

WHAT TO AVOID

When Starting a Cannabis Operation

These are some of the most costly and time-consuming mistakes made when starting a cannabis greenhouse.

BY DAVID KUACK

As an increasing number of states legalize medical and recreational cannabis, more growers may be contemplating producing this crop. Here are some factors to consider as you determine what's needed to successfully grow cannabis in a greenhouse.

1. Not having an experienced grower or grow consultant on the greenhouse team.

One of the biggest mistakes made when planning to produce cannabis is not having a grower or a grow consultant who can help drive the decision making and the greenhouse design.

"Not having this experienced person on board is going to create a lot of challenges for everyone involved," says Nadia Sabeh, president of Dr. Greenhouse in Sacramento, California. "This is going to be especially challenging for the consultants and/or engineers hired to design the various greenhouse systems if a grower or grow consultant is not on board. An experienced grower or grow consultant can help make the critical decisions related to irrigation, lighting and environmental control systems."

When growing in a greenhouse Sabeh says it is more important that the grower has experience in greenhouse production, regardless of the crop, rather than with growing cannabis indoors.

"The successful cannabis greenhouse projects that we have worked on have had a grower or grow consultant who has come from ornamentals, vegetables or some other ancillary crop," she explains. "Greenhouse growers understand the various elements they are going to experience in a greenhouse. They understand what daily light integral is and how that shifts during the seasons. They are more comfortable and familiar with the variability that occurs in a greenhouse."

According to Sabeh, an experienced indoor cannabis grower is used to a consistent environment every single day of the year. "Indoor cannabis growers who are using high-pressure sodium lamps know that they are always putting out the same amount of light every single time the lights are turned on," she says. "I have seen indoor cannabis growers hired to grow greenhouse cannabis have difficulty managing the crops and adjusting different crop inputs based on changing weather conditions."

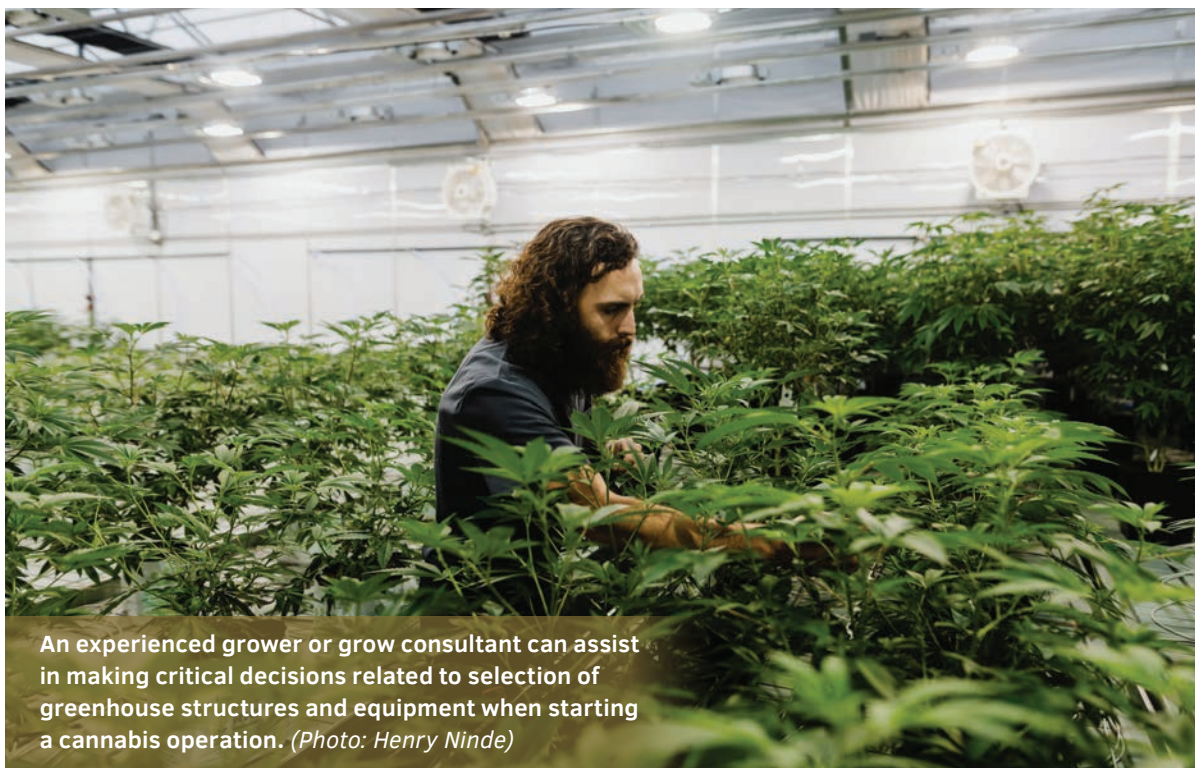
Sabeh is quick to point out that indoor cannabis growers can learn to grow in a greenhouse. She says they need to be given the time to learn and experience the changing seasons in a greenhouse in order to figure out how to manage the plants. "Those growers experienced in greenhouse production of crops other than cannabis will also need time to become familiar with the intricacies of growing cannabis," she adds.

"Regardless of their experience, the growers need time to learn the intricacies of the greenhouse and the growing techniques to grow the crop. Because of the planning, developing and designing associated with a greenhouse, the experienced greenhouse grower is going to do better initially than the experienced indoor cannabis grower."

2. Not fully considering the implications of the greenhouse site location.

Another big mistake is not considering the site of the greenhouse. The greenhouse location is going to affect the ability to control crop growth as well as being able to control the inputs needed to produce the crop.

"The greenhouse environment is susceptible to the weather conditions," Sabeh says. "Growers need to understand the geography of the location in terms of what systems are needed to control the crops. Will supplemental lighting be needed? If so, will it be high-pressure sodium or LEDs?"



An experienced grower or grow consultant can assist in making critical decisions related to selection of greenhouse structures and equipment when starting a cannabis operation. (Photo: Henry Ninde)

“Also, is there a source of natural gas to heat the greenhouses or will the grower have to rely on propane or diesel to be delivered because the facility is situated in a rural location? Water quality and the source of water can be another big issue. The source of water, be it from a well or municipal water, is important and frequently overlooked when a site is selected.”

3. Not asking questions about the proposed greenhouse structure and systems.

Another reason to have an experienced grower on staff or to hire a grow consultant is to review proposed greenhouse designs and systems submitted by greenhouse manufacturers.

“A lot of greenhouse manufacturers offer standard turn-key structures and systems,”



Choosing a suitable greenhouse location will affect the ability to control crop growth and the inputs needed to produce the crop. (Photo: Wheatfield Gardens)

Sabeh says. “Too frequently I have seen the same exact greenhouse system being proposed in Michigan, Oklahoma and Florida. Those are totally different climates. I would choose a different glazing and cooling system depending on the geographic location.”

Sabeh recommends having someone else not affiliated with the manufacturer look at the



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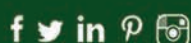


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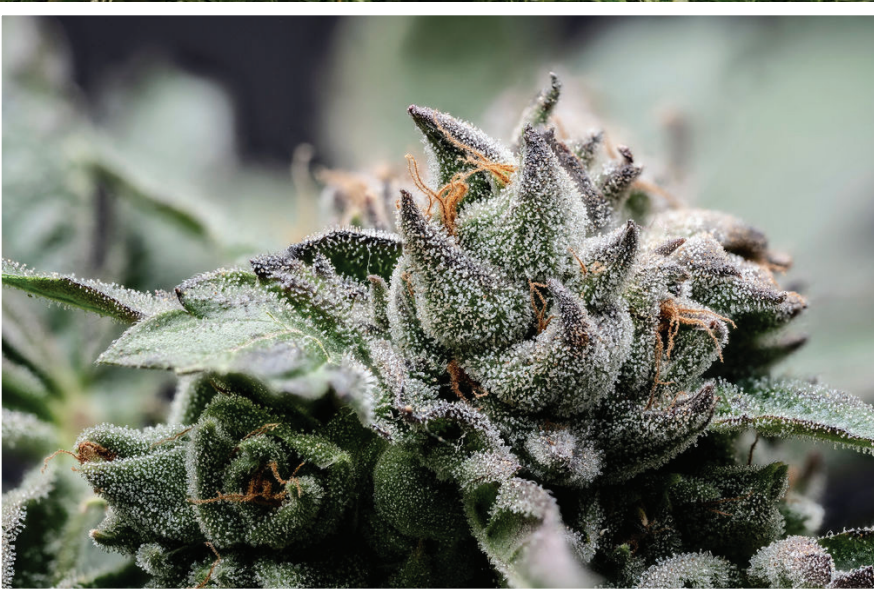
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Having an experienced grower on staff or hiring a grow consultant can help ensure that proposed greenhouse designs and systems are properly reviewed before any construction begins. (Photo: Henry Ninde)



Trying to replicate an indoor grow controlled environment in a greenhouse is one of the biggest and costliest mistakes that can be made when starting a greenhouse cannabis operation.

(Photo: Henry Ninde)

proposed greenhouse and systems. This type of review can help ensure the structure and equipment can produce the crop quality the grower is trying to achieve.

“Having an experienced greenhouse grower who is more familiar with greenhouse systems can help ensure the right types of questions are asked. An indoor grower is familiar with using high pressure sodium lights and knows they grow good cannabis crops. However, in a greenhouse, depending on location, supplemental lights may not even be needed.”

4. Trying to replicate the controlled environment of an indoor facility in a greenhouse.

Sabeh says trying to produce an indoor grow controlled environment in a greenhouse is one of the biggest and costliest mistakes that is made.

“This would be a very capital- and energy-intensive effort considering just the climate management alone,” she explains. “Trying to create the precisely controlled temperature, humidity and vapor pressure deficit from an indoor facility in a greenhouse would literally require sealing up the greenhouse.

Sabeh says one of the main reasons a greenhouse is chosen is to take advantage of the sunlight. The sun not only produces light, but it also produces a lot of solar radiant energy. “Sealing up a 30,000-square-foot greenhouse like a warehouse and trying to circulate and cool the air, the cost for the air conditioning could be as much as \$2.5 million. For a 30,000-square-foot indoor facility the cost would be a few hundred thousand dollars.”

The production rate of photosynthesis is directly related to the plants access to sunlight, temperature and carbon dioxide.

“If these variables are pushed a bit higher, the temperature in a greenhouse can be increased because the light levels are higher so the DLI is higher,” Sabeh says. “Cannabis growers may actually be able to achieve a higher yield and a higher quality product if they know how to manage the crop and the greenhouse. Allowing the plants to be exposed to different levels of sunlight under slightly varying temperatures and humidity levels over the course of the production season can actually produce a better quality crop.” *gpn*

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