

Which is superior: vented or sealed production?



Cannabis growers have two main choices when it comes to ventilation: vented or sealed. **Thomas Walker** explains the pros and cons (and correct application) of each option.

In the planning phase of your growing operation, you will have to choose between a vented or sealed growing environment.

VENTED ROOMS

Typically, a vented environment maintains temperature and humidity by pulling in air from the outside, distributing it in the growing chamber, and venting it back outside.

There are many variations of the vented grow room, but for the sake of this article I'll keep it simple.

• Advantages

A vented system is much cheaper to set up and maintain than a sealed one.

A basic vented set-up consists of only one extraction fan on the exhaust side. More sophisticated arrangements use an additional intake fan to force air inside instead of air being passively drawn in.

Adding a fan controller with a temperature probe and idle speed control will cut the cost of operation, reduce noise levels and extend the life of a carbon filter. It will also provide more precise temperature control.

• Disadvantages

As mentioned, a vented system uses the air from the outside to cool and dehumidify the growing area.

For a vented set-up to operate correctly, the air introduced from the outside needs to be cooler and less humid than the air on the inside.

Bringing in hot, damp air from the outside can make it difficult to maintain a suitable growing environment, and therefore particular attention needs to be paid to the weather outside before selecting the vented method.

The air vented into the growing chamber can also introduce pests

and pathogens. For this reason, the intakes of vented systems should be equipped with a 150-micron filter at a minimum.

Pathogens can also be screened out, but this requires a high-efficiency particulate air (HEPA) filter and large fans to counter the loss of air throughput.

SEALED GROW ROOMS HAVE VIRTUALLY NO AIR EXCHANGE WITH THE OUTSIDE

Another threat brought about by employing a vented set-up is male cannabis pollen spores. Cannabis that has been pollinated produces seeds and is of lower quality, and growers should therefore make every effort to avoid these spores. The source is mostly likely to be other cannabis production facilities or home growers. Cannabis pollen can be transported on the wind for kilometres.

Vented arrangements are not well-suited to carbon dioxide supplementation. Any carbon dioxide introduced to the growing area will be quickly removed by the exhaust fan, giving the plants no chance to absorb it.

SEALED ROOMS

Sealed grow rooms, in contrast to vented systems, can be built in indoor grow areas and in certain greenhouses. These grow rooms have virtually no air exchange with the outside.

Temperature and humidity are tightly controlled by heating,

ventilation and air-conditioning (HVAC), or air-conditioning and dehumidifiers/humidifiers.

• Advantages

If given a choice, most cannabis growers would select a sealed room system. This is mainly because of the precise control over the environment and other variables. Temperature and humidity can be set on an environmental controller and the HVAC and dehumidifiers/humidifiers will take care of the rest.

Carbon dioxide is best utilised in a sealed room set-up, as all of the carbon dioxide can be absorbed by the plants. The carbon dioxide is not vented out and a maximum of 1 200 parts per million can be maintained, ensuring maximum absorption.

In addition, infiltration of pollen, pathogens and pests is almost completely eliminated.

• Disadvantages

Setting up a sealed growing area is considerably more expensive than a vented set-up. The cost of HVAC, dehumidifiers, humidifiers, and environmental controllers needs to be factored in. In addition, the running costs for all the associated equipment will form part of the cost of production.

CONCLUSION

I suggest that every beginner in cannabis production start his or her journey with a vented set-up, as this will provide the experience required to eventually operate a sealed room environment.

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