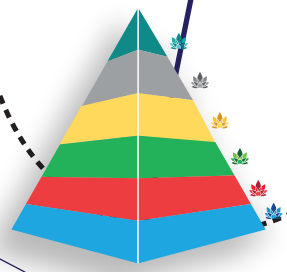
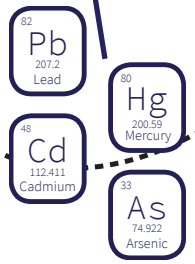

Plant-Prod MJ™


MAKE
SWITCH
GET 5X
MORE BUDS
WITH 80%
LESS FERTILIZER
& STAY COMPLIANT

YOUR ULTIMATE GUIDE
TO PLANT PRODUCTIVITY



Grow 5X more buds.



Listen to your plants

Spike your plant's Mg by supplementing with Plant-Prod MJ Spike (CaMg)

N Nitrogen

Nitrogen deficiency, early stage

Nitrogen deficiency, progressive stage

Nitrogen deficiency, late stage

P Phosphorus

Phosphorus deficiency, early stage

Phosphorus deficiency, progressive stage

Phosphorus deficiency, late stage

K Potassium

Potassium deficiency, early stage

Potassium deficiency, progressive stage

Potassium deficiency, late stage

Ca Calcium

Calcium deficiency, early stage

Calcium deficiency, progressive stage

Calcium deficiency, late stage

Mg Magnesium

Magnesium deficiency, early stage

Magnesium deficiency, progressive stage

Magnesium deficiency, late stage

S Sulfur

Sulfur deficiency, early stage

Sulfur deficiency, progressive stage

Sulfur deficiency, late stage

Listen to your plants

Fe
Iron

Iron deficiency, early stage

Iron deficiency, progressive stage

Iron deficiency, late stage

Mn
Manganese

Manganese deficiency, early stage

Manganese deficiency, progressive stage

Manganese deficiency, late stage

Zn
Zinc

Zinc deficiency, early stage

Zinc deficiency, progressive stage

Zinc deficiency, late stage

Keep your plants healthy & happy

Follow us to feed clean and grow green!

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Plant-Prod

Feed Clean, Grow Green.™

Plant-Prod MJ™ Program Schedule by Week

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boost 15-30-15	0.5 g/L			1 g/L										
Grow 12-8-26		0.8-1.2 g/L	0.8-1.2 g/L											
Bloom 10-30-20					1-1.5 g/L	1-1.5 g/L	1-1.5 g/L	1-1.5 g/L	1-1.5 g/L	1-1.5 g/L				
Cal Kick 15-0-14			0.45-0.9 g/L	0.45-0.9 g/L	0.45-0.9 g/L	0.45-0.9 g/L	0.45-0.9 g/L	0.45-0.9 g/L	0.45-0.9 g/L	0.45-0.9 g/L				
Finisher 4-31-37											0.65 g/L	0.65 g/L		

Spike (CaMg) — Use as a supplemental feed when water test results indicate that extra calcium and magnesium are required.

The A-B System

Are you used to a Part A-B system and unsure of how to implement the Plant-Prod MJ program? We promise the switch is easier than it looks.

Typical A-B systems separate calcium/magnesium containing formulations and phosphorus containing formulations. Consider Cal-Kick as your constant Part A, and the stage specific formulations, Boost, Grow, Bloom, and Finisher as your Part B.

Complete nutrient programs are broken into two parts due to product incompatibilities. Solubility of products and nutrient availability are affected when two incompatible products are combined and react to form insoluble compounds. An example of this would be diluting a product containing sulphur with a product containing calcium. These two products would react to form gypsum – insoluble calcium sulphate. Insoluble nutrient compounds won't be available to your plants and will clog your lines and emitters.

Concentrations of these products in dilution will affect the chance and severity of these reactions, which is why you may not see them in low concentration liquid feeds. Each Plant-Prod MJ formulation contains a complete micronutrient package to ensure no micronutrient deficiencies.

Talk to your local Plant-Prod sales rep about how to best introduce the Plant-Prod MJ Program to your growing set up.

Constant "Part A"

Plant-Prod MJ Cal-Kick

Weeks 3 - 10

Growth Stage "Part B"

Plant-Prod MJ Boost

Weeks 1 & 4

Plant-Prod MJ Grow

Weeks 2 - 3

Plant-Prod MJ Bloom

Weeks 5 -10

Plant-Prod MJ Finisher

Weeks 11-12

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. 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

- Start with Stim-Root® Rooting Hormone Powder during propagation
- Feed during Week 1 once roots are present 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 $CaCO_3$ per tonne (ton) of product**

Guaranteed Minimum Analysis

Total Nitrogen (N)	15%	Chelated Iron (actual) (Fe)	0.10%
Nitrate Nitrogen	4.5%	Chelated Manganese (actual) (Mn)	0.05%
Ammoniacal Nitrogen	5.8%	Chelated Zinc (actual) (Zn)	0.05%
Urea Nitrogen	4.7%	Chelated Copper (actual) (Cu)	0.05%
Available Phosphoric Acid (P_2O_5)	30%	Boron (actual) (B)	0.02%
Soluble Phosphorus	13.0%	Molybdenum (actual) (Mo)	0.0005%
Soluble Potash (K_2O)	15%		
Soluble Potassium	12.4%	EDTA (chelating agent)	1.26%

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 and 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 pH range.

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 (115 lb) of $CaCO_3$ per tonne (ton) of product**

Guaranteed Minimum Analysis

Total Nitrogen (N)	12%	Chelated Iron (actual) (Fe)	0.25%
Nitrate Nitrogen	8.2%	Chelated Manganese (actual) (Mn)	0.05%
Ammoniacal Nitrogen	3.8%	Chelated Zinc (actual) (Zn)	0.05%
Available Phosphoric Acid (P_2O_5)	8%	Chelated Copper (actual) (Cu)	0.05%
Soluble Phosphorus	3.4%	Boron (actual) (B)	0.02%
Soluble Potash (K_2O)	26%	Molybdenum (actual) (Mo)	0.0005%
Soluble Potassium	21.5%		
Magnesium (Mg)	2.5%	EDTA (chelating agent)	1.95%
Sulphur (S)	5.1%	EDDHA (chelating agent)	0.09%

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 pH range.

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: 167 kg (333 lb) of $CaCO_3$ per tonne (ton) of product**

Guaranteed Minimum Analysis

Total Nitrogen (N)	10%	Chelated Iron (actual) (Fe)	0.25%
Nitrate Nitrogen	5.2%	Chelated Manganese (actual) (Mn)	0.05%
Ammoniacal Nitrogen	4.8%	Chelated Zinc (actual) (Zn)	0.05%
Available Phosphoric Acid (P_2O_5)	30%	Chelated Copper (actual) (Cu)	0.05%
Soluble Phosphorus	13.0%	Boron (actual) (B)	0.02%
Soluble Potash (K_2O)	20%	Molybdenum (actual) (Mo)	0.003%
Soluble Potassium	16.6%		
Magnesium (Mg)	1.3%	EDTA (chelating agent)	1.95%
Sulphur (S)	1.7%	EDDHA (chelating agent)	0.09%

Plant-Prod MJ™ Cal Kick

Plant-Prod MJ™ Cal Kick 15-0-14 is a high calcium formulation that should be used as the main source of 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.

Recommmendations

- 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 (325 lb)of $CaCO_3$ per tonne (ton) of product**

Guaranteed Minimum Analysis

Total Nitrogen (N)	15%	Chelated Iron (actual) (Fe)	0.25%
Nitrate Nitrogen	13.5%	Chelated Manganese (actual) (Mn)	0.05%
Ammoniacal Nitrogen	1.5%	Chelated Zinc (actual) (Zn)	0.05%
Soluble Potash (K_2O)	14%	Chelated Copper (actual) (Cu)	0.05%
Soluble Potassium	11.6%	Boron (actual) (B)	0.02%
Calcium (Ca)	11.0%	Molybdenum (actual) (Mo)	0.015%
		EDTA (chelating agent)	1.97%
		EDDHA (chelating agent)	0.05%

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 couple 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 $CaCO_3$ per tonne (ton) of product**

Guaranteed Minimum Analysis

Total Nitrogen (N)	4%	Chelated Iron (actual) (Fe)	0.10%
Nitrate Nitrogen	4%	Chelated Manganese (actual) (Mn)	0.05%
Available Phosphoric Acid (P_2O_5)	31%	Chelated Zinc (actual) (Zn)	0.05%
Soluble Phosphorus	13.5%	Chelated Copper (actual) (Cu)	0.05%
Soluble Potash (K_2O)	37%	Boron (actual) (B)	0.02%
Soluble Potassium	30.7%	Molybdenum (actual) (Mo)	0.0005%
		EDTA (chelating agent)	1.26%

Plant-Prod MJ™ Spike

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 supplemental feeding of calcium and magnesium. Use should be limited to 2 times per week.

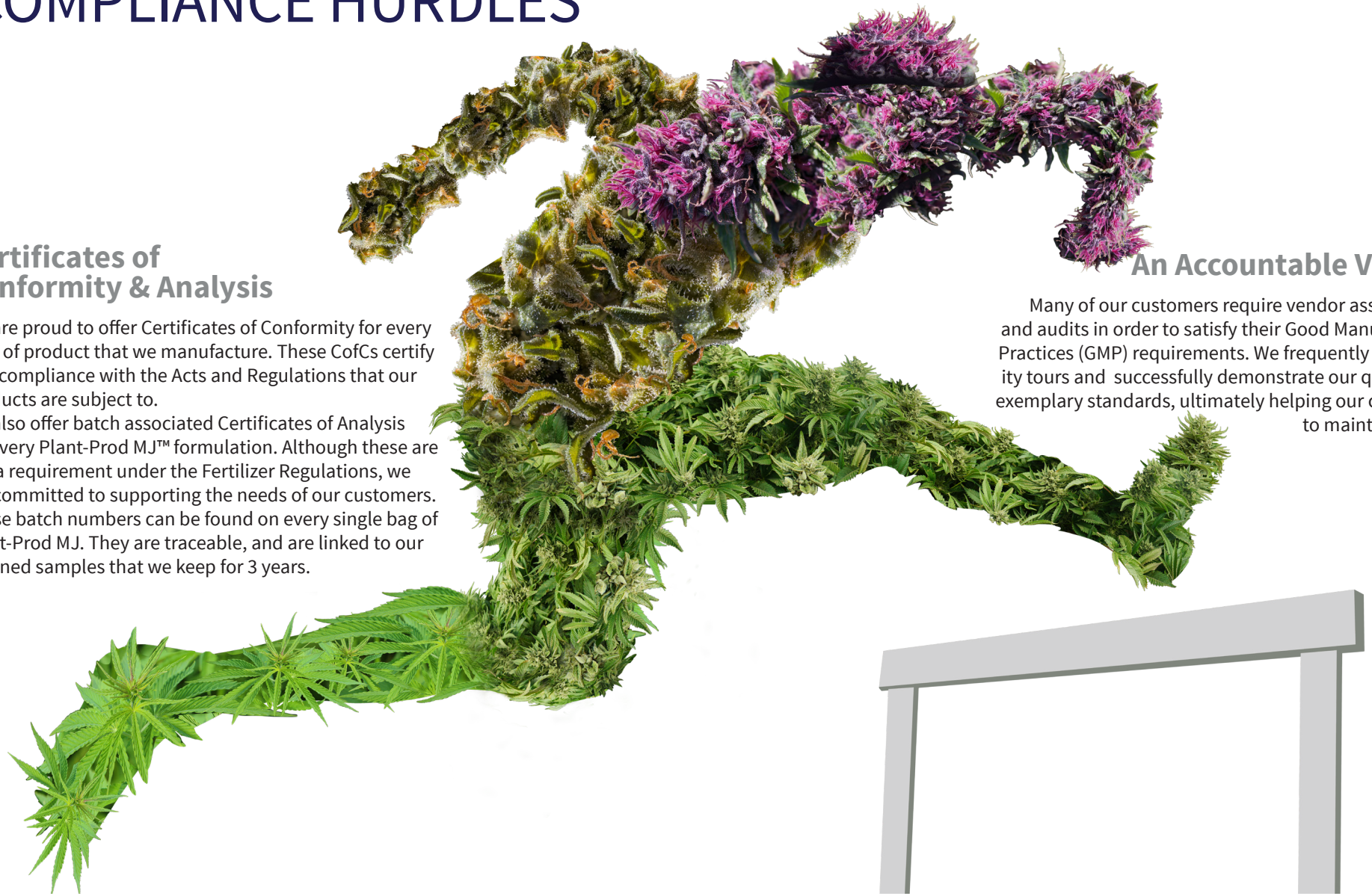
Recommendations

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

Guaranteed Minimum Analysis

Calcium (Ca)	5.4%	EDTA (chelating agent)	71.2%
Magnesium (Mg)	2.7%		

OVERCOME
COMPLIANCE HURDLES



Certificates of Conformity & Analysis

We are proud to offer Certificates of Conformity for every type of product that we manufacture. These CofCs certify our compliance with the Acts and Regulations that our products are subject to.
We also offer batch associated Certificates of Analysis for every Plant-Prod MJ™ formulation. Although these are not a requirement under the Fertilizer Regulations, we are committed to supporting the needs of our customers. These batch numbers can be found on every single bag of Plant-Prod MJ. They are traceable, and are linked to our retained samples that we keep for 3 years.

An Accountable Vendor

Many of our customers require vendor assessments and audits in order to satisfy their Good Manufacturing Practices (GMP) requirements. We frequently host facility tours and successfully demonstrate our quality and exemplary standards, ultimately helping our customers to maintain theirs.

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 may slightly vary (+/-10%) from the values listed here. EC values are available for reference on each product label.

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).

Fertilizer Rates & Concentration Values

In the horticultural industry, rates of fertilizers have traditionally been given in ppm N. This is because nitrogen is the most commonly found nutrient in fertilizer formulations, and because it allows us to state the concentration of a fertilizer solution independent of the fertilizer analysis. It is important to distinguish ppm N from total ppm, since total ppm typically refers to total dissolved solids, including those that are not coming from the fertilizer. When we refer to ppm N, we are referring to nutrient concentration coming from the fertilizer only.

Calculating Rates Based on ppm N

When preparing a fertilizer stock solution, it is important to know the injector ratio of your system. This refers to the amount of stock solution that is delivered for each increment of irrigation water that passes through the injector. For instance, a 1:100 injector ratio will deliver a final 100 gallons of dilute fertilizer solution for each 1 gallon of concentrated stock solution.

Other important factors include:

- Desired ppm you wish to feed of a specific element guaranteed in the fertilizer
- % of the element guaranteed in fertilizer
- Conversion constant determined by the units desired for your rate (see table below)

Rate Units	Conversion Constant
ounces per U.S. gallon	75
pounds per U.S. gallon	1200
grams per litre	10

$$\text{Rate (g/L, oz/gal, lb/gal)} = \frac{\text{Desired ppm} \times \text{Dilution Factor}}{\text{\% Element} \times \text{Conversion Constant}}$$

Example:
You want to feed **Plant-Prod MJ™ Bloom 10-30-20** at 150 ppm N, and your injector is set to 1:200. Your tank is 500 L and you want to know how many grams of fertilizer to add to your stock tank.

Let's list all the factors you know:
- Desired ppm N = 150
- Injector ratio = 200
- % of the element guaranteed in fertilizer = 10
- Conversion constant for g/L (see table above) = 10

Now let's put up scale to the full tank:

$$\text{Rate (g/L)} = \frac{150\text{ppm N} \times 200}{10\%\text{ N} \times 10}$$

$$\text{Rate (g/L)} = 300\text{g/L}$$

$$\text{Rate (g/L)} = 300\text{ g/L} \times 500\text{ L}$$

$$\text{Rate (g/L)} = 150\text{ kg / 500 L}$$

Now you know that you need to add 150 kg of **Plant-Prod MJ™ Bloom** to your 500 L stock tank to have a final fertilizer solution of 150 ppm N. Note that the ppm N in your stock tank will be 200 x this concentration since you have an injector system set to 1:200.

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	Plant-Prod MJ™ Boost	Plant-Prod MJ™ Bloom	Plant-Prod MJ™ Finisher	Plant-Prod MJ™ Cal Kick	Plant-Prod MJ™ Spike (CaMg)
Arsenic	ppm	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
Barium	ppm	0.24	0.08	0.16	0.91	8.3	1.13
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
Silver	ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

82 Pb 207.2 Lead

48 Cd 112.411 Cadmium

80 Hg 200.59 Mercury

33 As 74.922 Arsenic

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 metal 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.

WHY PAY TO SHIP WATER?

Plant-Prod MJ™

Find your nearest dealer: www.plantprod.com
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LEGAL NOTICE
The information provided by Master Plant-Prod Inc. is designed for ethical, government sanctioned medical marijuana grow operations. Master Plant-Prod Inc. does not encourage nor condone operations that are unlawful. All operations should adhere to the laws in the jurisdictions in which they operate.