



CREATING A FOUNDATION FOR CONTROLLED EXPERIMENTS

When operating a cultivation facility, it's not only important to put serious consideration into the layout and design, but also to maintain the flexibility to tweak the factors that affect performance and the ability to adapt for increased productivity. However, without minimizing the effects of outside factors, it's impossible to accurately measure the variables and improve on the quality of your product.

With Excel Air Systems technology, this process of removing the impact of unwanted variables for a regulated environment creates the perfect foundation for controlled experiments to then be conducted.

TRADITIONAL METHODS ARE OUT OF SEASON

Before sealed room facilities, depending on the season, crops grown in greenhouses varied dramatically from the effects of moisture, humidity, temperature changes, poor air quality, and insect infestation.

The presence of so many uncontrolled factors necessitated that growers set output benchmarks to better predict yield expectations based on these probabilities and avoid unprofitable ventures.



For example, if someone was to first run an experiment in their greenhouse during summertime, they might determine that, in a growing cycle, they could achieve a harvest of around 100 lb. of dry product, valued at a certain monetary amount.

Then, for the next cycle, in autumn, they might decide to supplement their greenhouse with lamps to provide more light and improve growth, resulting in a harvest of 125 lb. of dry product. While initially it might seem easiest to assume that this extra 25% of crop production is attributable to the lights, it's now a different season – with lower temperatures, overnight dew, increased rain, and different insect activity – so this test is not controlled and therefore not the same.

Then, perhaps in the third round, in winter – with cold, damp weather and harsher temperatures – there are now mildew problems and other seasonal climate-related issues, resulting in a harvest of just 50 lb. of dry product. In this case, the same lamps have been utilized and identical protocols were followed, but the result is a significantly less profitable yield.

VENTING YOUR FRUSTRATIONS

In the past, we've had customers who used venting to bring in outdoor air and save energy costs during the winter, despite the difference in humidity.



Sometimes, they would cultivate unusually large harvests and congratulate themselves in premature celebration, but then the next time, with the exact same set-up, they would only get a third of the yield and become frustrated, as the environment was completely different. In these instances, they would blame the plants as a factor, instead of the obvious variables.

These extreme variances raise questions about whether or not the additional lighting or venting provided much benefit, or if ambient temperature changes are merely responsible for the differences. But without managing these factors, there's no way to accurately determine the answer.

TAKING CONTROL OF THE SITUATION

With these sorts of situations in mind, it's evident that having controlled experiments is important to measure all the factors with standardized scientific testing protocols. Sealed room facilities provide this ability by allowing you to have a consistent environment 24 hours a day, 365 days a year.

Being able to count on relatively consistently identical input and output can help determine projected expenditures in any business, and can thereby help you determine if potential endeavors are worthwhile.

THE POSSIBILITIES ARE ENDLESS

More opportunistically, beyond simple confirmation of profitability, sealed rooms also provide you with the proper, solid foundation to run every imaginable experiment that you've ever wanted to, while assured that temperature and humidity levels are dialed in and not inhibiting variables.



This innovative, controlled experience lets you test what works based on other, locked-in factors, while not allowing anything in from the outside to affect the scenario, and vice versa. The versatility of Excel Air Systems' technology even allows for the possibility of running dual experiments within the same room.

For example, you could configure one half of the room one way and the other half another, then swap these sides for the next round.

If this leads to similarly successful results, then you know that you're on to something in your process. Sealed room systems eradicate troubling speculative variables from the process and remove all doubt.

GROWING INCREASINGLY SUCCESSFUL

Once a facility has been effectively sealed, the many added benefits become apparent immediately. What's most notable is how this creates a foundation for improvement of lighting, nutrient levels, temperature, humidity, and the overall quality of your facility, so that UV or other contamination is dealt with.

This also allows you to set up strain-specific quadrants, with certain different product strains in each, to fully utilize production capabilities.

In gaining the ability to dictate exactly what you want, when you want it, you can improve upon previous approaches to increase production success, with each new cycle's yield turning out as good as, if not better than, the last.

With this incremental improvement, if for example, in every cycle, you are able to achieve a 5% better yield than in the previous cycle, then, after five cycles, the result is a 25% compound effect, which is definitely more than modest business development. Continuing at this rate, if you're able to increase your business by 5% each year indefinitely, then you're doubling every five years, which is phenomenal over time.



QUALITY OVER QUANTITY

While this sort of increase in the total weight of product harvested is certainly impressive, the quality of the product itself cannot be underestimated as an even better indicator of success because in today's market, quality sells.



As we observed with the explosion of the cannabis industry, many huge conglomerates wasted no time in jumping on the bandwagon of producing a massive abundance of product, but not in controlled spaces.

Without any quality guarantee, there was no certainty that anybody wanted to purchase their product, and any market scenario where the supply of product far exceeds its demand naturally leads to a substantial fall in price.

In this market glut, if these cannabis producers weren't willing to discount their excess product, they weren't able to sell it, meaning some of the largest companies had to write off millions of dollars of old, unsold product and incur significant financial losses.

DON'T GROW IMPATIENT

We've also known of individuals who would be operating a certain type of grow room (with a specific set-up), but after becoming impatient with the results, and hearing of a colleague or competitors' successful yield, they would then erratically re-do their entire set-up in their next cycle, effectively starting all over again from scratch.

Sometimes, they were lucky in their approach and this spontaneous overhaul facility worked, but more commonly, they were not so fortunate and it did not. There was no effective way to know what was working or not, because it was far too random. They had simply heard rumors or ideas that they could do better, and did not have the patience or equipment to conduct any scientific testing or data, and they were not using controlled environments. By changing too many parameters at once, they were unable to measure with any certainty what the defining factor was.

In contrast to these rash approaches, improvements in yield, quality, and efficiency gains for a better crop can be attained through controlled experimental tactics, such as plucking or de-leaving plants in certain sections or adjusting photosynthesis techniques to compare results. By breaking down product qualities into different aspects (such as taste, appearance, and scent), data and analytics can be utilized for incremental enhancement over each iteration.



PRACTICE MAKES PERFECT

Cannabis producers often make the mistake of attempting to keep up with the rapidly changing trends of whatever strain is most popular in the moment, but focusing on producing the same strain for an entire year would be more beneficial.



If they were to grow the same product repeatedly in that time, they would then have five reliable data sets, recording what nutrients were fed and when they were fed, with weekly or daily crop gradings. After compiling and analyzing this data, they could potentially devise the ultimate recipe for that strain, which could be so masterfully crafted that even someone who has never grown it could then follow to success.

Then, taking the process a step further, producers could begin to curate specialized strains specifically for the easing of an exact ailment, such as the need to sleep longer or to feel more energized, and treatment for diseases like diabetes.

Exploring these potential properties is quite feasible within a controlled environment.

SEALING YOUR FATE WITH EXCEL AIR SYSTEMS

These are the abilities that Excel Air Systems strives to help you unlock through the application of our systems and technologies, and they are only achievable in a sealed room facility. When the other factors are removed from the equation and the process is repeated, it can then be perfected to a level of remarkable efficiency.

Statistically speaking, based on simple calculations, once you've determined an effective method, if all other factors are kept consistent, even in the worst-case scenario, all your costs can be met, and in the best-case scenario, the situation will be productive, fruitful, and financially successful.

Additionally, from a business standpoint, once you've achieved consistency with a higher quality product, demand for the product increases, meaning prices can then be raised. Even in a situation where an excess of product has hit the market, your premium offering will stand out for its superior quality, strengthening your reputation.

Therefore, removing the other factors and mitigating unnecessary variables will propel you much further in the industry. When sealing your facility, you need what Excel Air Systems provides, because any applicable lamps will otherwise become too hot in an air-tight space.

With our experience supplying and supporting indoor agriculture facilities with mission critical technology, Excel Air Systems provides the ideal platform for you to run numerous experiments in a controlled way in your facility, directly ensuring the path to increased success.

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 LIVE CHAT



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