



Leafly.

# Leafly Cannabis Harvest Report 2022

America's 6th largest crop  
adds four new states

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# **Legal cannabis now supports more than 13,200 American farms in 15 adult-use states**

With a wholesale value of \$5 billion, recreational marijuana is America's 6th most valuable cash crop, worth more than potatoes or rice



## Make room, amber waves of grain.

American cannabis farmers are growing an awesome wave of legal green that weighs some **2,834 metric tons**, according to the Leafly Cannabis Harvest Report 2022.

There are now 15 states where adults can go into a state-licensed store and buy legal cannabis. Those 15 states now support **13,297 active legal cannabis farms**, which in turn support farm families, communities, and tens of thousands of full-time workers.

Yet this legal crop is missing from USDA reports on agriculture. That's a significant omission with real implications. Americans want to end the Drug War and move consumers to a legal, taxed, and tested crop. Voters and community leaders need production, price, licensing, and crop value data to measure our progress. Regulators in some states cannot supply the most basic fact about their cannabis markets: "How much pot did you grow?" To find the answer, Leafly estimated it for the second year in a row.

The story in 2022 is all about rising production and falling prices. As the legal harvest continued to ramp

up in legal states, the average price of cannabis fell over the past twelve months, yielding an adult-use **cannabis crop worth \$5 billion in wholesale value.**

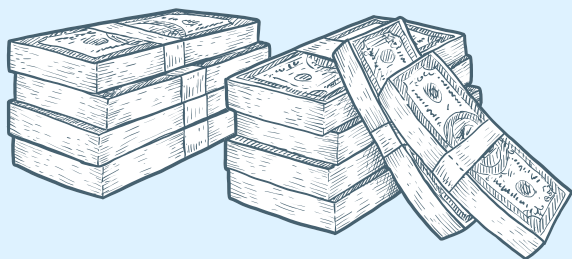
That makes legal cannabis **the sixth most valuable crop in the US.** Only corn, soybeans, hay, wheat, and cotton bring in more money on a wholesale basis.

Farmers grew **24% more metric tons of adult-use cannabis** this year, compared to the year measured in the 2021 Leafly Cannabis Harvest Report. To get a sense of the volume of the past year's cannabis harvest, **2,834 metric tons** would fill nearly 15,000 dump trucks lined up end-to-end for up for 45 miles.

We're only counting the 15 active adult-use states, not the dozens of medical-only states, or crops grown to supply the illicit market. That total number would be about 3 to 5 times larger.

Leafly's report is a synthesis of licensing records with state cannabis production totals, sales and tax reports, commercial price trends, field measurements, US Department of Agriculture crop values, and expert interviews.

### Comparisons: 2022 wholesale harvest value, US



Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service 2022

Crop	Annual wholesale value
1. Corn	\$82.6 billion
2. Soybeans	\$57.5 billion
3. Hay	\$19.3 billion
4. Wheat	\$11.9 billion
5. Cotton	\$7.5 billion
6. Cannabis	\$5 billion



# WHY COUNT THE CROP?



The US Department of Agriculture (USDA) tracks annual yields, prices, and estimated values for nearly every commercial crop grown in America. But the USDA does not track legal cannabis due to the plant's status as a federally illegal Schedule I drug.

That's a big deal. In adult-use states, cannabis is consistently one of the highest-value crops in the field. Our Leafly Cannabis Harvest Report quantifies annual adult-use cannabis production in operational adult-use states, just like the USDA's Economic Research Service does for all non-cannabis crops.

The federal government isn't alone in ignoring the value of the harvest. Many legal states still fail to capture this important information. One of the oldest adult-use states, Washington, has an annual cannabis report for the 2021 fiscal year that doesn't even include the word "pounds" or "plants." The state's agriculture agency has a proud "Washington Grown" campaign that touts the value of apples, wheat, cherries, and more than 30 other commodities — but not cannabis, which is Washington's 7th most valuable crop.

Colorado regulators released a new cannabis data portal in 2022 — but it too fails to report how many pounds the state's farmers are growing.

In collaboration with researchers at Whitney Economics, Leafly's investigative team gathered data, conducted interviews, analyzed wholesale prices, and parsed classes of cannabis quality. We invested these resources into the Leafly Cannabis Harvest Report because American voters and policymakers need reliable data to inform decisions about legalizing, taxing, and regulating one of the country's fastest-growing industries.

It's time to end the stigma attached to cannabis farming. Far too many state agricultural agencies and policymakers still treat cannabis growers with contempt. Some right-to-farm laws specifically exclude cannabis farming. Most cannabis farmers must — by law — hide their crops from public view, as if the mere sight of a fan leaf might induce intoxication. These unfair and unnecessary measures are taken against a legal crop that's one of the top agricultural products in every adult-use state.

Today, 19 states and the District of Columbia have legalized the adult use of cannabis. As of October 2022, adults in 15 states can walk into a store and legally purchase cannabis for their own health and enjoyment. Cannabis doesn't grow itself. Cannabis farmers grow it, and it's time to recognize their work.

# Leafly Cannabis Harvest Report 2022

## Crop production in America's 15 operating adult-use markets



Legal state	Value of wholesale cannabis production	Annual legal production, in metric tons	Number of active legal cultivation licenses (Sept. 2022)	Cash crop value rank in state
Alaska	\$138M	29	249	1
Arizona	\$250M	92	132	3
California	\$1B	577	6,881	8
Colorado	\$687M	623	818	2
Illinois	\$445M	77	109	3
Maine	\$45M	11	72	3
Massachusetts	\$362M	83	340	1
Michigan	\$551M	203	925	4
Montana	\$50M	13	278	4
Nevada	\$420M	143	305	2
New Jersey	\$124M	20	13	1
New Mexico	\$90M	27	496	3
Oregon	\$500M	614	1,406	2
Vermont	\$20M	5	203	4
Washington	\$350M	317	1,070	7
<b>US Total</b>	<b>\$5.032B</b>	<b>2,834</b>	<b>13,297</b>	<b>6th</b>

Leafly calculated crop production and wholesale value based on the most recent 12 months of data available in each state. In some states, that reflects 2021 full-year or fiscal-year production, while in other states, those values were based on the latest available 12-month data sets.



# CANNABIS FARMERS NEED TO BE TREATED LIKE REAL FARMERS

HEALING  
HERB  
FARMS





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## **Cannabis is a top cash crop in states where it's legal, but you'd never know it by the shoddy treatment of America's cannabis farmers.**

None of the 15 legal states included in the Leafly Harvest Report officially list cannabis among their top agricultural commodities. Even though marijuana is the No. 1 crop in Alaska, Massachusetts, and New Jersey, regulators in two of those states don't even publish production totals, let alone celebrate the accomplishments of those farmers. The stigma created by 85 years of prohibition and government-funded propaganda continues to fuel this bias. That has real consequences for cannabis farmers, who must overcome significant barriers faced by no other growers. Here are a few examples of the roadblocks America's cannabis farmers continue to face.





# Federal-level cannabis farm discrimination

## Criminalization

Cannabis remains federally illegal. Cultivating a single plant remains a felony that can result in arrest, prosecution, and a five-year federal prison sentence. This is despite the fact that cannabis is now legal in 19 states and sold under state license in 15 states. Gallup polls put support for full legalization at 68%, while 91% of all Americans support the legal use of medical marijuana. Federal prohibition has no reason to continue, and yet it does.

## No banking or loans available

Federal marijuana prohibition affects every cannabis farmer's ability to perform the most basic functions of a business: to keep bank accounts, obtain crop insurance, and get loans. Cannabis farmers also report trouble obtaining personal mortgages and car loans due to the crop they choose to grow.

## Over-taxation

Cannabis businesses are crushed every year by Section 280E of the IRS Tax Code, designed to punish illegal drug dealers. Cannabis businesses have an effective tax rate of 70%.

## No disaster relief

In May, the Biden administration offered \$6 billion in disaster relief to farmers all across America. But legal state-licensed cannabis farmers — who saw their crops destroyed by wildfires — won't see a penny of it. They remain ineligible for all forms of federal aid. "Marijuana is a controlled substance, and therefore is not eligible for federal farm programs," a USDA spokesperson explained. Tobacco, soybean, and cotton farmers were eligible, but not farmers growing legal cannabis.

# State-level cannabis farm discrimination

## High insurance rates

Cannabis farmers remain underinsured, with high premiums, and have a hard time making claims. Six years after legalizing marijuana, California legislators had to enact a law in Sept. 2022 to clarify that cannabis crop insurers are not committing a crime.

## Lack of legal markets

Cannabis farmers cannot sell their crops directly to consumers, and they don't have enough retail outlets for their crops. Local municipalities that "opt out" of local regulated sales, especially in states like California and New Jersey, have created economic protection zones for unlicensed, illicit cannabis sellers. State-licensed farmers can only sell to state-licensed stores, so these opt-out towns effectively undermine the farmers who follow the law and play by the rules.

## Exorbitant application fees

The application fee for a cultivation license remains ludicrously high in many states. Those fees become a barrier to entry for all but a few well-financed farmers. California's highest fees, for medium-sized indoor growing facilities, total \$77,905.



## Overregulation

Regulatory costs continue to mount even as wholesale cannabis prices and profits slide. In Colorado, testing costs have doubled over the past 18 months. Colorado's alcohol rulebook is 112 pages, but its cannabis rules run more than 500 pages. In California, no-growth land use rules have stymied housing, and mass transit production has also ensnared cannabis farmers.





# State by state: Cannabis harvest details

Adult-use cannabis continues to be a major agricultural commodity that supports more than 10,000 American farms, farm families, and their communities. Legal marijuana became the No. 1 cash crop in New Jersey within months of the first store opening in April 2022.

Broadly speaking, over the past year, farmers in the American West expanded their cannabis production by hundreds of metric tons. Comparatively, growers in most Midwestern and Eastern states expanded their harvest at a snail's pace. At the same time, the pandemic-fueled consumer appetite for cannabis slackened in 2022, which led to a dynamic in which increased supply met a market with tightening demand. And that meant lower wholesale prices for cannabis farmers.



# Alaska

Cannabis continues to dominate Alaskan agriculture. For the 2022 fiscal year, 249 operating cannabis farms produced 28.7 metric tons of adult-use cannabis. That's more than 1 million ounces worth \$138 million wholesale, based on data provided by the Alaska Department of Revenue. Despite being the biggest state by area, Alaska has the fewest farms in all of the US.

The state's second biggest crop, hay, brought in less than one-tenth of the dollar value of cannabis. Alaska is not conducive to outdoor grows, but has high consumer demand. Alaska is considered one of the most expensive states for wholesale cannabis thanks to taxes levied against growers and expensive testing regulations, with pounds selling for \$3,100.

**Adult-use cannabis licenses: 249**

**Annual adult-use cannabis production:**  
29 metric tons (up 37% YOY)

**Value of adult-use cannabis production in dollars:**  
\$138M (up 33% YOY)

**Adult-use cannabis rank among state crops: #1**

Crop	Annual wholesale value
1. Cannabis	\$138 million
2. Hay	\$9.8 million
3. Barley	\$1.4 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



(Mike Rosati for Leafly)



## Arizona

Arizona's adult-use industry started strong in 2021, but over the past year farmers have harvested roughly the same amount of marijuana while making slimmer profits. While the state upped its cultivation license total to 169 with a round of equity applicants, about 132 license-holders were actively growing legal cannabis as of Sept. 2022.

Based on retail sales weights, we estimate that licensed farms produced 92 metric tons in the last year. Prices fell due to intense oversupply, benefiting consumers with great deals, but pinching farmers. Using retail sales weight and dollar totals, we estimate Arizona's wholesale crop revenue at \$250 million, which makes it the state's third most valuable crop after hay and lettuce.

**Adult-use cannabis licenses: 132**

**Annual adult-use cannabis production:**

92 metric tons (down 2% YOY)

**Value of adult-use cannabis production in dollars:**

\$250M (down 31% YOY)

**Adult-use cannabis rank among state crops: #3**

Crop	Annual wholesale value
1. Hay	\$494 million
2. Lettuce	\$291 million
3. Cannabis	\$250 million
4. Spinach	\$114 million

Data sources: Leafly, Whitney Economics, USDA Economic Research Service



*The West Coast and a couple younger adult-use markets, Michigan and Arizona, really saw the bottom fall out over the last year.*

**Adam Koh, Editorial Director  
Cannabis Benchmarks**





## California

Adult-use cannabis is a \$1 billion dollar crop in California — and yet many farmers are hurting. Years ago we predicted that California's transition from prohibition to legal sales would be an extinction event, and the comet has hit. Over the past two years, competition ramped up, illicit enforcement evaporated, marijuana flooded legal and illicit markets, and prices slid. Thousands of farmers in both the legal and illegal markets quit. The average untrimmed, dried pound might have been worth \$786 wholesale in August 2022, but individual outdoor pounds have drawn prices as low as \$100.

While farmers increased production by 63 metric tons on the legal side, the weed harvest slipped from 5th to 8th in the state because of those price drops. Consumers are seeing unheard-of bargains in 2022, with \$20 retail eighths now the norm. Longtime Prop 215 (medical) growers and illicit farmers are exiting the trade, while big state-licensed growing operations are coming online. We forecast that only the best, biggest, most efficient, and well-capitalized farmers will survive. Read an in-depth analysis on California on page 24.

**Adult-use cannabis licenses:** 6,881

**Annual adult-use cannabis production:**  
577 metric tons (up 12% YOY)

**Value of adult-use cannabis production in dollars:**  
\$1B (down 40% YOY)

**Adult-use cannabis rank among state crops:** #8

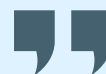
Crop	Annual wholesale value
5. Hay	\$1.2 billion
6. Tomatoes	\$1.2 billion
7. Walnuts	\$1.02 billion
8. Cannabis	\$1 billion

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



*Lots of amazing people, families, and farmers are going to most likely have to move out of this area that they have called home for their whole lives. The market has to pick up for this to change.*

**Jason Gellman,  
Ridgeline Farms, CA**



(David Downs / Leafly)





## Colorado

Colorado is an example of a regulatory reporting failure. State officials don't know how much cannabis the state produced last year. We do know Colorado farmers paid 15% excise taxes on \$687,205,167 for the last 12 months, which indicates the crop's value.

We also saw consumer demand sag in the nation's original adult-use marijuana market. From June 2021 to June 2022, Colorado's retail marijuana sales were down nearly 21%. Wholesale prices hit historic lows this summer, and we don't expect a correction anytime soon.

Colorado now has 818 adult-use cannabis cultivation facilities, up slightly from last year, as some folks expand or new market entrants try their green thumbs. Colorado farmers are growing about 1.37 million pounds of marijuana per year, which is enough to meet the demand of the state's 5.6 million residents, plus the weed tourists who continue to travel in to enjoy that Rocky Mountain high.

**Adult-use cannabis licenses: 818**

**Annual adult-use cannabis production:**  
623 metric tons (down 0.5% YOY)

**Value of adult-use cannabis production in dollars:**  
\$687M (down 34% YOY)

**Adult-use cannabis rank among state crops: #3**

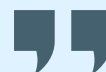
Crop	Annual wholesale value
1. Hay	\$1.21 billion
2. Corn	\$846 million
3. Cannabis	\$687 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



*Regulations are up, prices are down. The breaking point was two years ago, when it came to the price versus the cost of production for most people. Every single bit of my consulting business is outside of this state.*

**Jordan Stauder,  
National Cannabis Industry  
Association Cultivation Chair,  
Stauderfish Consulting, CO**



## Illinois

Illinois added little cultivation space amid soaring consumer demand over the last 12 months, resulting in some of the highest prices in the country at the retail counter. Little price relief is in sight as demand stays relatively high in the Midwest, and the new equity farms coming online are small.

Illinois' cultivation tax of 7% gave us insight into the state's cannabis production. The state collected \$31,154,168 in the fiscal year ending June 2022. That implies total cultivation revenue of \$445 million. Based on prevailing prices, Illinois grew 77 metric tons, an increase of 11 tons from last year's Harvest Report. Adult-use cannabis remains the third largest cash crop in the state, after soybeans and ahead of wheat.

**Adult-use cannabis licenses: 109**

**Annual adult-use cannabis production:**

77 metric tons (up 17% YOY)

**Value of adult-use cannabis production in dollars:**

\$445M (up 38% YOY)

**Adult-use cannabis rank among state crops: #3**

Crop	Annual wholesale value
1. Corn	\$11.8 billion
2. Soybeans	\$8.9 billion
3. Cannabis	\$445 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



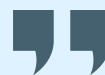
### HOW ABOUT THAT!

1 metric ton of cannabis equals  
about 1 million, 1-gram joints.



*Legalizing cannabis for adults has been a wise investment for the Illinois economy and sales have continued to rise, leading to additional revenue for the state. Consistent cash flow from the cannabis industry assists the state with funding essential services such as violence prevention, mental health, and local government.*

**Kimberly A. Lightford,  
Senate Majority Leader,  
Illinois General Assembly**



(Mike Rosati for Leafly)



## Maine

Maine's adult-use cannabis production increased from 6 metric tons in 2021 to 10.73 metric tons in the state's second full year of adult-use production and sales. Maine's Office of Marijuana Policy provides production in wet kilos, which is about 10-15% of dry weight.

Adult-use cannabis is the third most valuable cash crop in the state, generating \$45 million, ahead of hay and maple syrup, but behind blueberries. We counted 72 active cultivation licenses (of 149 total issued), down from 223 in last year's report. Maine adult-use cannabis made a lot of gains fast — just under two-thirds (64%) of Maine's cannabis consumers procure their goods from a legal source, such as a licensed adult-use, medical marijuana dispensary, or a caregiver.

**Adult-use cannabis licenses: 72**

**Annual adult-use cannabis production:**  
11 metric tons (up 79% YOY)

**Value of adult-use cannabis production in dollars:**  
\$45M (up 95% YOY)

**Adult-use cannabis rank among state crops: #3**

Crop	Annual wholesale value
1. Potatoes	\$215 million
2. Blueberries	\$80 million
3. Cannabis	\$45 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



### HOW ABOUT THAT!



Only potatoes and  
blueberries bring more  
crop value to Maine.





## Massachusetts

Licensing counts ticked up and consumers bought \$1.45B in cannabis products in the Bay State in the past year, which yielded a 44% gain in the value of the state's cannabis harvest. Farmers grew more than last year but did not oversupply the still-developing market. There are now 340 adult-use cannabis cultivation licensees, up from 274 last year. Farmers harvested 83 metric tons of marijuana, up from 52 metric tons last year.

Massachusetts' adult-use cannabis crop is worth somewhere in the range of \$362 million in wholesale value. Even with a fair margin of error, adult-use cannabis is by far the most valuable crop in the Commonwealth, well ahead of the state's famous cranberries. Outdoor growing is allowed but restrained by poor weather and canopy limits, keeping Massachusetts' prices high.

**Adult-use cannabis licenses: 340**

**Annual adult-use cannabis production:**  
83 metric tons (up 60% YOY)

**Value of adult-use cannabis production in dollars:**  
\$362M (up 44% YOY)

**Adult-use cannabis rank among state crops: #1**

Crop	Annual wholesale value
1. Cannabis	\$362 million
2. Cranberries	\$66 million
3. Hay	\$13 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



*In order to keep up with demand, we recently expanded operations and more than doubled our existing canopy and added three new flower rooms with an additional 8,000 square feet of canopy and 500 lights.*

**Zach Taylor, GM of cultivation  
Bountiful Farms, MA**



### HOW ABOUT THAT!

Cannabis brings more crop value to Massachusetts than cranberries. It's not even close.





# Michigan

Michigan might be the past year's biggest marijuana farming success story. Adult-use sales took off on tracks laid down by a well-established medical marijuana system. The number of state-licensed cannabis growers shot up to 925 this year. Production ramped up to at least 203 metric tons, based on retail sales data, and it's likely significantly more. Farmers met, and possibly surpassed, the ravenous new residential and tourism demands for adult-use cannabis. All the new growers, plus homegrowers and the illicit market, caused a supply flood and reduced the price of flower, leading to an annual wholesale crop worth \$551 million. That marks cannabis as the No. 4 most valuable crop in Michigan.

**Adult-use cannabis licenses:** 925

**Annual adult-use cannabis production:**  
203 metric tons (up 7.5% YOY)

**Value of adult-use cannabis production in dollars:**  
\$551M (down 25% YOY)

**Adult-use cannabis rank among state crops:** #4

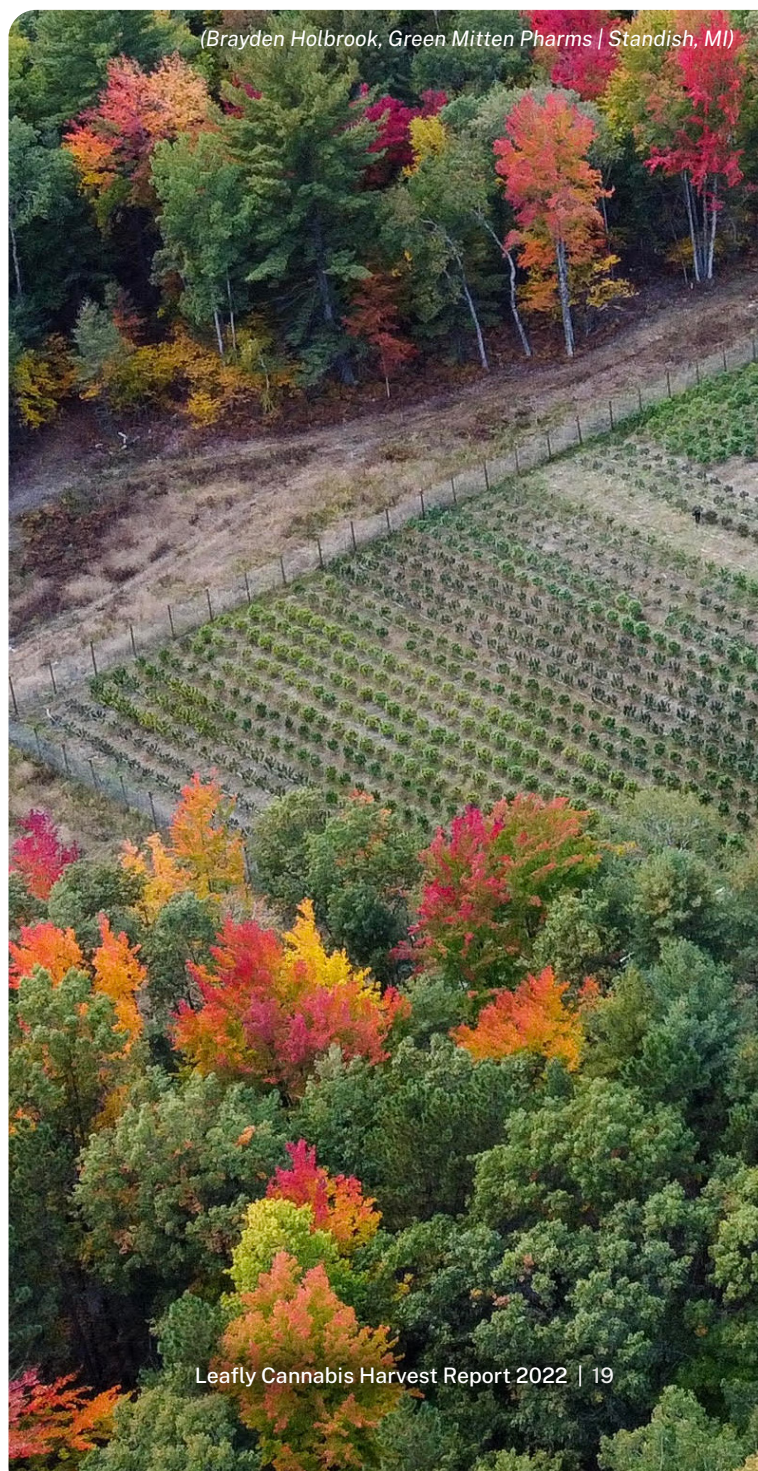
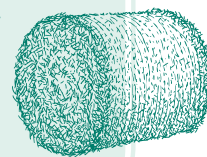
Crop	Annual wholesale value
1. Corn	\$1.9 billion
2. Soybeans	\$1.5 billion
3. Hay	\$608 million
4. Cannabis	\$551 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



## HOW ABOUT THAT!

Only corn, soybeans, and hay  
bring Michigan more crop  
value than cannabis.



(Brayden Holbrook, Green Mitten Pharms | Standish, MI)



## Montana

In Montana's first year of adult-use cannabis sales, 278 of 355 total cultivation licenses were active. To arrive at an annual crop value we extrapolated from the first nine months of legal sales. We predict that by the end of 2022, Montana's 434 licensed stores will have sold \$177 million worth of adult-use retail products from a crop worth \$50 million to the farmers. Given that wholesale prices are relatively high, we estimate 13 metric tons of adult-use cannabis will be grown and harvested in year one. Cannabis is the No. 6 cash crop in Montana — and this is only its first year of production.

**Adult-use cannabis licenses: 278**

**Annual adult-use cannabis production:**  
13 metric tons

**Value of adult-use cannabis production in dollars:**  
\$50M

**Adult-use cannabis rank among state crops: #6**

Crop	Annual wholesale value
1. Wheat	\$832 million
2. Hay	\$755 million
3. Barley	\$122 million
4. Lentils	\$63 million
5. Peas	\$56 million
6. Cannabis	\$50 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service

## Nevada

The Silver State added three licenses over the last year for a total of 305 cultivation licensees by fall of 2022, and produced 32 more metric tons to bring the state's total harvest to 143 metric tons.

Nevada prices held steady over the year even as production increased. Tourism in Las Vegas is slowly recovering from the pandemic, helping to soak up the increased supply. New products also played a role in the state's market. Skyrocketing consumer demand for live resin and solventless extracts drove up prices for "fresh frozen" flower, as well as trim. Adult-use cannabis is the No. 1 cash crop in all of Nevada at \$420M.

**Adult-use cannabis licenses: 305**

**Annual adult-use cannabis production:**  
143 metric tons (up 28% YOY)

**Value of adult-use cannabis production in dollars:**  
\$420M (down 3% YOY)

**Adult-use cannabis rank among state crops: #1**

Crop	Annual wholesale value
1. Cannabis	\$420 million
2. Hay	\$256 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



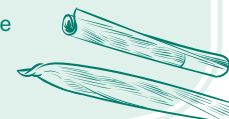
### HOW ABOUT THAT!



The Nevada fair-market value of bud fell from \$2,399/lb for fiscal '21 to \$2,074/lb in fiscal 22.



Their fair market value of a joint? \$5.  
A seed? \$6.





## New Jersey

New Jersey's adult-use cannabis stores just opened in April 2022, but already cannabis is the No. 1 cash crop in the Garden State. The state has awarded 73 cultivation licenses, but only 13 of those licensees are actively growing. NJ's limited number of growers will constrain supply and keep prices high through at least early 2023.

With only 70 days of adult-use sales from which to extrapolate, we conservatively anticipate \$416 million in adult-use retail sales in New Jersey in the first 12 months of operations, with a wholesale harvest revenue of \$124 million. Given high wholesale prices, we estimate that New Jersey will produce 20 metric tons of adult-use cannabis in year one — about as much as New Mexico, another state in its first year of adult-use sales.

**Adult-use cannabis licenses: 13**

**Annual adult-use cannabis production:**  
20 metric tons

**Value of adult-use cannabis production in dollars:**  
\$124M

**Adult-use cannabis rank among state crops: #1**

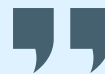
Crop	Annual wholesale value
1. Cannabis	\$124 million
2. Blueberries	\$78 million
3. Corn	\$72 million
4. Soybeans	\$56 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service



*The market is improving. As more cannabis businesses come online, consumers won't have to travel as far to make purchases, and prices will fall with increased competition. The market will do even better.*

**Jeff Brown,**  
**Executive Director of the New Jersey Cannabis Regulatory Commission**



### HOW ABOUT THAT!

Only 13 cannabis farms are supplying the entire state with legal weed.





## New Mexico

On April 1, 2022, 118 medical cannabis stores opened to adult-use consumers in New Mexico. The state's licensed retailers are now selling roughly \$21 million in adult-use cannabis each month, allowing us to estimate a year's worth of retail sales and work back to arrive at a value for the state's adult-use cannabis crop revenue.

Reported prices of wholesale flower are coming down from \$4,000 to \$2,500, and a big outdoor crop is expected to come in this month, which should drive prices down even further. We anticipate New Mexico doing a conservative \$252 million in its first year of adult-use sales, based on a \$90 million wholesale crop weighing 27 metric tons—and that's on the low end. Those figures indicate that adult-use cannabis is the No. 3 cash crop in New Mexico, after pecans and hay.

**Adult-use cannabis licenses:** 496

**Annual adult-use cannabis production:**  
27 metric tons

**Value of adult-use cannabis production in dollars:**  
\$90M

**Adult-use cannabis rank among state crops:** #3

Crop	Annual wholesale value
1. Pecans	\$189 million
2. Hay	\$186 million
3. Cannabis	\$90 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service

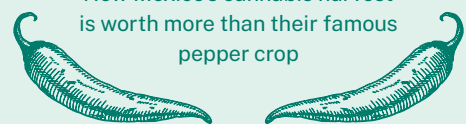


(Mike Rosati for Leafly)



### HOW ABOUT THAT!

New Mexico's cannabis harvest  
is worth more than their famous  
pepper crop





## Oregon

An abundance of legal and illegal outdoor cannabis production has devastated the wholesale price of marijuana in Oregon. The state is growing twice as much adult-use cannabis as Washington, and Oregon's regulatory agency, the OLCC, reports that 1,406 farms are growing weed in Oregon, an increase of 87 from last year.

Oregon is doing a great job of reporting harvest weight — it's likely the best in the nation with data transparency. Total wet weight for the 2021 growing period totaled 6.4 million wet pounds, or the weight of the plant at harvest, before it's dried and cured. The crop dried out to an estimated 614 metric tons, almost double the state's legal harvest weight we reported last year. (We believe we undercounted Oregon's harvest last year.)

Given the current trajectory of the state's cannabis ag sector, we expect the full 2022 grow year to yield a harvest that's 78% higher than what we saw in 2021. On the retail side, sales revenue has been flat throughout 2022, even as production increased. Weak demand amid the influx of cannabis slashed average wholesale prices in half, according to Cannabis Benchmarks. Because of those price declines, adult-use cannabis slipped to the No. 2 cash crop in Oregon.

**Adult-use cannabis licenses: 1,406**

**Annual adult-use cannabis production:**  
614 metric tons (up 78% YOY)

**Value of adult-use cannabis production in dollars:**  
\$500M (down 17% YOY)

**Adult-use cannabis rank among state crops: #2**

Crop	Annual wholesale value
1. Hay	\$563 million
2. Cannabis	\$500 million
3. Wheat	\$295 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service

## Vermont

Vermont began adult-use sales on October 1, 2022, so we included 12-month crop projections to serve reader interest. Vermont has 203 cultivation licenses and has been approving more. It's unclear how many are active, and Vermont rules deliberately throttle competition to benefit small, craft farms. Vermont climate also limits outdoor cultivation.

Vermont regulators estimate \$104M in adult-use sales in the first 12 months of operation. We estimate \$20M in wholesale crop value — the state's No. 3 cash crop in year one. Regulators expect cannabis farms to yield 4.54 metric tons in the first 12 months of operations.

**Adult-use cannabis licenses: 203**

**Annual adult-use cannabis production:**  
5 metric tons

**Value of adult-use cannabis production in dollars:**  
\$20M

**Adult-use cannabis rank among state crops: #3**

Crop	Annual wholesale value
1. Hay	\$147 million
2. Maple syrup	\$56 million
3. Cannabis	\$20 million

Data sources: Leafly, Whitney Economics,  
USDA Economic Research Service

## Washington

One of America's oldest legal states does not report basic cannabis crop production or value. (Or much else, for that matter; Washington's public data reporting has been a disaster for years.) We made our estimates using the latest available retail sales data.

We found 1,070 licensed farms, down from 1,091 in the prior year. Washington grossed \$1.497B in sales of all products combined in 2021. That's \$350 million in revenue to the farmers. (We overestimated last year, due to ongoing poor data issues.) A \$350M adult-use cannabis crop would rank seventh in Washington, behind the state's famous cherries. Based on wholesale prices, we estimate 317 metric tons of production a year, up 63 metric tons from our last report. But we have low confidence in year-over-year comparisons due to Washington's poor data availability.

**Adult-use cannabis licenses:** 1,070

**Annual adult-use cannabis production:**

317 metric tons (up 25% YOY)

**Value of adult-use cannabis production in dollars:**

\$350M (down 46% YOY)

**Adult-use cannabis rank among state crops:** #7

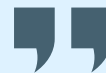
Crop	Annual wholesale value
1. Apples	\$2.2 billion
2. Wheat	\$740 million
3. Potatoes	\$712 million
4. Hay	\$661 million
5. Hops	\$482 million
6. Cherries	\$476 million
7. Cannabis	\$350 million

Data sources: Leafly, Whitney Economics, USDA Economic Research Service



*Prices of production continue to go up due to inflation and shipping costs while wholesale prices have taken a hit this year. Craft quality indoor cannabis still thrives over the mass influx of lesser quality material though; people will always enjoy buying top quality products.*

**Roger Hale, cultivation director  
Freddy's Fuego, WA**



### HOW ABOUT THAT!

One of the nation's oldest legalization states still does not report basic production information.



# California's cannabis market in focus: A year of turbulence

It's been a year of ferocious headwinds and striking political gains for legal cannabis farmers in the world's biggest adult-use market, California.

California legalized the adult use of marijuana in 2016, and the first retail stores opened in early 2018. There are currently 6,881 active cultivation licenses, although the largest farms "stack" multiple small licenses, so the actual number of incorporated farms is lower.

Over the years, the ramp-up of cheap, efficient legal cannabis production has caused the price per pound to fall. That was expected, but two unforeseen forces magnified this trend.

## 1

### Retail bottleneck

An undersupply of retail stores left millions of California consumers with no options to purchase weed grown by legal state-licensed farmers. This lack of stores is the result of local municipalities voting to ban regulated sales in their communities. As of 2022, 62% of California municipalities have "opted out" of retail sales.

## 2

### Large-scale illicit cultivation

California's massive infrastructure of illicit cannabis farms has also been encouraged to stay illicit because of minimal local and state law enforcement, combined with the high fees and regulatory costs of going legal. A September 2022 L.A. Times investigation found that neither state nor city regulators fined illegal growers for breaking the law and undermining the legal market. There is little to no incentive to pivot to a legal state-licensed operation.

California's adult-use cannabis cultivation tax revenue peaked in the third quarter of 2021 at \$43,318,220. Since then revenues have fallen, indicating farmer distress. First quarter 2022 cultivation tax revenues retreated to \$32,676,297 just as tax rates climbed from \$9.65/oz to \$10.08/oz.

Intense industry lobbying yielded results, though. In July, Gov. Gavin Newsom zeroed out the \$10.08/oz cultivation tax on farmers.

Two months later, Newsom signed a bill that would legalize interstate cannabis commerce, pending a deal with other states and the US Attorney General. State-licensed farmers want to stay afloat by meeting out-of-state demand the same way all farmers do.

Additionally, a separate bill clarified that cannabis farm insurers were not committing a crime by insuring cannabis farms — a move that should increase choice and lower insurance costs.

While California's wholesale cannabis prices continue to fall, the premium high-end price band has held steady. Growers of the best top-shelf bud — potent, aromatic, fresh, and pretty — expanded cultivation spaces in 2022. For example, Emerald Cup-winning Fig Farms doubled its 20,000 square foot operation in Oakland, and saw price declines as a boon for consumers.

In the coming year, more medium-and large-license growers are expected to come online, which will add to the competition. Meanwhile, the state is trying to streamline its cannabis bureaucracy and simplify regulations under a single Department of Cannabis Control, with a focus on lowering the state's notoriously heavy compliance burden. A statewide Unified Cannabis Enforcement Task

Force, announced in early October, aims to tackle the biggest illicit grows.

We think California's adult-use cannabis farmers could meet 100% of the state's demand as soon as 2023. But that would require the 62% of California municipalities that currently prohibit state-licensed retail stores to repeal their ordinances and allow regulated stores within their communities. Every season that goes by washes out small, legacy players, who are replaced by new, large groups who can tap rich investors to keep going.

(CannaPics for Leafly)





# Methodology

## What is a license?

There are 13,297 adult-use cannabis indoor and outdoor farming licenses in the United States as of Sept. 2022. But each license doesn't necessarily represent a simple two-acre farm. Different states may issue farming licenses for operations of dramatically different sizes.

In Washington state, for example, marijuana production occurs in three canopy brackets: Tier 1 (less than 4,000 square feet, about the size of a basketball court) up through Tier 3 (10,000-30,000 square feet, a little less than the size of a supermarket). Each state has different names for farms and rules around ownership. In California, one company may own dozens of farm licenses, a practice known as “stacking.” By contrast, Washington state limits each company to a maximum of three cannabis growing licenses.

We tried to count “active” licenses to capture businesses that are actually cultivating, as opposed to those who have just received permission to do so. Due to heavy red tape, it can take years of effort and millions of dollars to begin cultivating legally.

## What does it mean to “produce” cannabis?

Harvested cannabis comes in from the field at “wet weight.” It's then dried, and cured to achieve its “dry weight.” Dry weight is typically 10% to 15% of wet weight. We report dry, untrimmed weight — the most common raw form of the crop. Oftentimes, we must calculate untrimmed weight based on processed marijuana weight reports. We report total metric tons (one metric ton equals 2,205 pounds) of dried, cured, untrimmed bud produced by adult-use farms for the most recent 12-month reporting period. Some states publish production numbers for bud, as well as for trim, and “wet material.” Others do not. In general, we work with what consumers know the most and buy the most — dried buds, or flower.

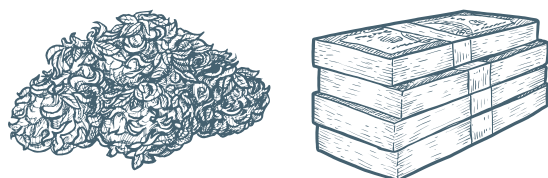




## How do we compute the value of America's wholesale adult-use cannabis crop?

To balance accuracy, fairness, and simplicity, we estimated wholesale crop value by multiplying each legal state's annual dry-weight cannabis production by a price per untrimmed pound.

In order to offer a fair dollar-for-dollar comparison with other crops, we measured cannabis production and value the same way that USDA economists measure crop value: the price it commands when it leaves the farm. In other words, we measured the wholesale value of dried cannabis as it passed from the farmer to one of three people: retailers, who purchase premium smokable flower, aka bud; extractors, who buy flower and cannabis trim to extract cannabis oil for edibles, vape cartridges, or concentrates; or wholesalers, who act as middlemen between farmers and retailers or extractors. These transactions are struck at wholesale prices for dried, trimmed pounds.



## So what's a pound worth?

We used the average, adjusted wholesale price per pound, for the most recent 12-month study period available in each state. For the crop value comparisons, we used USDA 2021 totals.

Each state has its own average weighted wholesale price per pound for its 12-month study period. We based our pricing off longitudinal data provided by Cannabis Benchmarks. In some states, we were able to compute production totals for the most recent 12 months, like June 2021 to July 2022. In other states, we used full-year 2021 data, and sometimes we used 2022 monthly reports to estimate annual totals (as with New Jersey, New Mexico, Montana, and Vermont). A wholesale pound of premium flower might go for \$863 in Colorado. That same pound might fetch \$3,553 in Illinois.

Cannabis is one of the most dynamic crops out there. The annual outdoor harvest floods the market in the fall, and the state markets silo production and prices. Every day, newly licensed farmers start growing and some older ones blink out. Some crops thrive, and some crops fail, and consumer demand also tends to fluctuate.

The illicit market is maybe three to four times as big as the regulated one, and legal cannabis can't travel across state lines, so farmers can't ship their crop to an out-of-state bidder offering a higher price.





## Averaging pricing and weights

Not all parts of the plant command the same price. Quality buds are the most valuable, while low-quality buds, or “smalls,” may sell for 70% of that price, and trim can go for 20% of that price. A dried pound of trimmed cannabis yields roughly 1/2 pound of flower, 1/4 pound of smalls, and 1/4 pound of trim.

In searching for a formula that balances accuracy, fairness, and simplicity, we found it helpful to work with a benchmark set by Nevada state regulators. Nevada taxes cannabis farmers using a pre-set “Fair Market Value at Wholesale” for flower (\$2,074/lb), small bud (\$1,426/lb), flower approved for extraction (\$295), trim approved for extraction (\$200), trim (\$254), wet whole plant (\$249), and immature plants (\$51). We rounded up and adapted Nevada’s numbers to create a per-pound formula for every pound of harvested, dried cannabis:

**Flower, 1/2 pound:  $\$2074 \times 1/2 = \$1037$**

**Smalls, 1/4 pound:  $\$1426 \times 1/4 = \$357$**

**Trim, 1/4 pound:  $\$254 \times 1/4 = \$64$**

**Total: \$1,458**

The conversion ratio for the value of a pound of trimmed A buds to an untrimmed, unsorted pound is .7028 this year. This is how we can convert the price of a trimmed pound into the price of an untrimmed pound, and normalize data across states.

## From harvest to hand



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## About the authors



### David Downs

Leafly Senior Editor David Downs received a Literary Excellence Award from Oaksterdam University in 2022. On the cannabis beat since 2009, he's published three books, including the best-selling cannabis crop science book 'Marijuana Harvest.' Downs guest lectured at the Loyola Marymount University Law School's Journalism Law School, UC Berkeley Extension, and contributed to Continuing Education of the Bar's Marijuana Law Hub, sponsored by University of California and the State Bar of California. Downs' work has appeared in San Francisco Chronicle, New York Times, Scientific American, Wired, Rolling Stone, The Onion, Columbia Journalism Review, High Times, Billboard, and many more. He holds a bachelor's degree in English Literature from UC Santa Barbara, and was a Fellow at the Medill School of Journalism's Academy of Alternative Journalism in Chicago.



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Leafly Senior Editor Bruce Barcott is the author and executive producer of the annual Leafly Jobs Report. He hosts the weekly podcast 'The Roll-up' and is the author of the book 'Weed the People.'

### Beau Whitney

Beau Whitney is an economist, business consultant, policy analyst, and the founder of Whitney Economics.

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