

CANNABIS
BUSINESS TIMES

2020

**STATE
OF THE
INDUSTRY
REPORT**

Five years of data reveals
key trends in the cannabis
cultivation market.

IN PARTNERSHIP
WITH





GREENHOUSE PRODUCTION CONTINUES TO BE THE NO. 1 TOOL FOR REDUCING YOUR INITIAL AND OPERATIONAL COSTS FOR A 52-WEEK PRODUCTION FACILITY, AS ILLUSTRATED IN THIS YEAR'S REPORT SHOWING **A DECREASE IN INDOOR AND INCREASE IN GREENHOUSE CULTIVATION SITES.**

FIVE YEARS INSIDE THE STATE OF THE INDUSTRY

For the past five years, Nexus Greenhouse Systems has partnered with *Cannabis Business Times* to bring you an inside look at the cannabis cultivation industry. With consistent year-over-year data, this research enables us all to better understand the industry, and its trends, and provides a useful tool for future planning.

As you'll see in this year's report, participants are reporting fewer losses and a leveling off of profits. As state markets stabilize across the country, we know it will be more important than ever to build and maintain operationally efficient cultivation facilities. As the market matures, the price per pound will continue to fall, and your production costs should too if you want to remain competitive, whether you are an entrepreneurial start-up or multistate producer. As a supplier of both greenhouse and indoor cultivation facilities, we know greenhouse production continues to be the No. 1 tool for reducing your initial and operational costs for a 52-week production facility, as illustrated in this year's report showing a decrease in indoor and increase in greenhouse cultivation sites. Nearly a third of greenhouse cultivators also report average production costs of less than \$100 per pound of dried flower, compared to 11% of indoor cultivators.

Whether for greenhouses or indoor grows, hemp, marijuana, or processing and extraction, we have the expertise to design your cultivation facility for your exact business needs. We handle projects from inception to completion with a multitude of structures to suit every climate and general contracting services to ensure you have a knowledgeable team capable of handling installation and systems integration. Our first-to-market approach will get you up and running so that you can optimize your return on investment and maintain operational efficiency.

How do we do this? By being a single-source solution provider. We're pleased to announce the development of the Growing and Processing Solutions groups from our parent company, Gibraltar Industries. Nexus Greenhouse Systems, Rough Brothers, Inc. (RBI), Tetra Indoor Grow, and Thermo Energy Solutions comprise the Growing Solutions Group. Apeks Supercritical and Delta Separations Extraction are the Processing Solutions Group. Together, we are a one-stop-shop for cultivation and processing.

We appreciate your participation in this year's research. We are pleased to support *Cannabis Business Times* in its effort to collect essential cultivation industry data through this annual "State of the Cannabis Cultivation Industry Report." If asked to participate in next year's study, we encourage you to do so; we can gather even more data with your help.

2020 is off to a very different start than any of us could have imagined. The long-term effect that COVID-19 will have on our industry is still to be determined. Nevertheless, we know that we will need to continue to promote the economic and medicinal benefits or our products, stay flexible in our methods of conducting business, and become more efficient in purchasing and day-to-day operations. We know that the cannabis industry is resilient and resourceful. Stay Safe! Stay Healthy!

— Greg Ellis, National Sales Director, Growing Solutions Group

Growing & Processing Solutions



TRACKING DATA REVEALS INDUSTRY SHIFTS, SUSTAINED GROWTH

WHEN CANNABIS BUSINESS TIMES first published the “State of the Cannabis Cultivation Industry Report” a half decade ago, only four states had legalized adult-use programs, close to a dozen states had no legal cannabis programs whatsoever, and hemp was illegal except for research pilot programs. Today, 11 states have fully legalized cannabis, just a small number of states have no legal cannabis programs, and hemp cultivation is permitted at the federal level.

What does this momentum mean for cannabis cultivators? With information and insights from study participants about their operations from multiple years, it is now possible to examine key trends and get a clearer picture of how the market has evolved.

Each year, cultivators are reporting lower production costs no matter whether they grow indoors, in a greenhouse or outdoors. Dramatic decreases were seen in greenhouse production. In response to the question, “What is your operation’s average production cost per pound of dried flower produced,” the number that fell in the middle of responses (the median) for greenhouse growers in 2018 was \$300; that figure is now \$233. Indoor and outdoor cultivators also are reducing production costs, with the median response to the same question dropping from \$425 two years ago to \$396 this year for indoor growers, and from \$175 in 2018 to \$100 this year for outdoor growers.

Perhaps the efforts to reduce cannabis production costs are due to increased competition/declining prices, the primary

business challenge participants have cited throughout the years of the study, including this year. Despite these and other fiscal hurdles, however, fewer cultivators (4%) said their revenue declined in 2020 compared to 2019 (11%). More cultivators (29%) reported increases in revenue during their most recently completed fiscal year compared to the 2019 study (22%), and 15% indicated no change. That may not seem like something to celebrate, until you consider that many participants (43%) could not answer that question, as they have not been in business for two years—a reminder that this is still a young industry that continues to attract interest and expand.

Not only is the industry growing, but the facilities that participants are cultivating in have also continued to expand during the past five years. Each year, a vast majority of participants report plans to add square footage to their cultivation sites in the next two years, and that remained unchanged in 2020, with 81% of participants reporting they have plans to expand.

This report, made possible each year with the support of Nexus Greenhouse Systems and based on a study conducted by third-party researcher Readex Research, provides benchmarks cultivators can use to compare their businesses and a look at the major trends and happenings that have occurred in this very dynamic market. We look forward to continuing to monitor the growth and changes, and to see what the next five years bring.

Where do you grow cannabis?

In which location(s) are your operation’s grow site(s)/facilities?



Total exceeds 100% because participants could select multiple answers

29%

OF GREENHOUSE GROWERS ARE PRODUCING A POUND OF DRIED FLOWER FOR AN AVERAGE OF LESS THAN \$100.

REVENUE & PROFITS: PLATEAUED, BUT SOLID

AFTER GROWTH SKYROCKETED BETWEEN 2018 AND 2019, participants in the 2020 “State of the Cannabis Cultivation Industry Report” hit a plateau in their revenue trajectory. The average reported revenue inched up from \$3.73 million in 2019 to \$3.74 million in 2020.

The median company revenue (the number where half of participants reported a higher revenue and half reported a lower revenue) fell from \$273,000 in 2019 to \$269,000 in 2020. A slightly higher percentage of cultivators (34%) noted revenues of \$1 million or more this year compared to last year (32%); this upward trend has continued during the five years *Cannabis Business Times* has conducted the “State of the Cannabis Cultivation Industry Report” with 24% noting revenues of \$1 million or more in 2016.

However, more cultivators reported revenue growth and fewer reported losses in the most recently completed fiscal year. Only 4% of participants indicated revenue had declined this year, compared to 11% in 2019 and 8% in 2018. And more than a quarter of participants (29%) reported revenue growth, with 17% of those participants noting that the increase was 25% or higher. Another 15% had steady revenue with no change compared with the previous year. Close to half of participants (43%) could not respond to that question because they have not been in business for two years.

What was your operation’s **revenue** from its cannabis cultivation operations in its most recently completed fiscal year?

	2016	2017	2018	2019	2020	Overall % pt. change 2016 vs. 2020
▶ \$5 million or more	6%	8%	11%	14%	11%	↑5%
▶ \$2 million - \$4.9 million	10%	9%	12%	7%	13%	↑3%
▶ \$1 million - \$1.9 million	8%	11%	10%	11%	10%	↑2%
\$500,000 - \$999,999	5%	13%	8%	8%	8%	↑3%
\$250,000 - \$499,999	9%	12%	7%	9%	7%	↓2%
\$100,000 - \$249,999	17%	13%	14%	14%	12%	↓5%
\$50,000 - \$99,999	30%*	6%	8%	9%	6%	—*
\$25,000 - \$49,999	—	5%	3%	4%	4%	↓1%**
Less than \$25,000	—	19%	21%	18%	26%	↑7%**
No answer	16%	5%	5%	7%	3%	↓13%

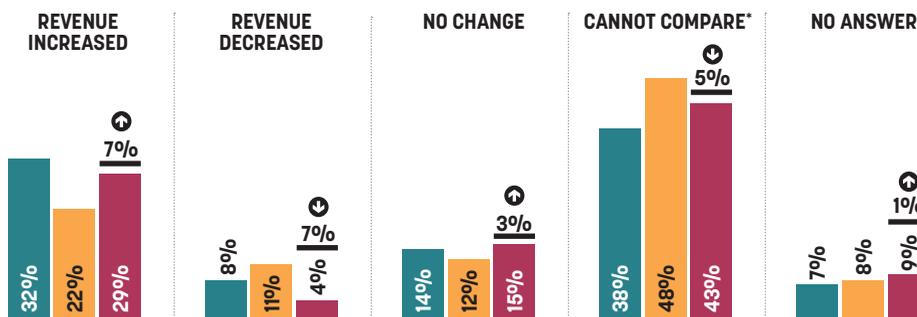
*Note: In the 2016 report, a total of 30% of research participants reported revenue less than \$100,000; the research did not break down revenue ranges less than \$100,000
 **Compared to 2017 data



29% of research participants noted revenue growth in the 2020 study.

Compared with one year prior, how did your operation’s **revenue** from its cannabis cultivation change in its most recently completed fiscal year?

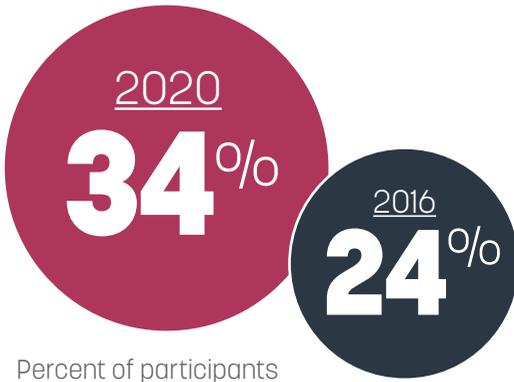
● 2018 ● 2019 ● 2020 ● Overall change (% points 2019 vs. 2020)



2020 Revenue increased:	Percentage
by 100% or more	5%
by 50% - 99%	7%
by 25% - 49%	5%
by less than 25%	10%

2020 Revenue decreased:	Percentage
by less than 25%	1%
by 25% - 49%	1%
by 50% or more	2%

Note: Totals may not add up due to rounding or participants not specifying percentages increased/decreased. *Have not been in business for two years



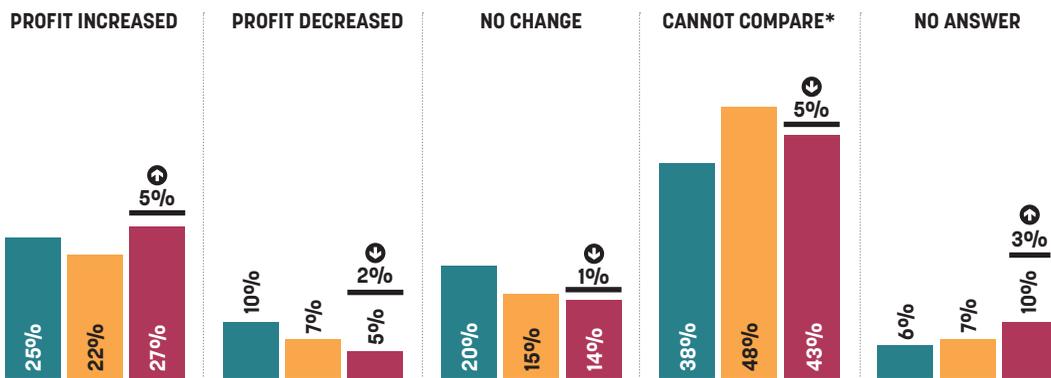
Percent of participants who noted their revenue was \$1 million or more

MODEST PROFIT INCREASES

AS WITH REPORTED REVENUE, more participants in this year's study noted profit increases and fewer indicated they experienced profit losses. Although the changes weren't significant between 2019 and 2020, the trends are positive, with 27% reporting profit increased in 2020 compared to 22% in 2019, and 5% reporting profit decreased compared with 7% in 2019. Another 14% reported no change, down from 15% who reported no change in 2019.

Profit growth was moderate, with fewer people reporting gangbuster percentage increases of 50% or more (8% in 2020 versus 12% in 2019) and more reporting modest profit jumps. In the 2019 study, nearly half (48%) of participants could not compare revenue and profit changes because they were not in business the previous year. In the 2020 study, the number is slightly lower (43%) but still notable.

Compared with one year prior, how did your operation's profit from its cannabis cultivation change in its most recently completed fiscal year? ● 2018 ● 2019 ● 2020 ● Overall change (% points 2019 vs. 2020)



*Have not been in business for two years

2020 profit increased:

by 100% or more	3%
by 50% - 99%	4%
by 25% - 49%	10%
by less than 25%	8%

2020 profit decreased:

by less than 25%	1%
by 25% - 49%	0%
by 50% or more	2%

Note: Totals may not add up due to rounding and due to some participants not specifying percentages increased/decreased.

COVID-19 FACTOR

CBT CONDUCTED THE 2020 "STATE OF THE CANNABIS CULTIVATION INDUSTRY" RESEARCH IN APRIL AMID THE COVID-19 PANDEMIC

that the world is still grappling with. It is too soon to tell what the business impact will be, but 63% of participants indicated that COVID-19 has already affected their operations, with the following ramifications: "decreased sales" (23%), "staff reductions/hours cut" (22%), "suspension of some operations" (21%) and "suspension of all operations" (4%). However, nearly a fifth of participants (18%) reported increased sales, and 5% said they increased staff hours. One bright note for the industry is that most states deemed cannabis companies essential businesses, so they could remain open, with modifications to prevent the spread of the virus.

In what ways, if any, has the COVID-19 outbreak impacted your cannabis operation?



WHERE CULTIVATORS GROW

THE YEAR-OVER-YEAR PERCENTAGE CHANGE showing where people grow cannabis—warehouse/indoors, greenhouse or outdoors—was negligible when comparing 2019 to 2020. When looking further back in time, the number of people growing cannabis in warehouses has decreased by 20 percentage points since the first “State of the Cannabis Cultivation Industry” study in 2016, when a vast majority (80%) of participants grew indoors compared with 60% in this year’s study. Meanwhile, the number of participants growing in greenhouses and outdoors has increased steadily over the years, with some variations. However, some participants grow in multiple types of facilities, but there are more participants who *only* grow cannabis in warehouses than any other sole option, with 42% growing exclusively indoors. The number of people solely growing in greenhouses has increased since 2016, moving 8 percentage points from 4% to 12% in 2020.

% of Crop Space

The average percentage of your cannabis production area is?



Note: This question first appeared in the 2017 study; 2016 data is not available.

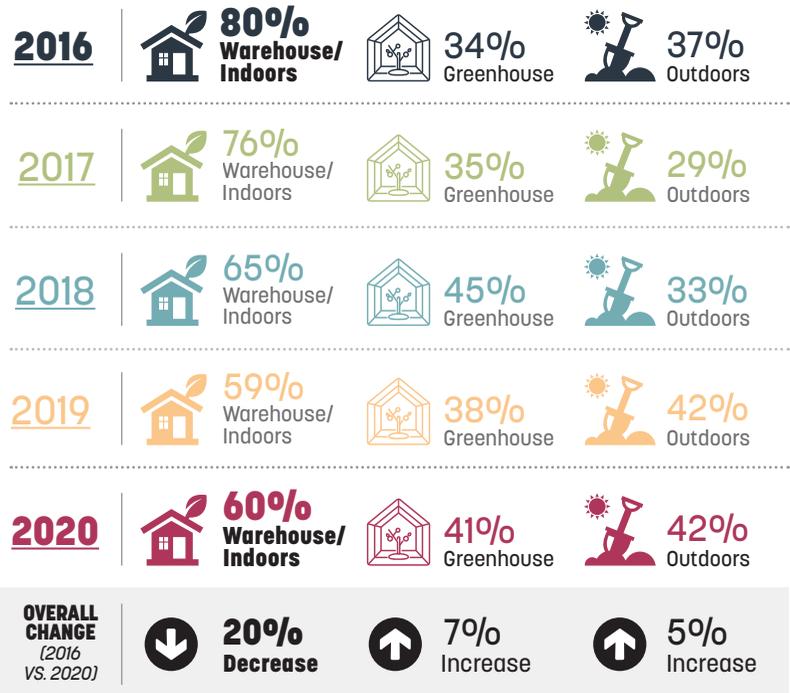
20%

The number of study participants growing in warehouses/indoors has decreased by 20 percentage points since the “State of the Cannabis Cultivation Industry Report” first launched in 2016.



Warehouse/Indoors, Greenhouse or Outdoors

Where does your operation grow cannabis?



Note: Totals exceed 100% because respondents could select multiple answers.

Warehouse/Indoors, Greenhouse or Outdoors: A Closer Look

Where does your operation grow cannabis?

	2016	2020	Overall Change
Warehouse/Indoors Only	44%	42%	↓ 2%
Greenhouse Only	4%	12%	↑ 8%
Outdoors Only	10%	12%	↑ 2%
Greenhouse + Outdoors (No Warehouse)	3%	16%	↑ 13%
Greenhouse + Warehouse (No Outdoors)	13%	4%	↓ 9%
Warehouse + Outdoors (No Greenhouse)	10%	5%	↓ 5%
All Three	14%	9%	↓ 5%

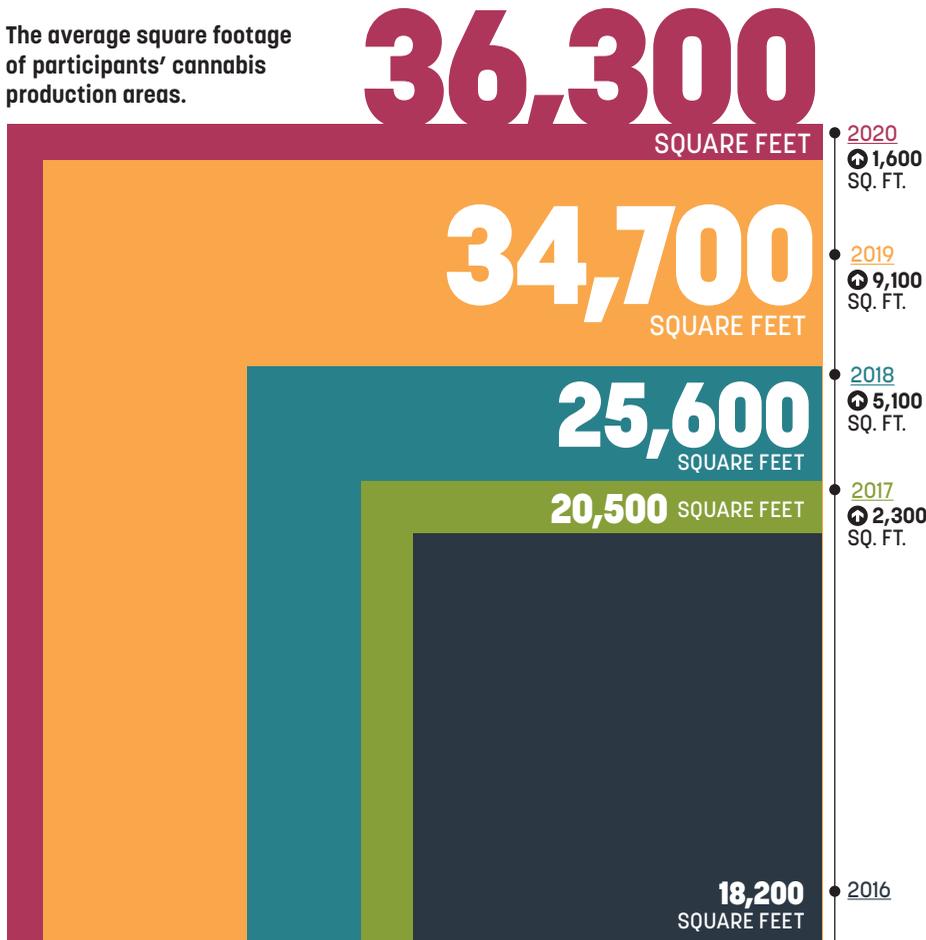
58%

of cultivators operate grow sites under the sun, either in greenhouses or outdoors.

BIGGER OPERATIONS, MORE FACILITIES

MOST PARTICIPANTS operate single cannabis growing operations (59%), but examining five years of data reveals trends toward larger facilities and more grow sites. In 2016, 66% grew in a single facility/location. Between 2016 and 2020, the number of participants indicating they grow in two or more facilities/grow sites increased from 32% to 41%. The number of cultivators growing in five or more sites jumped by 5 percentage points compared with the first year of the study, moving from 6% to 11%. In addition, the number of cultivators who have 80,000 sq. ft. or more of production space has increased by 12 percentage points comparing the 2016 to 2020 studies, and now nearly a fifth of study participants (19%) indicate they grow in facilities that size or larger.

The average square footage of participants' cannabis production areas.



Grow Size

What is the square footage of your operation's cannabis production area?

SIZE	2016	2020	OVERALL CHANGE
80,000 sq. ft. or more	7%	19%	↑ 12%
50,000-79,999 sq. ft.	3%	7%	↑ 4%
25,000-49,999 sq. ft.	12%	11%	↓ 1%
10,000-24,999 sq. ft.	15%	15%	-
5,000-9,999 sq. ft.	24%	12%	↓ 12%
Less than 5,000 sq. ft.	34%	35%	↑ 1%

Grow Sites: Single vs. Multi-Facility

How many cannabis facilities/grow sites does your operation have?

FIVE OR MORE



2016 2020
6% **11%**

Overall Change ▶ ↑ **5%**

FOUR



2016 2020
4% **2%**

Overall Change ▶ ↓ **2%**

THREE



2016 2020
7% **10%**

Overall Change ▶ ↑ **3%**

TWO



2016 2020
15% **17%**

Overall Change ▶ ↑ **2%**

ONE



2016 2020
66% **59%**

Overall Change ▶ ↓ **7%**

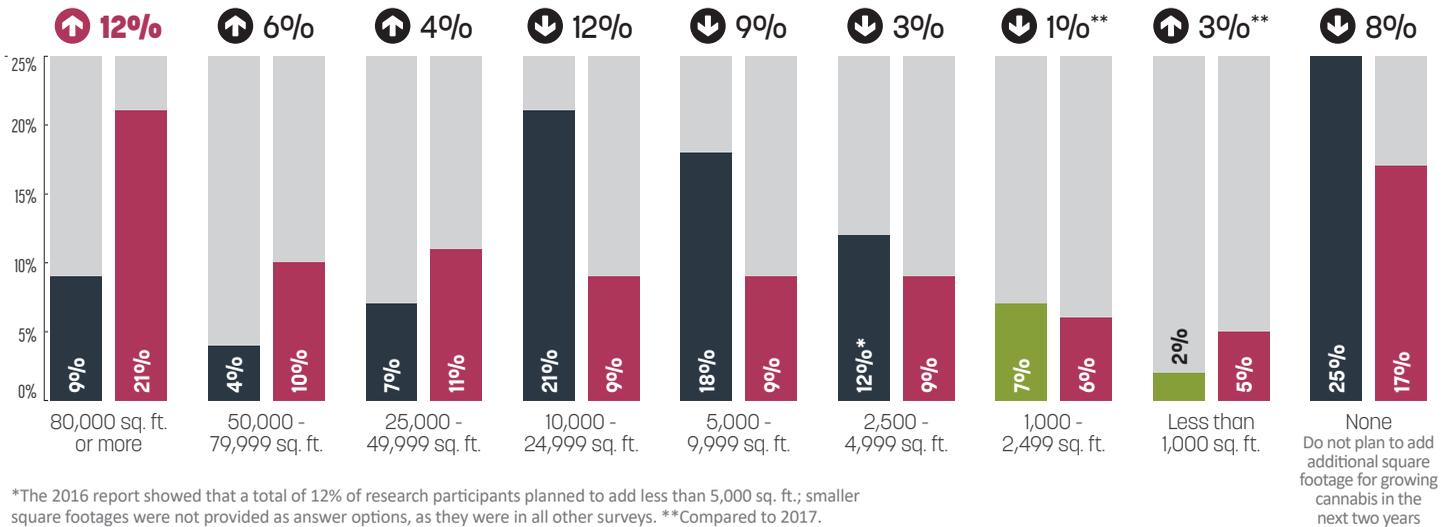
INDUSTRY OPTIMISM, EXPANSION CONTINUES

IN THE FIVE YEARS that *Cannabis Business Times* has published the “State of the Cannabis Cultivation Industry Report,” the vast majority of research participants noted they plan to expand their cultivation operations, with a slight shift in the types of expansion they have planned. The number of participants who noted greenhouse expansion plans has hovered around 45%, while the number of cultivators who plan to add indoor/warehouse space has decreased slightly since 2016 (36% in 2020 vs. 43% in 2016). Each year, about a fifth of cultivators noted plans to add outdoor cultivation space (22% this year).

The square footage that cultivators plan to add has shifted more significantly over previous years. Since 2016, the number of participants who said they plan to add 25,000 sq. ft. or more of cultivation space has increased from 20% in 2016 vs. 42% in 2020, while the number of cultivators planning to add less than 25,000 sq. ft. has decreased from 51% in 2016 to 39% in 2020. In 2016, a quarter (25%) of cultivators said they had no plans to add square footage; that number has decreased to 17% in this year’s study.

Expansion Plans

How much additional square footage for growing cannabis does your operation plan to add in the next two years? ● 2016 ● 2017 ● 2020



Projecting Growth Ahead

Which of the following does your operation plan to add for cannabis cultivation in the next two years?

	2016	2017	2018	2019	2020
Warehouse/indoors cultivation space	43%	47%	53%	39%	36%
Greenhouse	44%	46%	43%	43%	45%
Outdoor cultivation space	22%	20%	25%	23%	22%
None of these	21%	16%	18%	21%	21%
All three	-	-	-	-	5%

38,700 sq. ft.

The average square footage cultivators plan to add for growing cannabis in the next two years.

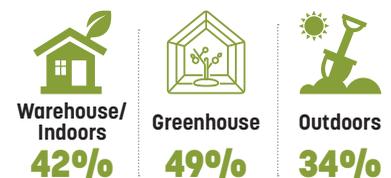
21%

Percent of research participants who indicated they plan to add 80,000 sq. ft. or more of cannabis growing space during the next two years.

MORE CONTINUE TO INVEST IN CANNABIS

THE GROWING CANNABIS INDUSTRY continues to attract interest, as indicated by the intentions of an additional 53 research participants who do not currently own or work for a cannabis cultivation operation but plan to in the next 18 months.

If you **DO NOT** currently own or work for an operation that grows cannabis, but plan to in the next 18 months*, which of the following does your operation plan to add for cannabis cultivation in the next two years?



*Base: an additional 53 research participants who do not currently own or work for an operation that grows cannabis. Note: Totals exceed 100% because participants could select multiple answers.

MORE EFFICIENT OPERATIONS

WHETHER GROWING IN A GREENHOUSE, INDOORS OR OUTSIDE, cultivators are running more efficient operations, as evidenced by the continuous decline in production costs seen during the years. For example, when growers were asked to provide their average production cost per pound of dried flower in 2019, the number that fell in the middle of all responses (the median) when growing in a warehouse, greenhouse or outdoors was \$400, \$261 and \$130, respectively. This year, those figures have declined to \$396, \$233 and \$100, respectively. When compared to 2018 data, as the chart below illustrates, the decreases are even more dramatic. Cultivators are continuing to utilize automation technology when cultivating, which could be increasing efficiency and lowering production costs. As noted later in the study, competition and declining prices have been cultivators' top challenges for multiple years, so decreasing the cost to produce a pound of flower may be a top priority.

47%

of cultivators indicated their average production costs per pound of dried flower grown outdoors is less than \$100.

29%

of cultivators said their average production cost per pound of dried flower grown in greenhouses is less than \$100, up from 15% in 2019.

Dried Flower: Production Costs

What is your operation's average production cost per pound (\$/lb.) of dried flower produced?

	Warehouse/ Indoors	Greenhouse	Outdoors
\$1,000 or more	7%	2%	5%
\$700 - \$999	15%	13%	2%
\$500 - \$699	14%	6%	5%
\$400 - \$499	8%	6%	1%
\$300 - \$399	12%	7%	6%
\$200 - \$299	7%	12%	11%
\$100 - \$199	17%	10%	16%
Less than \$100	11%	29%	-
\$50-\$99	-	-	19%
Less than \$50	-	-	28%
No answer	9%	13%	7%

What is the average cost to grow a pound of dried flower produced?*

2020



\$100

Outdoors



\$233

Greenhouse



\$396

Warehouse/
Indoors

Cost per pound change, 2018 vs. 2020:

↓ \$75

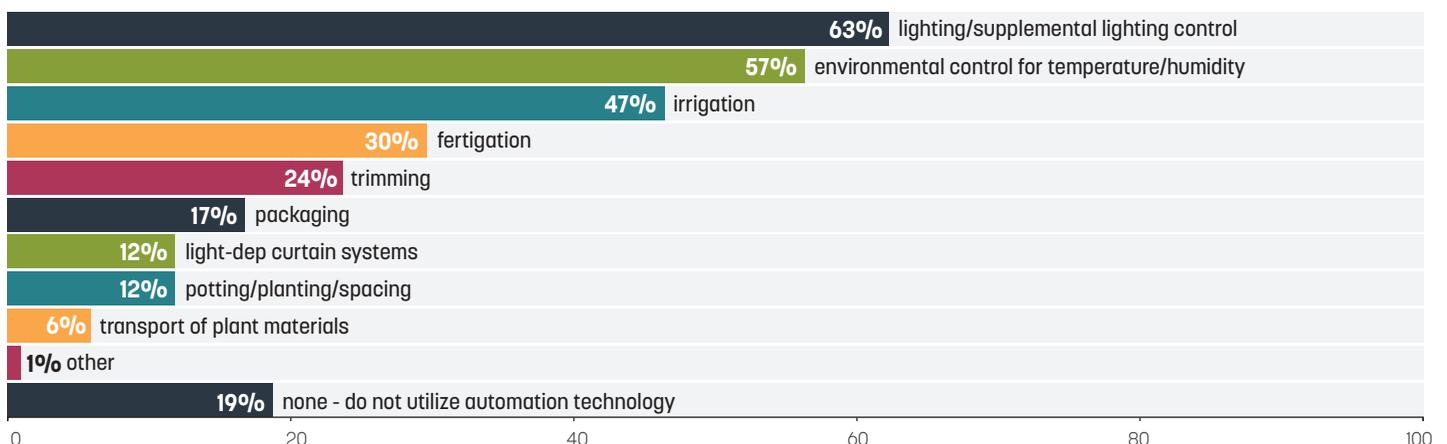
↓ \$67

↓ \$29

*Note: This chart shows the median average cost, or the number that fell in the middle of all responses

What Are You Automating?

For which systems does your operation utilize automation technology in its cannabis cultivation?



*Note: Total exceeds 100% because respondents could select multiple answers.



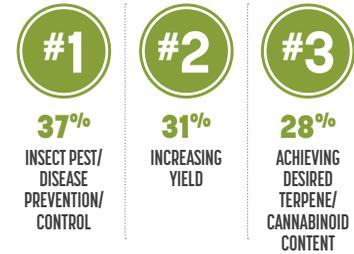
CHALLENGES: ONE CONSTANT IN A DYNAMIC INDUSTRY

NOT MUCH IN THE CANNABIS INDUSTRY IS CONSISTENT, with changing regulations and more states coming online with medical or adult-use programs. However, the primary cultivation- and business-related challenges for cannabis operations, according to participants, have remained unchanged for the past three years *CBT* has conducted the “State of the Cannabis Cultivation Industry Report.”

The top three *cultivation*-related hurdles cited again this year by participants are: “insect pest/disease prevention/control” (37%), “increasing yield,” (31%) and “achieving desired terpene/cannabinoid content” (28%). Other challenges noted included “humidity control” (21%), “maintaining consistent yields” (19%), “finding suitable genetics for growth environment” (15%) and “weather” (13%).

As far as *business* challenges, “competition/declining prices” again ranked as the No. 1 challenge among cultivators, with “compliance with local and/or state regulations” in a close second, and “finance management” ranking third. In addition to the top three business-related challenges, other highly cited options included “securing capital/funding” (23%), “uncertainty regarding federal law” (21%), “production costs” (20%), “marketing/brand building” (19%) and “product sales” (19%).

What do you consider to be your operation’s three* biggest **cultivation-related** challenges as a cultivator of cannabis?



*Note: Research participants could choose between multiple answer options. These were the top three most-cited responses.

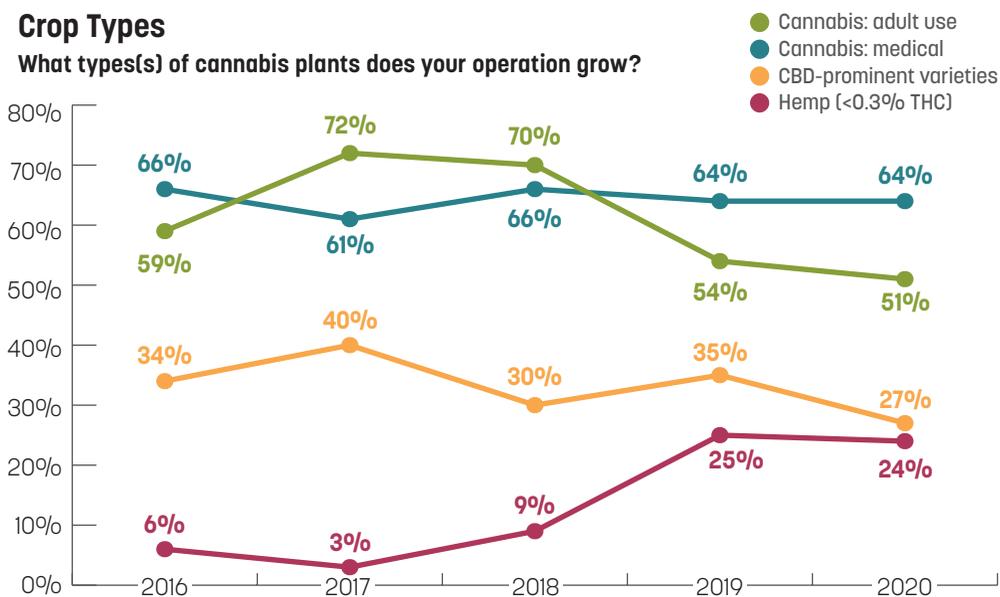
What do you consider to be your operation’s three* biggest **business-related** challenges as a cultivator of cannabis?



*Note: Research participants could choose between multiple answer options. These were the top three most cited responses.

Crop Types

What type(s) of cannabis plants does your operation grow?



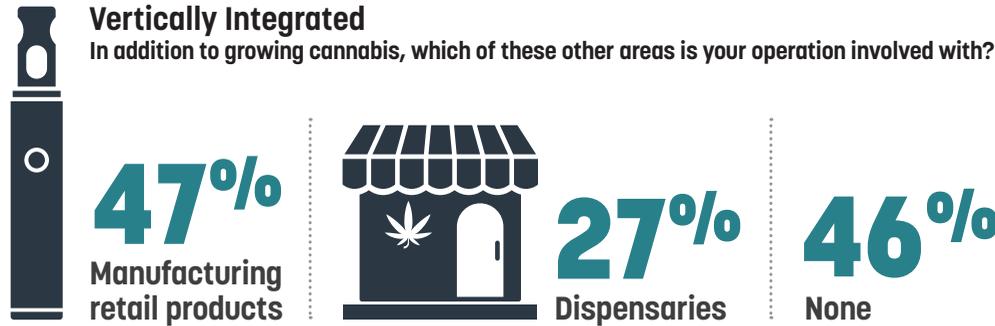
Note: Totals exceed 100% because respondents could select multiple answers.

24%

About a quarter of cultivators reported they are growing hemp, an 18-percentage-point increase from participants in 2016, the first year of the study.

CULTIVATORS DIVERSIFY

MORE THAN HALF OF ALL STUDY PARTICIPANTS (54%) are vertically integrated companies, either manufacturing retail products and/or operating dispensaries. This year's study took a closer look at companies that process/extract cannabis (42%), examining which methods were most prevalent. Of the 42% of cultivators that operate cannabis processing/extraction facilities, the top three extraction methods used included ethanol (45%), CO₂ (40%) and solventless (36%).



Note: Totals exceed 100% because respondents could select multiple answers.

Does your operation currently include cannabis processing/extraction?



54%

of participants said their companies are vertically integrated.

What portion of your crop do you extract/manufacture?*

100%	9%
80-99%	7%
60-79%	8%
40-59%	14%
20-39%	28%
1%-19%	29%
Less than 1%	4%

*Base: 85 study participants who indicated they are currently processing/extracting cannabis. No answer: 1%

What method(s) does your operation use to process cannabis?*



Note: Totals exceed 100% because respondents could select multiple answers.

ABOUT THE RESEARCH: The data in this report was collected by independent research firm Readex Research via an online survey, which was sent to all emailable, active, qualified subscribers to *Cannabis Business Times* magazine and/or e-newsletter located in the U.S. or Canada, from April 15 to April 29, 2020. The survey was closed for tabulation with 298 responses. To best represent the audience of interest, the base for the results in this report, unless otherwise noted, are the 202 respondents who indicated they currently own or work for an organization that grows cannabis. Another 53 respondents indicated they do not currently own or work for an operation that grows cannabis, but plan to in the next 18 months. The margin of error for percentages based on the 202 respondents who currently own or work for an operation that grows cannabis is approximately +/- 6.8 percentage points at the 95% confidence level.

CUSTOM DESIGNED CANNABIS CULTIVATION FACILITIES

DESIGN • BUILD • INTEGRATE • OPERATE



To help drive an efficient build process, we design a holistic cultivation facility plan. Handling a project from inception to completion is what separates us from our competitors. Our first-to-market approach will get you up and running so that you can optimize your ROI and maintain operational efficiency.



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