

SUNSHINE Boosters™ - Complete Plant Nutrition Made Simple

SUNSHINE Boosters™ PRO - Complete Nutrition System Concentrated boosters for hydroponics

Using Sunshine Boosters Pro for DRAIN-TO-WASTE and RECIRCULATING SYSTEMS



What Is SUNSHINE Boosters™ Pro

SUNSHINE Boosters™ Pro is a patent pending complete plant nutrition system developed by Top Tropicals LLC based on more than 20 years of experience growing tropical plants.

Sunshine Boosters are amino-acid based scientifically engineered fertilizers. They contain all necessary elements for plants.

- elements in the right proportions,
- necessary elements for each stage of plant development,



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1-833-4-BOOSTERS (1-833-426-6783)

Florida: 13890 Orange River Blvd, Ft Myers, FL 33905
Arizona: 5024 S Ash Ave, Suite 106, Tempe, AZ 85282
SunshineBoosters.com

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- natural plant growth stimulants,
- additional carbon source.

Also, unlike other products, Sunshine Boosters does not contain:

- EDTA,
- excess salts, excess chlorides,
- ammonia salts, urea,
- potent plant stimulants,
- flavors or sweeteners

All of these components can easily evaporate when heated or in other ways affect the taste of products derived from plants.

Why We Recommend SUNSHINE PRO™ - Complete Nutrition System

It Works!

There are many reports on the use of SUNSHINE Boosters™ Pro for growing various plants. Visit our Blog to view success stories. <https://sunshineboosters.com/sbs/blog.html>

Very simple use

The basic set of boosters consists of four solutions, while you are using only three of them at the same time. You do not need to mix 10 or so different solutions. You don't need to control pH or EC, use additional solutions.

A complete set of elements

SUNSHINE Boosters™ Pro contain within only four cans all the elements that a plant needs, in the right proportions for each stage of plants development.

Advanced formula

We use a combination of reagents and additives that minimizes nutrients lockup in substrate. The use of amino acids and organic acids greatly enhances stability of all SUNSHINE Boosters™ Pro and provides excellent absorption of trace elements.

Safe use

SUNSHINE Boosters™ Pro contain a moderate amount of fertilizer, designed for continuous use; they have no excess salts and do not require additional substrate flushing.



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How To Use SUNSHINE PRO™ - Complete Nutrition System

DRAIN-TO-WASTE HYDROPONICS

Suitable for growing cannabis on coconut coir, perlite, special substrates such as SUNSHINE GROW MIXES (<https://sunshineboosters.com/sbs/grow-mixes.html>).

Cannabis Drain-to-Waste Feeding Chart

Drain-to-Waste	ml for 1 gal of water				
	Advantage-Pro	BoomBloom-Pro	Ca-Support-Pro	Constanta-Pro	Total
Seedling	5		5	2	12
Vegetative Growth	10		10	2	22
Transition	10		10	2	22
Early Bloom		10	10	2	22
Mid Bloom		10	10	2	22
Late Bloom		5	10	2	17
Ripening		5	10	2	1

Supplemental Instructions

- Never use hot or cold water for irrigation. Optimum temperature 70-75F
- Do not mix concentrated boosters. Dissolve boosters in water for watering.
- The shelf life of the nutrient solution is 6 hours.
- Give enough water for 10-20% runoff, and always remove runoff.

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f the daily air temperature when growing in a greenhouse / growbox / outdoors exceeds 80F, use clean water every second watering.

pH control

Maintain pH between 5.0-6.0. pH 5.5 is ideal for your plant.

In most cases, using tap water and SUNSHINE Boosters™ Pro do not require pH control.

When using RO / DI water, pH correctors will need to be added. Potassium carbonate to increase pH and nitric or phosphoric acid to reduce pH.



RECIRCULATING HYDROPONICS

Suitable for growing cannabis in any way involving re-circulation of the nutrient solution:

- Nutrient Film Technique (NFT) System
- Drip System with Recirculation
- Flood & Drain System (Ebb & Flow)

Cannabis Recirculating Feeding Chart

Recirculating	ml for 1 gal of water				
Stage	Advantage-Pro	BoomBloom-Pro	Ca-Support-Pro	Constanta-Pro	Total
Seedling	5		5	2	12
Vegetative Growth	20		10	2	32
Transition	20		10	2	32
Early Bloom		20	15	2	37
Mid Bloom		20	15	2	37
Late Bloom		20	15	2	37
Ripening		20	10	2	32

Supplemental Instructions

Temperature

Never use hot or cold water for irrigation. Optimum temperature 70-75F

The temperature of the solution for circulation should not differ from the temperature of the substrate with plants by more than 5-10 degrees. If the nutrient solution is very cold, this can lead to plant disease.

Nutrient Solution Preparation

Do not mix concentrated boosters. Dissolve boosters in water for watering.

Pour the required amount of water for recycling into a clean container, based on the volume of water, dose fertilizers according to the Feeding Chart table. Mix well.

pH control

Maintain pH between 5.0-6.5. pH 5.5 is ideal for your plant.

The acidity of the nutrient solution must be monitored before each watering! If you use automatic irrigation with a high frequency in small portions or if you use Water Culture, control the pH every 12 hours (morning and evening).



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Potassium carbonate to increase pH and nitric or phosphoric acid to reduce. We recommend that to lower the pH, use nitric acid in the Vegetative phase and phosphoric acid in the Bloom stage. Please! Check your pH meter for accuracy every day! Use commercially available calibration solutions / reagents to prepare them.

The conductivity of the solution (EC)

EC is a measure of the salt content of a solution.

As fertilizer is consumed from the solution, the EC will fall. Also, the conductivity and pH of the solution will change during storage, due to the interaction between the components of the fertilizer.

A conductivity meter with a scale of uS/cm or mS/cm is required for operation.

TDS meters showing salt concentration in ppm are not suitable! TDS meters are intended only to determine the salt content in tap water; in a fertilizer solution they will show incorrect values.

The conductivity of the solution is measured after adjusting the pH and before watering at least 2 times a day (morning and evening).

If the EC drops by more than 20%, it is necessary to change the solution for circulation.

In the case of using large volumes of solution for circulation, please contact Sunshine Boosters for technical support (<https://sunshineboosters.com/sbs/contact.html>).

For example: after adjusting the pH in a freshly prepared solution for circulation, the conductometer shows a value of 1200 uS/cm. If the reading falls to the level of $1200 - 20\% = 960$ uS / cm - the circulation solution must be changed.

Replacing the nutrient solution

If it is impossible to conduct a chemical analysis of the nutrient solution for circulation, it is recommended to completely replace the solution every 5-7 days. This is due to the selective absorption of nutrients from solution by plants.

Also, a visual control of the plant condition is carried out for signs of lack of elements - in case of signs of nitrogen deficiency (light color of young leaves), potassium (dry border of the leaf), phosphorus (purple tint of the leaf) - an early replacement of the solution for circulation is carried out.

Microbiological control measures

Any fertilizer solution is an excellent substrate for the development of microalgae, bacteria and molds. Algae - reproduce in areas exposed to sunlight - the walls of transparent tubes, the surface of pots, the walls of containers. They do not carry a special threat, except for physical clogging of the substrate and tubes. In the absence of light, they die.

Bacteria - are formed in the form of slippery deposits on the walls and roots of plants. A common cause is fluid stagnation. They can clog pipelines and contaminate the fertilizer solution. They are removed by drying and disinfection of infected surfaces.

Mold fungi - are formed in the thickness of the solution and on surfaces constantly in a humid environment - covers, the upper part of the pipes. They are removed with disinfectant solutions.

Periodic disinfection of the supply tank, pumps, and feed tubes in a Bleach solution is recommended.



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