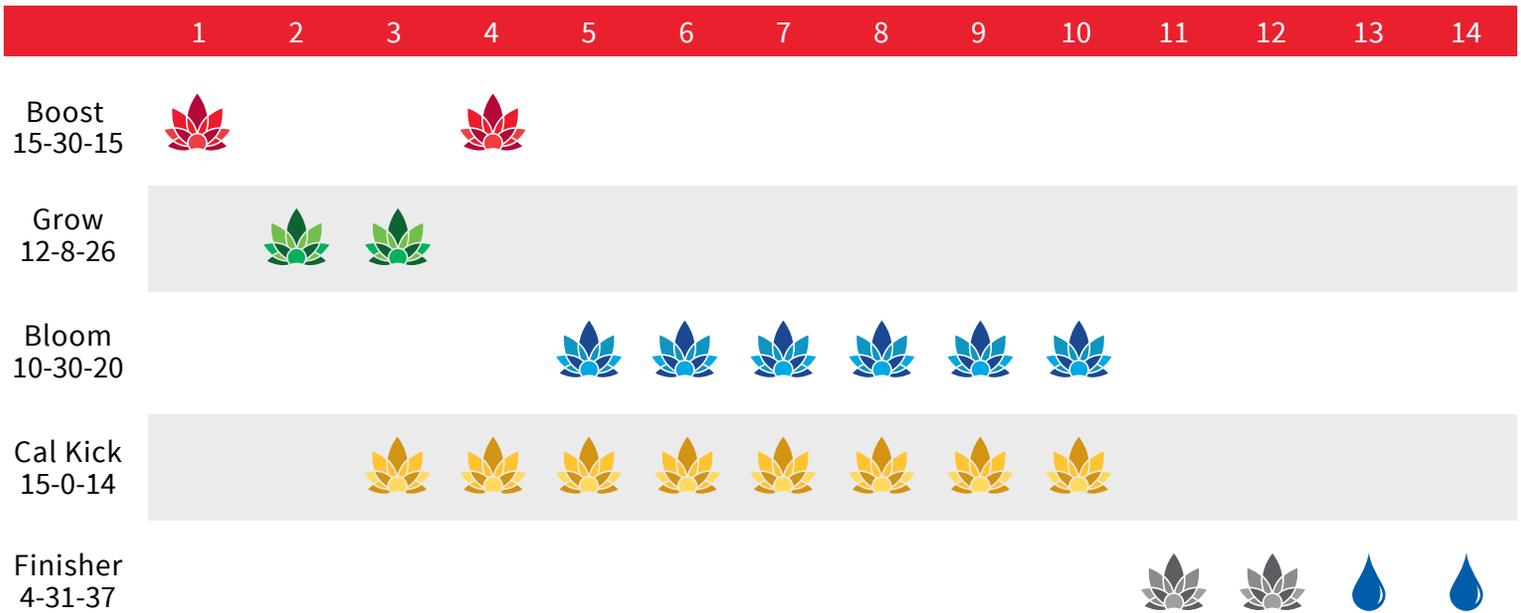


### Any Stage

**Plant-Prod MJ™ Spike (CaMg)** can be used throughout the production cycle in conjunction with any Plant-Prod MJ™ formulation, mixed in a separate tank. This completely chelated formulation of calcium (Ca) and magnesium (Mg) in a 2:1 ratio avoids the risk of interfering with bud formation, setting and sizing. Rate should be determined by water sample results. Consult your Plant-Prod sales representative for proper use.

# Program breakdown

Plant-Prod MJ™ Program Schedule by Week



Spike  
(CaMg)



Use as a supplement at any stage when extra calcium and magnesium are required.

*For best results, contact your local Plant-Prod® sales representative for appropriate rates and feeding schedule that best suits your water source and grow set-up.*

## Plant-Prod MJ™ Boost

Plant-Prod MJ™ Boost 15-30-15 is a high phosphorus formulation that supplies the necessary phosphorus for cannabis transplants and bud sizing. This highly soluble formulation has a low salt index and contains no sulphates or harmful chlorides, making it a very safe fertilizer for young transplants to initiate rapid root development. Adequate phosphorus is also required to initiate the stretch and bud formation. When plants are of a sufficient level of maturity or when buds are pea sized, feeding with 15-30-15 provides a boost of phosphorus to promote vigorous bud setting and sizing.

### Recommendations:

- Use in conjunction with Stim-Root Rooting Hormone Powder during propagation
- Feed during Week 1 to establish a healthy root system
- Feed during Week 4 to boost bud formation
- Feed in rotation with Plant-Prod MJ™ Cal Kick 15-0-14 as needed
- Potential acidity equivalent to: 341 kg (682 lb) of CaCO<sub>3</sub> per tonne (ton) of product

## Plant-Prod MJ™ Grow

Plant-Prod MJ™ Grow 12-8-26 is specifically formulated for the vegetative growth stage of cannabis plants. This ideal ratio of nitrogen, phosphorus and potassium promotes optimal growth to ensure a sufficient plant structure to support target yields. The added magnesium ensures no signs of deficiency. Grow contains an enhanced micronutrient package with additional EDDHA iron to ensure efficient uptake at a wide range of pH levels.

### Recommendations:

- Feed during Weeks 2 and 3 for steady growth
- Feed in rotation with Plant-Prod MJ™ Cal Kick 15-0-14 as needed
- Potential acidity equivalent to: 58 kg (116 lb) of CaCO<sub>3</sub> per tonne (ton) of product

### Guaranteed Minimum Analysis



Total Nitrogen (N)	15%
Nitrate Nitrogen	4.4%
Ammoniacal Nitrogen	5.9%
Urea Nitrogen	4.7%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	30%
Soluble Phosphorus	13.0%
Soluble Potash (K <sub>2</sub> O)	15%
Soluble Potassium	12.4%
Calcium (Ca)	0%
Magnesium (Mg)	0%
Sulphur (S)	0%
Chelated Iron (actual) (Fe)	0.100%
Chelated Manganese (actual) (Mn)	0.050%
Chelated Zinc (actual) (Zn)	0.050%
Chelated Copper (actual) (Cu)	0.050%
Boron (actual) (B)	0.020%
Molybdenum (actual) (Mo)	0.0005%
EDTA (chelating agent)	1.26%
EDDHA (chelating agent)	0%

### Guaranteed Minimum Analysis



Total Nitrogen (N)	12%
Nitrate Nitrogen	8.2%
Ammoniacal Nitrogen	3.8%
Urea Nitrogen	0%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	8%
Soluble Phosphorus	3.4%
Soluble Potash (K <sub>2</sub> O)	26%
Soluble Potassium	21.5%
Calcium (Ca)	0%
Magnesium (Mg)	2.5%
Sulphur (S)	5.1%
Chelated Iron (actual) (Fe)	0.250%
Chelated Manganese (actual) (Mn)	0.050%
Chelated Zinc (actual) (Zn)	0.050%
Chelated Copper (actual) (Cu)	0.050%
Boron (actual) (B)	0.020%
Molybdenum (actual) (Mo)	0.0005%
EDTA (chelating agent)	1.95%
EDDHA (chelating agent)	0.09%

# Flowering

## Plant-Prod MJ™ Bloom

Plant-Prod MJ™ Bloom 10-30-20 is an essential formulation to cannabis production. This high phosphorous, moderate potassium formulation encourages full bud set and improves bud filling. The added magnesium ensures no signs of deficiency. Bloom also contains an enhanced micronutrient package with additional EDDHA iron to ensure efficient uptake at a wide range of pH levels.

### Recommendations:

- Feed during Weeks 5-10 for optimal bud formation and fill
- Feed in rotation with Plant-Prod MJ™ Cal Kick 15-0-14 as needed
- Potential acidity equivalent to: 181 kg (361 lb) of CaCO<sub>3</sub> per tonne (ton) of product

## Plant-Prod MJ™ Cal-Kick

Plant-Prod MJ™ Cal Kick 15-0-14 is a high calcium formulation that should be used to supplement calcium when levels in water source are not adequate. Calcium is vital to plant rigidity and bud formation. When using reverse osmosis (RO) or city water, calcium levels are usually low and an additional source is required. This formulation contains a full micronutrient package with added EDDHA iron to avoid signs of deficiency when used in rotation. Contact your local Plant-Prod sales representative for a water analysis to determine if this product is required in your production program.

### Recommendations:

- Rotate with appropriate feeds during Weeks 3-10 as needed
- Requirement and rate to be determined following water analysis
- Potential basicity equivalent to: 160 kg (320 lb) of CaCO<sub>3</sub> per tonne (ton) of product



### Guaranteed Minimum Analysis

Total Nitrogen (N)	10%
Nitrate Nitrogen	5%
Ammoniacal Nitrogen	5%
Urea Nitrogen	0%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	30%
Soluble Phosphorus	13.0%
Soluble Potash (K <sub>2</sub> O)	20%
Soluble Potassium	16.6%
Calcium (Ca)	0%
Magnesium (Mg)	1.3%
Sulphur (S)	1.8%
Chelated Iron (actual) (Fe)	0.250%
Chelated Manganese (actual) (Mn)	0.050%
Chelated Zinc (actual) (Zn)	0.050%
Chelated Copper (actual) (Cu)	0.050%
Boron (actual) (B)	0.020%
Molybdenum (actual) (Mo)	0.003%
EDTA (chelating agent)	1.95%
EDDHA (chelating agent)	0.09%



### Guaranteed Minimum Analysis

Total Nitrogen (N)	15%
Nitrate Nitrogen	13.3%
Ammoniacal Nitrogen	1.7%
Urea Nitrogen	0%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	0%
Soluble Phosphorus	0%
Soluble Potash (K <sub>2</sub> O)	14%
Soluble Potassium	11.6%
Calcium (Ca)	11.0%
Magnesium (Mg)	0%
Sulphur (S)	0%
Chelated Iron (actual) (Fe)	0.250%
Chelated Manganese (actual) (Mn)	0.050%
Chelated Zinc (actual) (Zn)	0.050%
Chelated Copper (actual) (Cu)	0.050%
Boron (actual) (B)	0.020%
Molybdenum (actual) (Mo)	0.015%
EDTA (chelating agent)	1.97%
EDDHA (chelating agent)	0.05%

# Finishing & Supplementing

## Plant-Prod MJ™ Finisher

Plant-Prod MJ™ Finisher 4-31-37 is a cannabis specific finishing formulation with elevated phosphorus and potassium to encourage fullness and density of buds. During these last few weeks of production, this elevated potassium supports plant turgidity and disease resistance, while the phosphorus optimizes photosynthesis. The added nitrogen ensures no signs of deficiency.

### Recommendations:

- Feed during Weeks 11 and 12
- Follow with clear water for two weeks to flush nutrients prior to harvest
- Potential basicity equivalent to: 87 kg (174 lb) of CaCO<sub>3</sub> per tonne (ton) of product

## Plant-Prod MJ™ Spike (CaMg)

Plant-Prod MJ™ Spike (CaMg) has been specifically formulated to meet the high demands of cannabis plants throughout the entire production cycle. This fully chelated formulation provides ample amounts of calcium and magnesium in a desirable 2:1 ratio. The absence of nitrogen, phosphorus and potassium allows the use of this formulation at any stage of production without the risk of encouraging vegetative growth when undesired. Ideal for use with reverse osmosis (RO) or city water when calcium and magnesium levels are usually low.

### Recommendations:

- Supplement in addition to appropriate feed throughout production cycle
- Requirement and rate to be determined following water analysis
- Not compatible with other Plant-Prod MJ™ products, consult your Plant-Prod sales representative

### Guaranteed Minimum Analysis



Total Nitrogen (N)	4%
Nitrate Nitrogen	4%
Ammoniacal Nitrogen	0%
Urea Nitrogen	0%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	31%
Soluble Phosphorus	13.5%
Soluble Potash (K <sub>2</sub> O)	37%
Soluble Potassium	30.7%
Calcium (Ca)	0%
Magnesium (Mg)	0%
Sulphur (S)	0%
Chelated Iron (actual) (Fe)	0.100%
Chelated Manganese (actual) (Mn)	0.050%
Chelated Zinc (actual) (Zn)	0.050%
Chelated Copper (actual) (Cu)	0.050%
Boron (actual) (B)	0.020%
Molybdenum (actual) (Mo)	0.0005%
EDTA (chelating agent)	1.26%
EDDHA (chelating agent)	0%

### Guaranteed Minimum Analysis



Total Nitrogen (N)	0%
Nitrate Nitrogen	0%
Ammoniacal Nitrogen	0%
Urea Nitrogen	0%
Available Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )	0%
Soluble Phosphorus	0%
Soluble Potash (K <sub>2</sub> O)	0%
Soluble Potassium	0%
Calcium (Ca)	5.4%
Magnesium (Mg)	2.7%
Sulphur (S)	0%
Chelated Iron (actual) (Fe)	0%
Chelated Manganese (actual) (Mn)	0%
Chelated Zinc (actual) (Zn)	0%
Chelated Copper (actual) (Cu)	0%
Boron (actual) (B)	0.0%
Molybdenum (actual) (Mo)	0%
EDTA (chelating agent)	71.2%
EDDHA (chelating agent)	0%

# Customize your fertigation

*We are committed to helping our growers thrive, producing high quality crops*

Whether they achieve this with the use of our Plant-Prod® formulations, or through custom recipes, our goal remains the same. We offer the ability to produce customized blends to meet your specific needs.

Whether you have a recipe already perfected or theoretical parts per million that you wish to feed, we can take this information and formulate a blend that is ideal for your grow and set up. Instead of measuring out individual nutrients, you can dilute full bags or a tote. Ultimately, reducing the risk of error and over feeding. All available at no extra cost.

*Contact us today to see how we can improve your fertigation system*



# Reading your rates

## Electrical Conductivity and Fertilizer Concentration

By knowing the electrical conductivity (EC) of a fertilizer blend, you can predict the parts per million (ppm) of nutrients your plants are receiving, or that remain in your run off water.

Parts Per Million (ppm) Nitrogen	Plant-Prod MJ™ Electrical Conductivity (mmhos / mS)					
	Boost 15-30-15	Grow 12-8-26	Bloom 10-30-20	Cal Kick 15-0-14	Finisher 4-31-37	Spike (CaMg)
50	0.35	0.72	0.55	0.43	0.95	0.33
100	0.69	1.16	1.06	0.81	1.76	0.63
150	1.12	1.67	1.50	1.19	2.65	1.00
200	1.29	2.18	2.01	1.57	3.40	1.34
250	1.51	2.63	2.43	2.00	4.38	1.62
300	1.98	3.10	2.92	2.44	5.10	1.88

Note: The values on this chart were obtained under laboratory conditions using distilled water and a Plant-Prod® conductivity meter. The values obtained by the grower under field conditions could therefore vary slightly (+/-10%) from the values listed here.

## Measuring EC

Most meters used by our growers are calibrated in mmhos or mS, which are interchangeable units. The data given here on our fertilizers uses the same measurement. The following table can be used to measure the accuracy of fertilizer injector systems by following these steps:

- 1 Take a conductivity reading of clear irrigation water
- 2 Take a conductivity reading of final fertilizer solution
- 3 Subtract the conductivity reading value of clear water from the conductivity reading of fertilizer solution
- 4 Compare the answer found in 3 to the corresponding value in the table in order to find the concentration of fertilizer

**Example:** Conductivity of clear irrigation water is 0.60 mmhos / mS.

Conductivity of the final fertilizer solution using 10-30-20 is 2.05 mmhos / mS.

The conductivity due to the fertilizer is 2.05 mmhos / mS - 0.60 mmhos / mS = 1.45 mmhos / mS.

For 10-30-20, a conductivity reading of 1.45 mmhos / mS corresponds to a feeding rate of roughly 150 ppm of Nitrogen (N).

*Take your buds to the next level with  
high productivity plant nutrition*



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**Legal notice**

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