

## Understanding vapor pressure deficit (VPD)

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Mastering the environment of a growing room is crucial. There are many issues that arise from an environment out of control, such as excessively high levels of mold or yeast. Due to these unwanted high levels of mold or yeast, the product must be gamma-irradiated in order to bring those levels back down to acceptable pharmaceutical standards. Unfortunately, using gamma irradiation comes with its own set of serious issues. Purplefarm is a consultancy company that fully understands the dynamics of growers struggling with environmental control, thus causing the undesired need for gamma irradiation.

Mitchell Alswiti of Purplefarm says that the consultancy company has helped hundreds of growers across Canada with environmental control in order to avoid gamma irradiation and its side effects.



Mitchell does an excellent job of detailing the key unfavorable consequences of using gamma irradiation on cannabis flowers and shares his discovery that one of the main struggles for growers in relation to achieving environmental control is managing Vapor Pressure Deficit (VPD).

## The importance of Vapor Pressure Deficit (VPD)

“When you are producing cannabis, your mold and yeast count have to be below a certain level as outlined by Health Canada,” he says. “A number of LPs do not reach that, and they have to send their product to be gamma-irradiated. When you send your product to be gamma-irradiated it cleans the flower of any microorganisms and sterilizes the end product, but it reduces the terpenoid level of the flower.” Mitchell states that this creates patient complaints regarding the lack of efficacy and flavor, and that is because the product has been gamma-irradiated. He goes on to say, “a grower can prevent having to gamma-irradiate by controlling the environment carefully. We have been able to guide other growers through this. One of the most important factors is to control the VPD – the rate of transpiration in plants. If you can control this during the early vegetative growth and through the late stages of bloom, you basically have mastered the environment in the cultivation room. This is due to controlling the humidifiers, dehumidifiers, the intensity of the lighting, the CO<sub>2</sub>, and so on,” he continues.

According to Mitchell, environmental control and sizing HVAC systems accordingly, is one of the most difficult challenges growers encounter. “It comes with experience,” he points out. “Experienced growers are able to provide HVAC contractors with vital environmental parameters in order to stay within favorable growing conditions with minimal environmental fluctuations. Powdery mildew and pests are some of the greatest challenges these grow rooms face today. VPD management is key to creating the perfect growing environment for your plants.”



## A growing medium for plant protection

Mitchell takes care to explain a viable solution to prevent and control thrips and aphids population from becoming unmanageable. “The Pro-Mix HP Bio-stimulant + Mycorrhizae growing media by PremierTech helps a lot with that,” he says. “It has bio-stimulants in it, which essentially protect the plant from aphids, thrips, fungus gnats, root diseases and algae. The bio-stimulant acts as a protection barrier.” In addition, Pro-Mix HP Bio-stimulant + Mycorrhizae growing media also affects the plant growth by reducing the time that the plant stays in vegetative state. “This is especially thanks to Mycorrhizae. The symbiotic relationship in the growing media allows to enhance nutrient uptake, resulting in stronger, healthier crops. You can essentially shave a whole week off your vegetative growth, which means less risk to crop failures, quicker crop cycles and an overall greater return of investment. The cannabis plant really enjoys being in this kind of media.”



## Being in tune with the equipment

An important factor that affects a growing room environment is the lighting system in use. “You have HID and LED,” Mitchell states. “They both require special attention when trying to control the VPD. I personally find it easier to control on HID light systems. As long as you are able to control VPD while making the switch to LEDs it’s not a problem, but you need to be in tune with your equipment if you want to be in control. For someone not in tune with the hardware, they will have a harder time. To understand how VPD works, you just need to know how well your environmental controls work.”

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