

# Top 10 Best Use Practices for Growing Media & Cannabis

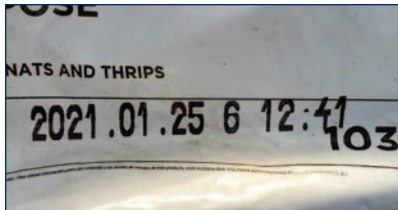
Some facts you should know when using growing media, whether you mix your own or use a pre-formulated blend.

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An interesting fact is that PRO-MIX is quite popular for cultivation of cannabis, both medical and hemp. Until recently, PRO-MIX was never promoted or advertised to these industries. Growers chose to use PRO-MIX from its popularity in the ornamental industry and its high quality, unique ingredients, such as BIOFUNGICIDE and MYCORRHIZAE. Growers often contact us asking questions or looking for assistance with growing medium.

## 1. Product age

Growing medium is best to use shortly after blending or receiving delivery when it's fresh. The "best use" of a typical packaged peat-based growing medium is eight to nine months during the summer months and 10 to 12 months through colder, winter months.



Product manufacture date is important to monitor the age of growing media.

Growing media doesn't "go bad," however, changes do occur with aged product. Changes include degradation of the wetting agent, draw-down of certain nutrients (if the blend has a starter nutrient charge) and activation of limestone if the product becomes wet. This can cause crops planted in aged growing medium to get off to a slower start. These processes occur more rapidly with hot storage temperatures. Cold and freezing weather can delay aging since microbes are less active.

The take-home message for aged product is that you may need to modify your cultural practices when planting in an older growing medium. The best way of knowing how to use aged product is to send unused samples to a laboratory for testing and discuss with the media manufacturer their recommendations to achieve the best growing results.

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## 2. Trying a new growing medium

This can be a source of headaches for many growers. The most difficult change to overcome is water requirements. Select a growing medium that has similar watering characteristics to what's currently used. Also, it would be best if it has the same appearance when it dries out, as many growers use the color of the growing medium to determine when to water. The adjustment is often most difficult for growers who are well familiar with their current growing medium.

Other considerations when switching: Will there be changes required in my fertility program? How will the limestone react and adjust the pH of the growing medium? What about the buffering capacity of the growing medium from the limestone?

Do a grow trial of a new growing medium. This way you can get accustomed to the watering and fertility needs before switching an entire crop. Also, keep in mind that switching growing medium may not always be a solution to a growing problem.

## 3. Use active ingredients

Bacteria and mycorrhizae are great active ingredients to have in your growing medium and cannabis crops respond very well to these microbials. Bacteria, such as *Bacillus pumilus*, suppress certain root pathogens so crops aren't challenged by root disease. Mycorrhizae is a beneficial fungus that attaches to the plant's root system and helps the plant to acquire certain nutrients and water that would be otherwise inaccessible. This enables the plant to grow better and produce more flowers.

## 4. Testing pH of unused growing medium



Frequent testing and recording allows you to verify the starting pH of unused growing medium.

Peat moss, the major component in most growing media, is acidic with a pH from 3.5 to 4.5. Limestone is added to neutralize the acidity of the peat to increase the pH upward to 5.5 to 6.2. However, limestone is a rock and needs time to break down from the moisture in the growing medium. The drier the growing medium in storage, the longer this will take.

It's not uncommon that a dry, unused growing medium of less than three months old can have a pH close to 5.0. To get the true starting pH of fresh, unused growing medium, take a sample of unused mix, saturate it with deionised water to make a paste and let it sit inside a plastic bag. Take pH readings at day 1, day 3 and day 7 to verify

the pH rise upward to the normal range.

A word about pH meters: Not all pH meters work well with porous, soilless growing medium. There are many types on the market and you get what you pay for. Testing the pH of a growing medium by sticking the probe directly in the root ball generally doesn't produce accurate readings. This is especially true of inexpensive metal probe pH readers. Avoid pH meters that "do not need to be calibrated" or cannot be calibrated. Inaccurate pH readings are problematic, as any corrective measures that are implemented because of the inaccurate pH may cause nutrition problems and crop damage.

The best meters are those that have glass probes that are stored wet and have at least a two-point calibration. Remember, pH readings are only as good as the last time the meter was calibrated. Use new, fresh buffer solutions and calibrate your meter often to be sure you're getting accurate pH readings of the growing medium.

## 5. Check the EC of the growing medium

If you're unsure of the fertilizer content, check with the growing media manufacturer for fertility levels. You can also check the electrical conductivity of growing medium with an EC meter, which measures the total dissolved salts in solution and is helpful for monitoring the overall nutrition status of the crop. An EC of 0.8 to 2.0 mmhos/cm (SME) is good range for crop fertility, which includes detection of up to 14 essential elements. Remember to calibrate the meter frequently to assure accuracy of the readings.

## 6. Crop nutrition

Most growing media contain a starter fertilizer charge that's designed to help with initial plant growth. Once in use, it generally lasts about one to two weeks, depending on the rate the manufacturer incorporates, how much water is applied to plants (volume/frequency), plant uptake and the age of growing medium. When first planting, water-in with a water-soluble fertilizer with about 100 ppm of N. If you water-in with fertilizer, this adjusts the nutrient level of the growing medium and will account for any imbalances or loss of nutrients in aged growing medium.

## 7. Fungal growth

Occasionally upon opening the growing medium packaging mold can be seen growing on the medium surface inside the package. No need to panic. These molds are saprophytic, meaning they live off dead plant material, such as bark, compost, peat moss or coir. They occur more frequently on composted components like bark and compost; they don't harm plants.

These molds often require high humidity and stagnant air to survive. If humidity is low and air flow is sufficient in the growing area, these molds die and do not reoccur.

## 8. Uneven crop growth

Crops sometimes grow unevenly where there are taller plants next to short plants. The cause is often lack of fertilizer application. Nutritional stress affects each plant differently within a crop. Some plants are a little stronger and continue to grow even with low nutrient levels, while others are weaker and stop growing. The problem is easy to solve by applying the appropriate fertilizer at the recommended rate. Verify that the correct amount of fertilizer is added to the stock tank and verify that the injector is working properly.

## 9. Growing medium doesn't dry out

The growing medium dries out slowly early in the crop cycle when the weather is cool and plants are small. If this is a recurring problem, consider a high porosity growing medium that holds less water and dries out faster. Increase airflow through the plant canopy by installing horizontal air flow fans. This will move stagnant, humid air out of the plant canopy and replace it with drier air found above the canopy.

Crop nutrition can be a contributing factor if plants are watered in with clear water and followed up with another clear watering. If the growing medium is fresh, the starter fertilizer charge will last about one to two weeks; however, if it's aged, the starter fertilizer charge is reduced so plants don't have access to the nutrients required to maintain active growth. The plant just sits there, doesn't use the water and is susceptible to overwatering and attack by root rot pathogens. To avoid this, water-in plants with a weak solution of water-soluble fertilizer.


## 10. Green slime on media surface



The most common source of algae is from irrigation water.

The green slimy layer found on the surface of the growing medium is algae. Algae can come from several sources, but the most common source is the irrigation water. Surface water sources—such as ponds, lakes or rivers—have the highest concentration of algae, but even sources from wells and municipalities contain algae.

Algae needs light, nitrogen and water to grow. You cannot take away light and nitrogen, as this compromises crop quality, but you can limit the time that the growing medium surface stays wet. Algae growth can be discouraged by allowing the growing medium surface to dry out between waterings. Other controls include selecting a growing medium that dries out more rapidly, such as a high-porosity growing medium or surface drench with peroxide-based products.

If you have questions about growing media, consult with the manufacturer to be sure you're well informed about the product's specifications, intended use and the expected results. Manufacturers can assist and provide technical support to be sure you get the best growing experience. 

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