CANNABIS RESEARCH CENTER

SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF MINNESOTA

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Self-reported Cannabis Use Patterns Among Minnesota State Fair Survey Respondents

Edibles and Beverages Were Most Popular, Mostly Obtained From Commercial Sources

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Summary

Using a survey conducted by the Cannabis Research Center at the 2024 Minnesota State Fair, this brief examines data on Minnesota adults' self-reported use of cannabis, including the products that respondents reported using, how often they reported using cannabis products, and where they reported obtaining them.

INTRODUCTION

During the 2024 Minnesota State Fair, researchers from the Cannabis Research Center (CRC) at the University of Minnesota School of Public Health surveyed fair attendees about issues relating to cannabis. The survey was conducted during a time of transition for the state's cannabis policy landscape.

In 2022, the Minnesota Legislature formalized the legal status of hemp-derived tetrahydrocannabinol (THC) edible and beverage products in the state. Soon afterward, hemp-derived THC products, which are similarly intoxicating as other cannabis products, became widely available at a variety of retailers, including convenience stores, gas stations, liquor stores, breweries, and other stores.

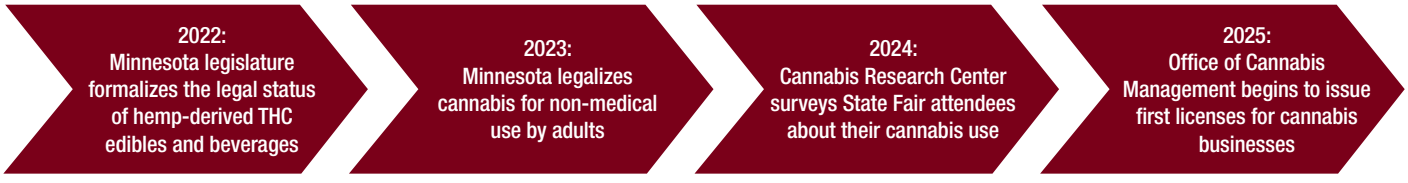
The next year, in 2023, the Minnesota Legislature legalized cannabis for non-medical use by adults age 21 and older, commonly referred to as "adult-use cannabis." While possession and use by adults became legal that same year, opening of cannabis stores for non-hemp cannabis was not immediately allowed. The delay in allowing adult-use cannabis stores was aimed at giving the state time to establish a regulatory and enforcement infrastructure through the new Office of Cannabis Management. As of the time this brief was written (August 2025), state-licensed cannabis dispensaries had yet to open in Minnesota.

Given this context, the 2024 State Fair cannabis survey was conducted in an environment in which hemp-derived THC products were legal and widely available for retail sale in the state. While other non-hemp cannabis was legal for adults to use and possess, stores were not yet open with the exception of a few cannabis dispensaries located on tribal land in the state.

To learn more about how people were using cannabis products in the state during these major policy changes, the 2024 State Fair survey asked respondents a variety of questions relating to cannabis. This brief focuses on the following issues related to cannabis use and products:

- Whether respondents reported using cannabis in the past year
- What types of cannabis products respondents reported using
- How frequently respondents reported using cannabis products
- And where respondents reported obtaining cannabis products

Figure 1: Recent Minnesota Cannabis Developments



BACKGROUND

For nearly a half-century, the U.S. Controlled Substances Act outlawed the possession, use and sale of cannabis products. While "marijuana" — as prohibited cannabis is known by the U.S. government — has remained an illegal substance under federal law, what began as a strict prohibition has eased over time.

States have largely led the way in the loosening of cannabis restrictions. In the 1990s, a cascade of states developed medical programs that allowed people to obtain and use cannabis to treat certain medical conditions. Then in 2012, Colorado and Washington becoming the first states to legalize cannabis for non-medical use by adults.[1] By 2025, 24 states and the District of Columbia had legalized adult-use cannabis.

In 2018, the federal government took the historic step of relaxing its definition of illegal marijuana. Though the U.S. Controlled Substances Act originally prohibited all forms of cannabis, the 2018 Farm Bill carved out a new legal definition for "hemp," removing federal prohibitions on cannabis with exceptionally low levels of delta-9 THC — the main psychoactive, or mind-altering, compound in cannabis that makes people feel "high."[2]

Effectively, this created two separate types of cannabis plants — both forms of the species Cannabis sativa — under federal law: 1) federally allowed "hemp," distinguished by its low levels of delta-9 THC, and 2) federally prohibited "marijuana" with levels of delta-9 THC that exceed the limits for hemp.

The change in federal law that differentiated hemp from prohibited marijuana paved the way not only for the production of a variety of industrial and consumer products from hemp fiber, but also for products containing cannabidiol (CBD), a non-psychoactive cannabis compound that some claim may have health benefits.[3] The legalization of hemp also resulted in a market for some psychoactive THC products, made possible by extracting and concentrating the small amount of delta-9 THC legally allowed in hemp, or by using hemp to create semi-synthetic delta-9 THC or similar THC compounds, such as delta-8 or delta-10 THC. These THC compounds are then often infused into products such as gummies and other edibles, and beverages.

In response to the growing availability of hemp-derived THC products, the Minnesota Legislature in 2022 passed legislation clarifying the legal status and setting certain rules for edible and beverage products containing hemp-derived delta-9 THC — effectively legalizing their sale in the state. Since then, thousands of businesses from throughout the state have registered with the Minnesota Office of Cannabis Management to sell hemp-derived edibles and beverages.[4]

The federal government still prohibits non-hemp "marijuana," but it has largely taken a hands-off approach to state legalization initiatives. While federal law imposes numerous restrictions relating to non-hemp cannabis — such as transportation of cannabis across state borders — it deemphasized enforcement of certain activities that states have legalized, such as "possession of small amounts … and sale" of state-regulated cannabis products.[5]

Under those circumstances, the Minnesota Legislature legalized adult-use cannabis in 2023. The law allowed people to possess and grow limited amounts of cannabis for their own use legally, as well as to share with friends and family. The law also established a framework to allow for the legal production and sale of non-hemp cannabis products in the state, but it postponed the implementation of legal sales until the newly created Office of Cannabis Management could develop the necessary regulatory and enforcement infrastructure to govern a legal market. As of the time this report was written, Minnesota had yet to allow legal sales of cannabis, except for a few tribally operated cannabis dispensaries (operated both on and off tribal land), aside from hemp-derived THC products.

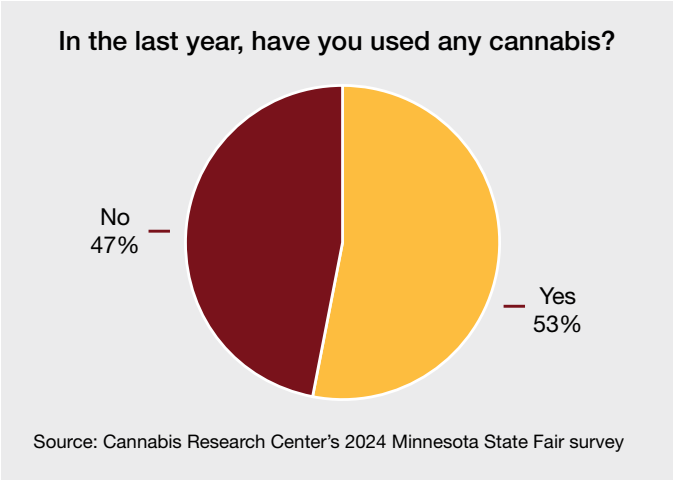
SELF-REPORTED CANNABIS USE AMONG ADULTS AT THE MINNESOTA STATE FAIR

The Cannabis Research Center's survey was conducted at the University of Minnesota's Driven to Discover building during the 2024 Minnesota State Fair. The study team recruited 1,716 volunteers for the survey, limiting participation to adults (age 18 and older).[6] The purpose of the survey was to examine a variety of issues related to cannabis in an evolving policy landscape, in part to help policymakers understand the public health implications and to craft evidence-based cannabis policy.

Among survey respondents, a slight majority (53%) reported having used cannabis products at least once in the past year (see Figure 2). It is notable that the self-reported prevalence of cannabis use in the past year from this Minnesota State Fair survey is substantially higher than other recent national estimates of cannabis use among adults. For instance, the 2023 National Survey on Drug Use and Health (NSDUH), a large annual survey sponsored by the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), found that 23.0% of U.S. adults age

18 and older reported using "marijuana" in the past year.[7] The high prevalence of self-reported cannabis use among the State Fair survey respondents suggests that the convenience sample among self-selected attendees of the Minnesota State Fair may not be entirely representative of the overall state population. Additionally, it may also reflect relatively wide availability of hemp-derived THC products in Minnesota. Regardless, the purpose of this survey was not to produce a reliable estimate of the prevalence of cannabis use in the state, but rather to *better understand in greater detail the experiences of people who do report using cannabis*. From this point forward, *this report focuses on survey responses from those who reported that they had used cannabis in the past year.*

Figure 2: Prevalence of self-reported cannabis use in past 12 months, 2024 Minnesota State Fair survey participants



Source: Cannabis Research Center's 2024 Minnesota State Fair survey

TYPES OF CANNABIS PRODUCTS

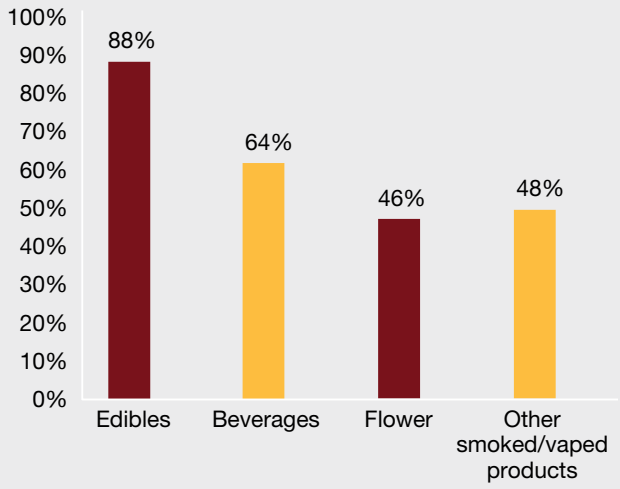
Among the 916 survey participants who reported using cannabis in the past year, we asked follow-up questions about the types of products they used, how frequently they used cannabis products, and where they obtained cannabis products. These kinds of detailed questions are important because not all cannabis use is necessarily equivalent, so we want to better understand the nuances of how people use cannabis to understand the potential public health implications.

There may be different benefits or risks to different forms of cannabis use. For instance, smoking of cannabis is likely to entail different risks than consumption of edible cannabis products, as the combustion process produces small particulate matter and other potentially harmful by products.[8,9] Additionally, while intoxication from inhaling cannabis products through the lungs can result almost immediately, intoxication from oral consumption of cannabis products can take much longer, and that lag sometimes results in people experiencing greater intoxication than intended.[10] Edible products also may have particular benefits when used for certain health conditions, such as diseases of the digestive system, because of how and where they are absorbed and processed in the body.[11]

Among self-reported cannabis users, the product category they most commonly reported using was edibles, such as "gummies." Almost 9 in 10 cannabis users (88%) said they had used edible products in the past year (Figure 3). Beverages were the product category that was second most commonly reported among cannabis users, at more than 6 in 10 people (64%).

Almost half of respondents (46%) who reported using cannabis in the past year said they used cannabis flower, the term for the products obtained directly from the plant (often dried "bud" or flower, the part of the plant that contains the highest concentration of THC). A similar share of 48% — or almost half — of respondents who reported using cannabis in the past year said they smoked or vaped cannabis products other than flower. This relatively broad category of products may include vaporizing cartridges, and/or the use of high-concentration THC products, such as hash oil and "dabbing" of waxes.

Figure 3: Product types used by self-reported cannabis users, 2024 Minnesota State Fair survey participants



Source: Cannabis Research Center's 2024 Minnesota State Fair survey

FREQUENCY OF USE BY CANNABIS PRODUCT TYPE

Similar to how the public health implications of cannabis use may differ by product, they may also differ according to how frequently people use those products. For instance, a review of research by a National Academies of Science panel found evidence of a relationship between cannabis use and various mental health conditions — including anxiety and depression — and that the associations often appeared stronger with more-frequent cannabis use.[12]

We observed different patterns in the frequency by which respondents reported using cannabis products (Figure 4). For both edibles and beverages, infrequent use (once to a few times per year) was most common, and the prevalence trailed off for more frequent categories of use (once to a few times per month, once to a few times per week, once to multiple times per day).

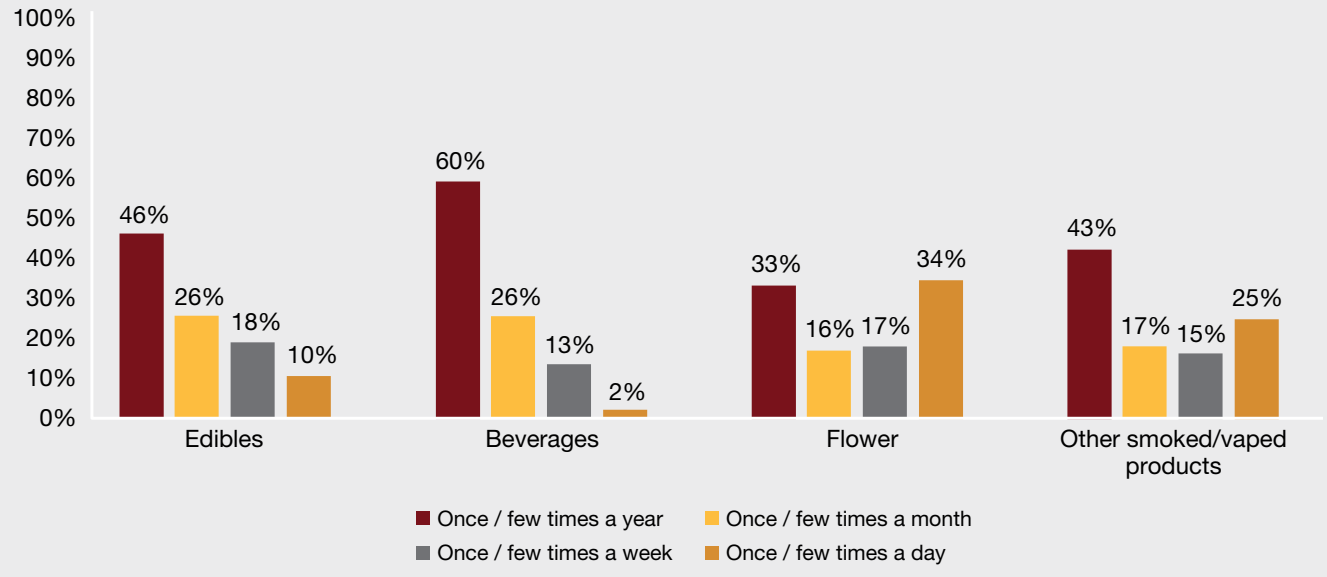
Among the 805 people who reported using edibles, almost half (46%) reported using them just once to a few times per year, and only 1 in 10 reported using them once or multiple times per day. Among the 582 people who reported using beverages, 6 in 10 reported using them just once to a few times per year, and less than 1 in 10 respondents (2%) reported using them once or multiple times per day.

By contrast, flower and other smoked or vaped products presented a different pattern. For flower, both rarely (once to a few times per year) and often (once to multiple times per day) were most common, while frequency between those was less common.

Similar percentages of the 417 respondents said they used flower products once to a few times per year (i.e., rarely), and once to multiple times per day (i.e., often), at about 3 in 10 people for each category. Additionally, similar percentages of respondents said they used flower products once to a few times per month and once to a few times per week, at about 2 in 10 people.

For other smoked and vaped products, the pattern was similar to flower, but leaning more toward rare use. Of the 439 respondents who reported smoking or vaping other products, roughly 4 in 10 respondents reported using them once to a few times per year (i.e., rarely), while about a quarter of respondents reported using them once or multiple times per day (i.e., often).

Figure 4: Frequency of product types used by self-reported cannabis users, 2024 Minnesota State Fair survey participants



Source: Cannabis Research Center's 2024 Minnesota State Fair survey

SOURCES OF CANNABIS BY PRODUCT TYPE

Understanding where people obtain cannabis is also likely to have public health implications. For instance, there may be different risks associated with cannabis that is produced and sold illicitly in comparison to commercially produced cannabis products, which will be subject to state regulations. Our survey asked respondents how they obtained cannabis products, and we categorized their responses into policy-relevant groupings (Figure 5).

Our survey returned distinctly different patterns in how respondents said they obtained edibles and beverages compared to flower and other smoked or vaped products. The most common source for edibles and beverages was commercial (Figure 4), while the most common source for flower and other smoked and vaped products was social.

Among people who reported using edibles, about 7 in 10 said they obtained them from commercial sources, while roughly 2 in 10 said they received them from social sources, and only 1 in 10 reported obtaining them from illicit sources. Among people who reported using beverages, almost 9 in 10 said they obtained them from commercial sources, and about 1 in 10 reported getting them from social sources (Figure 6).

Figure 5. Cannabis product sources

Our survey asked detailed questions about where people obtained cannabis, which we combined into the following policy-relevant categories:

Commercial sources

- Bought from a retail store that sells only cannabis products
- Bought from a store that doesn't specialize in cannabis products (e.g., grocery store, gas station)
- Bought online

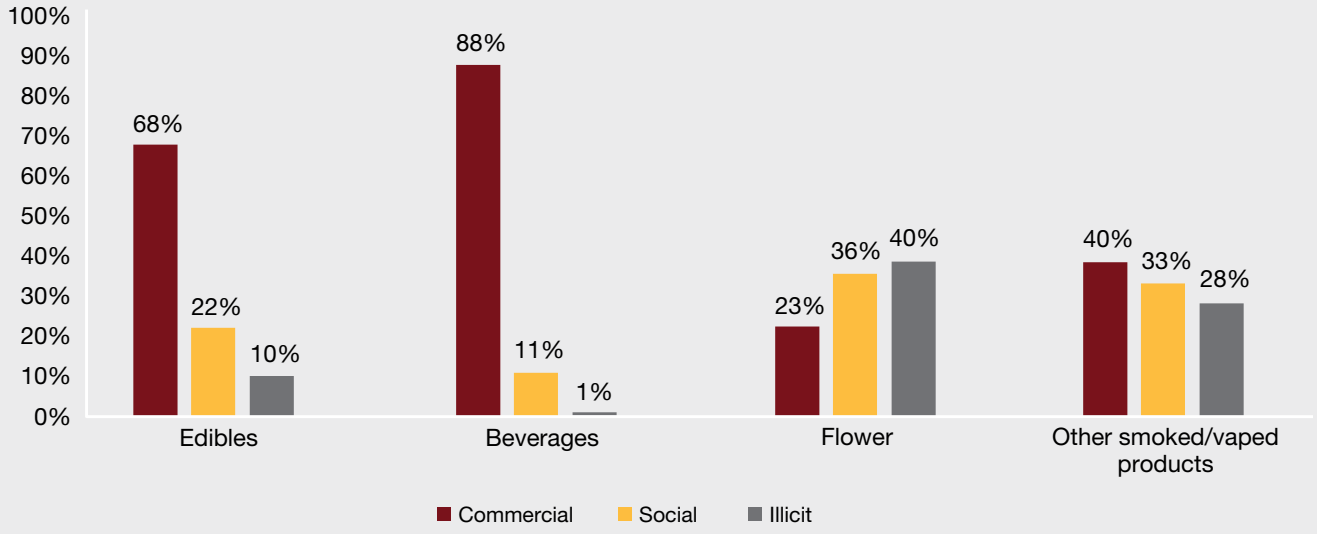
Social sources

- Got it for free or shared someone else's
- Grew it yourself or had someone grow it for you

Illicit sources

- Bought it from a dealer
- Bought it from a friend

Figure 6: Sources of product types used by self-reported cannabis users, 2024 Minnesota State Fair survey participants



Source: Cannabis Research Center's 2024 Minnesota State Fair survey

Among people who reported using flower, 4 in 10 reported obtaining it from illicit sources and almost 4 in 10 reported obtaining it from social sources, while about 2 in 10 said they received it from commercial sources. Among people who reported using other smoked and vaped products, 4 in 10 reported getting them from commercial sources, just over 3 in 10 reported getting them from social sources, and almost 3 in 10 reported getting them from illicit sources.

These patterns were likely influenced by Minnesota's cannabis policy and market landscape at the time of the survey, which have been evolving in recent years. While it became legal in the summer of 2023 for age 21 and older people to possess and use cannabis, it was not yet legal at the time of this survey to sell cannabis (and no legal retail stores were open, except on tribal lands). An important exception is that hemp-derived THC products could be sold legally in the state since the legislature formalized their status under state law in 2022, and at the time of the survey, they were sold throughout the state at variety of retailers (e.g., grocery stores, gas stations, breweries, etc.).

Another complexity is that sovereignty allowed American Indian tribes to legally sell cannabis at dispensaries on tribal land located within Minnesota, including some which had already opened at the time of this survey. Additionally, at the time of this survey, adults in Minnesota were authorized to grow limited amounts of cannabis for personal use and to share with friends and family, though they could not legally sell it.

Considering this landscape, it is likely that many of the cannabis edibles and beverages that respondents reported using were hemp-derived THC products, as a sizable majority of people who said they used those products said that they obtained them from commercial sources. For flower, it is unsurprising that a sizable majority of people who reported using these products said they obtained them from social or illicit, since cannabis flower was not legal to sell in Minnesota at the time of the survey (aside from dispensaries on tribal land).

The situation appears more complex for other smoked or vaped cannabis products. While most people who reported using these products said they obtained them from social or illicit source, a sizable share of 4 in 10 (40%) said they obtained them from commercial sources. That seems surprising, since the only cannabis products that could be legally sold in Minnesota were hemp-derived edibles and beverages (with other, non-edible and beverage products being explicitly prohibited), and non-hemp cannabis products were not legal to sell in Minnesota at the time of this survey. It may be that individuals reporting use of these products obtained from tribal dispensaries; purchased them online, which may or may not have been a legal transaction; used them in other jurisdictions where cannabis could be legally sold (e.g., states, Canada); purchased them from a store in Minnesota that was selling the products illegally; or purchased them in other jurisdictions and transported them for use in Minnesota (though this is prohibited by the federal government).

CONCLUSION AND IMPLICATIONS

These results from the University of Minnesota Cannabis Research Center's 2024 State Fair survey give some of the first indications of how Minnesota adults are using and obtaining cannabis products in the legalization era.

Among the notable findings, we found that at the particular time in the evolution of Minnesota's cannabis policy and market landscape, edible and beverage cannabis products were the most commonly used by respondents. Most people who reported using cannabis products in the past year said they used edibles and beverages; a smaller but still sizeable share (almost half) of self-reported cannabis users said they used flower, and smoked or vaped other cannabis products.

The frequency by which respondents reported using cannabis varied by product type. For edibles and beverages, the most commonly reported frequency was once or a few times a year, with prevalence trailing off for more frequent use. For flower, infrequent use (once or a few times a year) and frequent use (once or multiple times a day) were approximately equally common. And for other smoked and vaped products, infrequent use (once or a few times a year) was most common, followed by frequent use (once or multiple times a day).

The sources people reported using to obtain cannabis products also give us insights into the dynamics of the marketplace at this time of transition, as well as additional hints about the products people are using. For both edibles and beverages, people most commonly reported obtaining these from commercial sources. That suggests respondents were mainly using hemp-derived THC products, since these were the only cannabis products available for commercial sales in Minnesota in 2024 (except from dispensaries on tribal land). These patterns were likely influenced by Minnesota's cannabis policy and market landscape at the time of the survey, which have been evolving in recent years.

For flower and for other smoked and vaped products, the most common way people reported obtaining these products was social sources. However, some also reported obtaining them from commercial sources, even though these weren't legally available for sale in Minnesota in 2024 (except on tribal land), raising questions about whether people obtained these from stores selling unauthorized products or from out-of-state state stores.

These results give us important insights into the ways people use cannabis products in Minnesota. However, it will be critical to continue to study these and other questions as the landscape continues to evolve. There are major impending changes — for instance, the beginning of legal retail sales of cannabis products across the state — that are likely to change the ways that people in Minnesota use and obtain cannabis in the near future. To understand and optimize the public health implications of cannabis policy in Minnesota, we need to understand the details of how people obtain and use cannabis, and how they respond to changes in the cannabis policy landscape.

The University of Minnesota School of Public Health Cannabis Research Center (CRC) strives to understand the health implications of cannabis and be a trusted source of information to guide policy and practice related to cannabis use.

To accomplish this, the CRC:

- Conducts timely and Minnesota-centered research on both the positive and negative health effects of cannabis.
- Studies issues pertaining to equity in cannabis production, sales, marketing, and use.
- Provides interpretation and contextualization of research findings.
- Collaborates with state and local agencies, policymakers, and community members to ensure information is responsive to needs and accessible to all Minnesotans.
- Trains and supports future practitioners and scholars to engage in research related to cannabis policy and its effects on health and health equity.

To learn more about the Cannabis Research Center visit: z.umn.edu/CannabisResearchCenter

Cannabis Research Center
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REFERENCES

[1] Even before states began legalizing cannabis for non-medical use by adults, many had developed medical cannabis programs to allow people to use cannabis products to treat health conditions under certain circumstances. Though the federal prohibition on cannabis as a Schedule I Controlled Substance makes no exception for medical use, it has not intervened to stop those state programs.

[2] The 2018 Farm Bill defined "hemp" as: "the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol [THC] concentration of not more than 0.3 percent on a dry weight basis."

[3] This brief does not focus on CBD-only hemp-products (i.e., those without THC). However, it is important to acknowledge their existence, as not all hemp-derived products contain THC.

[4] State of Minnesota Office of Cannabis Management. Information for Registered Businesses. Accessed July 11, 2025. https://mn.gov/ocm/businesses/cannabinoid-products/registered-businesses.jsp

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[6] While the survey included State Fair attendees who reported living inside and outside Minnesota, this analysis is limited to respondents who said they lived in Minnesota.

[7] U.S. Substance Abuse and Mental Health Services Administration. Data Analysis System, 2023 National Survey on Drug Use and Health public use data. Accessed July 7, 2025. https://datatools.samhsa.gov/das/nsduh/2023/nsduh-2023-ds0001/crosstab?row=MRJYR&column=CATAGE_RECODE&weight=ANALWT2_C&recodes=CATAGE_RECODE%7C2%3D18%2B%263%3D18%2B%264%3D18%2B%261%3Dless%20than%2018

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