



SYSTEM 420 HYBRID GREENHOUSES

White Paper

Cannabis Legal Changes & Future Trends

January 27, 2016

Background

The emerging cannabis market has been the result of growing public acceptance and legal changes over the past 20 years. This transition is fueling medical research and providing tax revenues for local and state governments. 2016 is an especially pivotal year with ballot initiatives in a large number of states with other states looking to make changes through their legislative process. With the looming presidential election, 2016 will impact the cannabis industry for a long period of time.

Nexus Greenhouse Systems is a manufacturer with a 50-year track record. Headquartered in Colorado, the epicenter of the cannabis market, Nexus projects total nearly 800,000 sq. ft. of growing space in eight states. Production plants are strategically located in Colorado and Illinois for convenient shipping to the entire U.S.

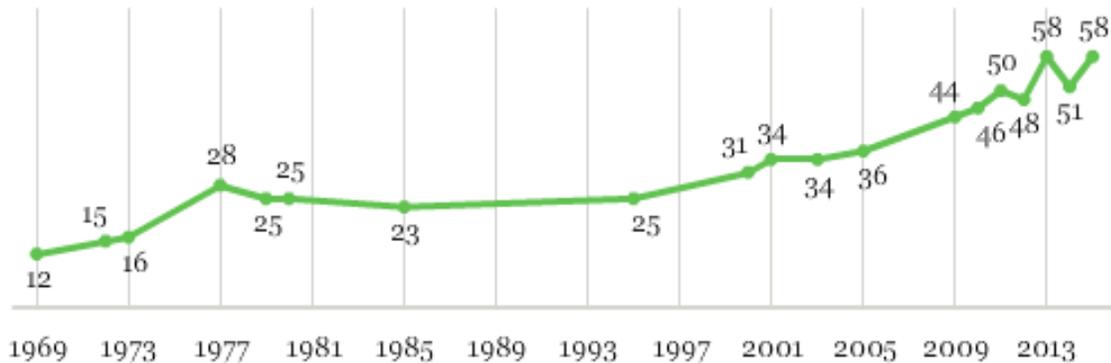
With a System 420™ hybrid greenhouse from [Nexus](#), the grower can receive the privacy benefits of the indoor grow and the modern agricultural practices of the greenhouse. Cannabis crop efficiency, reduced operating costs, natural sunlight, and a healthier work atmosphere can be achieved in a hybrid greenhouse growing environment.

[Nexus](#) designs high quality, commercial greenhouses for the traditional horticulture and the emerging cannabis markets. The company partners with supplemental equipment providers, and manages integrated greenhouse development. This white paper takes a look at the current state of the cannabis industry as well examines new legal changes and future trends.

Increasing Public Cannabis Acceptance

Do you think the use of marijuana should be made legal, or not?

■ % Yes, legal



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This chart shows the increasing public acceptance of cannabis especially since 2003. As these acceptance rates remain above 50%, significant opportunities exist for amending public policy in favor of cannabis legalization.

Support for Legalizing the Use of Marijuana, by Age Group, 1969-2015, Selected Polls

	1969	1985	2000/2001	2015
	%	%	%	%
National adults	12	23	33	58
18 to 34 years old	20	32	44	71
35 to 49 years old	11	22	34	64
50 to 64 years old	6	16	30	58
65+ years old	4	13	17	35

Note: Analysis uses combined data from 2000 and 2001 because 2000 survey asked the question of a half-sample of respondents

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The trend towards legalization should continue in the years ahead as younger people move into older age groups. This movement may shift public acceptance rates to above 60%.

Recent Changes

The cannabis market is strong in the states which have legalized recreational marijuana with the following numbers:

- Colorado will likely top \$1 billion in combined recreational and medical sales in 2015 – a 42% increase over 2014
- Washington surpassed \$500 million in combined recreational and medical sales in 2015
- Oregon recreational revenues reached \$12 million during the first week of sales beginning October 1, 2015

The pace of sales in Oregon was remarkably fast. Colorado sold \$5 million during its first week and Washington reached \$2 million in sales after four weeks. Medical sales saw strong growth in Arizona, Connecticut, Michigan, Montana, and New Mexico. Additional dispensary growth occurred in New Jersey and Delaware. New York and New Hampshire awarded medical marijuana licenses, and Maryland finalized compliance programs and initiated its licensing process.

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The cannabis-infused product market has skyrocketed with revenue of nearly \$1 billion with most of these sales from edibles. Many individual dispensaries say edibles account for at least 25% of their business and for others the percentage is much higher. In Colorado, some recreational dispensaries state that edible sales consist of 60% of their overall business. California and Colorado rank as the largest edible markets in the country for both recreational and medical. Tourists can be more inclined to purchase edibles over raw cannabis since these products are less conspicuous and easier to consume.

Lower potency edible products are increasing in popularity as well as mandated through governmental compliance. Even though high potency products can be popular with heavy users, the intensity level is often too high for product newcomers or seniors. In Colorado, new regulations on edible manufacturers have accelerated the trend to lower-potency products. For example, current products have a concentration of 10 milligrams of THC vs. 100 milligrams for products in 2014.

The shift towards lower concentration levels makes it more difficult for someone to over-consume THC in one sitting. Edibles are moving beyond the brownie/cookie/chocolate format to other sugar-free options, such as granola bars. Companies are working on ways to make their products more recognizable or brand-specific to avoid confusion with regular food products. This effort is necessary to avoid inevitable lawsuits from consumers who ingest too much of specific product or does not distinguish a marijuana product from a regular food product.

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Potential State Legalization - Recreational

Throughout 2016, many ballot initiatives, and legislative bills will unfold. Given the diversity of cultural and political differences among the many states, individual states tend to modify their laws based upon the realistic parameters within their jurisdictions. Thus, some states move to full legalization while others seek CBD/medical use changes. Many of the states with the highest probability for legalization also have large populations:

State	Population (Mil)
California	38,802,500
Florida	19,893,297
New York	19,746,247
Massachusetts	6,745,408
Arizona	6,731,484
Maryland	5,976,407
Wisconsin	5,757,564
Connecticut	3,596,677
Nevada	2,839,099
Rhode Island	1,055,073
Total	111,143,756

Total US Population – 320,746,592

Percentage of US Population living in potentially new legalized states – 34.6

Currently Legalized States

State	Population (Mil)
Washington	7,061,530
Colorado	5,355,856
Oregon	3,970,239
Alaska	737,732
Total	17,125,357

Percentage of US Population living in currently legalized states – 5.3

Combined (new & current) percentage of US Population living in legalized states – 39.9

States have different processes for legal changes including ballot initiatives and state legislation. For those states with a ballot initiative process, a specific number of signatures are required for placement on the voter ballot. Then, either a majority or a 60% threshold (Florida) is required for passage, which bypasses the state legislature.

States – Potentially legalize through ballot initiative:

- California
- Nevada
- Arizona
- Florida

States – Potentially legalize through state legislature:

- New York
- Massachusetts
- Maryland
- Wisconsin
- Connecticut
- Rhode Island

Potential State Legalization – Medical

States	Population
Pennsylvania	12,787,209
Ohio	11,594,163
Michigan	9,909,877
Missouri	6,063,589
Total	40,354.838

Percentage of U.S. Population with Potential States for Cannabis Medical Legalization – 12.6%.

Combined Population with Recreational & Medical Legalization – 47.2%

The above data is only for new legislative changes. When these numbers are added to the states currently with recreational and medical laws (four states – rec and 23 medical), the percentages of the U.S. living in states with some degree cannabis legislation goes even higher.

Current Status of State Legalization

Percentage of U.S. Population in Current Medical-Only States – 41.5%

- Arizona
- California
- Connecticut
- Delaware
- Hawaii
- Illinois
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Montana
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- Rhode Island
- Vermont

CBD-Only – 35.7%

- Alabama
- Iowa
- Florida
- Georgia
- Kentucky
- Mississippi
- Missouri
- North Carolina
- Oklahoma
- South Carolina
- Tennessee
- Texas
- Utah
- Wisconsin

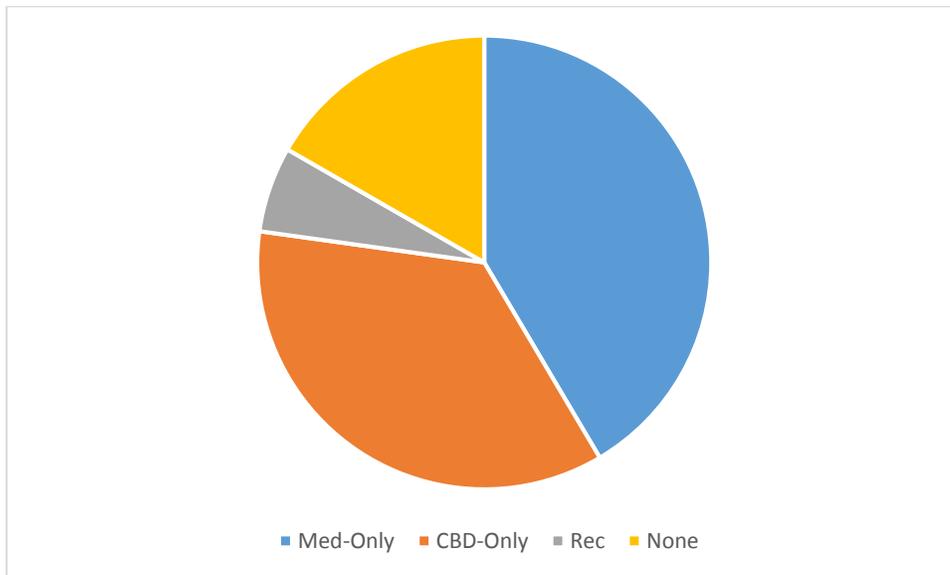
Recreational – 6.1%

- Alaska
- Colorado
- Oregon
- Washington
- Washington D.C.

No Legalization - 16.7%

- Arkansas

- Idaho
- Indiana
- Kansas
- Nebraska
- North Dakota
- Ohio
- Pennsylvania
- South Dakota
- Virginia
- West Virginia
- Wyoming



Percentage of U.S. Population Currently Living with Combined Recreational, Medical or CBD Legalization – 83.3%

A substantial majority of U.S. states have made legal changes regarding cannabis. Over the next two years, many states will make an effort to increase the level of legalization or perhaps, full legalization may occur on a national basis.

Financial

Banking and financing within the cannabis industry continues to be a major challenge. While cannabis remains a Schedule 1 narcotic within the Controlled Substances Act, banks are usually not comfortable managing demand deposits for cannabis dispensary and related businesses. The U.S. Justice Department has issued the Cole Memorandum that outlines the areas when their department will take action. Thus, the following violations could invite legal action from their department:

- Distribution to minors
- Sales to criminal enterprises, gangs, and cartels

- Diversion from states where cannabis is legal to states where it is illegal
- Using cannabis as a cover for other illegal drugs or activity
- Engaging in violence or using firearms in cultivation and distribution
- Drugged driving and other adverse public health risks from cannabis
- Growing on public lands, engaging in unsafe public health practices or environmental dangers
- Possessing or using marijuana on federal property

Banking

Even though banking operations with dispensaries who meet state compliance regulations should not pose a threat of action from the U.S. Justice Department, banks prefer to base their operations on specific federal laws instead of memorandums from governmental agencies.

Several banks including M-Bank, based in Oregon and First Security Bank of Nevada stopped serving the cannabis industry after initially starting. Also, Four Corners Credit Union in Denver did not receive a master account number from the Federal Reserve, and was not able to open for business to the dispensaries and other cannabis companies. Lloyd's of London, which served many cannabis companies for insurance services, stopped working in the cannabis industry due to federal regulatory concerns.

Investment

Traditional banking lending options, such as the U.S Small Business Administration and U.S. Department of Agriculture, are inaccessible to cannabis business owners due to federal legality, and private investors are filling the void. With private investors, the business owners obtain the financing that they could not obtain through traditional sources, and investors receive returns-on-investment, which are better than average. In addition to private equity funding, investors are providing debt financing with interest rates at higher levels than other industries. However, the business owners do not need to dilute their equity to obtain financing.

CBD

For many people, cannabidiol (CBD) is the future of cannabis medicine. As noted earlier, CBD laws have emerged in a rapidly increasing number of states. This legalization trend has led to a substantial increase in the number of new CBD manufacturers throughout the U.S.



A ready to consume bottle of CBD oil

CBD is extracted and separated from specific varieties of cannabis, including hemp. Chemically, CBD is one of 85 chemical substances known as cannabinoids, which are all found in the cannabis plant. CBD is the second most abundant compound in hemp, typically representing up to 40% of its extracts.

The tangible benefits are becoming apparent. There is fairly high certainty that CBD has been shown to be effective for decreasing anxiety and helping in a number of inflammation-related problems, including arthritis and other inflammatory ailments as well as multiple sclerosis. CBD has been shown to inhibit the growth of some bacteria, which cause several difficult-to-treat infections. CBD also has strong antioxidant properties.

Hemp

Hemp can be grown as a renewable source for raw materials that can be incorporated into thousands of products. Fibers and stalks are used in clothing, construction materials, paper, biofuel, plastic composites, body lotions, foods, and health supplements.

There are many different varieties of the cannabis plant. Hemp (also called industrial hemp) refers to the non-psychoactive (less than 1% THC) varieties of *Cannabis Sativa L.* Both hemp and marijuana come from the same cannabis species, but are genetically distinct and are further distinguished by use, chemical makeup, and cultivation methods.

Considerable debate has occurred suggesting that CBD derived from industrial hemp has the same properties as cannabis-derived CBD, making it a potential alternative for patients who can't legally access medical marijuana, but can legally acquire hemp-derived CBD products. There is a strong legal argument that production and distribution of CBD oils/products derived from imported raw material industrial hemp is not a violation of the Controlled Substances Act (CSA).



Growing hemp inside a greenhouse

In 2015, the Hemp Industries Association (HIA) estimated the total retail value of all hemp products sold in the U.S. at \$620 million. Hemp is an attractive rotation crop for farmers. As it grows, hemp breathes in CO₂, detoxifies the soil, and prevents soil erosion. Hemp requires less water to grow and does not need pesticides.

The 2014 US Farm Bill allows states that have passed their own industrial hemp legislation to grow industrial hemp for purposes of research and development. Several states, including Kentucky, Colorado, and Oregon, are already conducting hemp pilot projects. Many other states are pursuing similar legislation and programs. After many years of illegality, American farmers are reconsidering the cultivation of industrial hemp.

In January of 2015, The Industrial Hemp Farming Act (H.R. 525 and S. 134) was introduced in the House and Senate. If passed, the bill would remove all federal restrictions on the cultivation of industrial hemp, and remove its classification as a Schedule I controlled substance.

Future

The demographic data discussed earlier in this report shows that public opinion as well state laws regarding cannabis use are significantly evolving. Overall public favorability for legal cannabis has increased from 12% in 1969 to 58% today. This consistent increase over the past 40 years directly pushes the legal changes, which should continue as public acceptance moves over 60% favorability.

Each unique state takes different sized steps. Many states in the Midwest and Southeast do not have sufficient public support for recreational legalization. However, many of these states can pass new laws for medical use or CBD-only. At the present time, only 16% of the US population lives in a state with no form of legalization at all. If this number declines, then the pressure for national laws supporting different forms of cannabis legalization will inevitably grow.

Recreational legalization brings the most controversy due to concerns about higher consumption and crime patterns. According to data from the City of Denver and the Colorado

Dept. of Transportation, violent and property crime as well as traffic fatalities decreased by 2.2% and 3% respectively in 2014. The causal factors for this decline are uncertain, which may be linked to community policing and traffic enforcement efforts. Yet, one conclusion is undeniable crime and traffic fatalities did not increase. Many studies have shown that most of recreational marijuana consumed have been from consistent heavy users and tourists. Thus, since legalization started in Colorado, the number of new recreational cannabis users has been fairly small.

Beyond recreational cannabis, the future of medical, CBD, and hemp will further expand the market to demographic segments, who have little interest in consuming THC. The ability of CBD products to provide additional painkilling options with less side effects in place of commercial pharmaceutical drugs is substantial. As further medical research shows promise for treating a wide range of diseases and chronic health conditions, significant opportunities for cannabis-related products will emerge.

Hemp is a product with vast opportunities for clothing, fuel, food, and CBD oil. Due to the non-psychoactive aspect, there is far less controversy. Hemp can also provide a boost to farming economies in rural geographic areas within the U.S.

At this point, the biggest obstacle to the growth of cannabis and related-industries is banking. As long as traditional-retail banking remains mostly closed to cannabis companies, significant problems will remain. Operating a company on a largely cash basis leads to increases in internal and external theft, inaccurate accounting, and taxation concerns. Banks need specific laws federal laws to base their operations instead of policies from governmental agencies, which can quickly change based upon differing political environments.

About Nexus

Nexus Corporation has served the greenhouse industry as a top US manufacturer since 1967. With a corporate office and production facility in Northglenn, CO along with an advanced manufacturing plant in Pana, IL, the company brings innovative designs, high quality products, and exceptional customer service to its [System 420™](#) hybrid greenhouse systems.

Nexus has a team of engineers (licensed in 49 states), sales, project management, customer service, and operations professionals dedicated to managing a greenhouse development project from start to finish. The team has expertise regarding the customized design components, efficiency features, and cost management strategies necessary to maximize crop yields and return-on-investment.

For more information on greenhouses from Nexus Corporation, [click here.](#)

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