



the
cannin
report

Maricann Group Inc.
OTCMKTS: MRRCF

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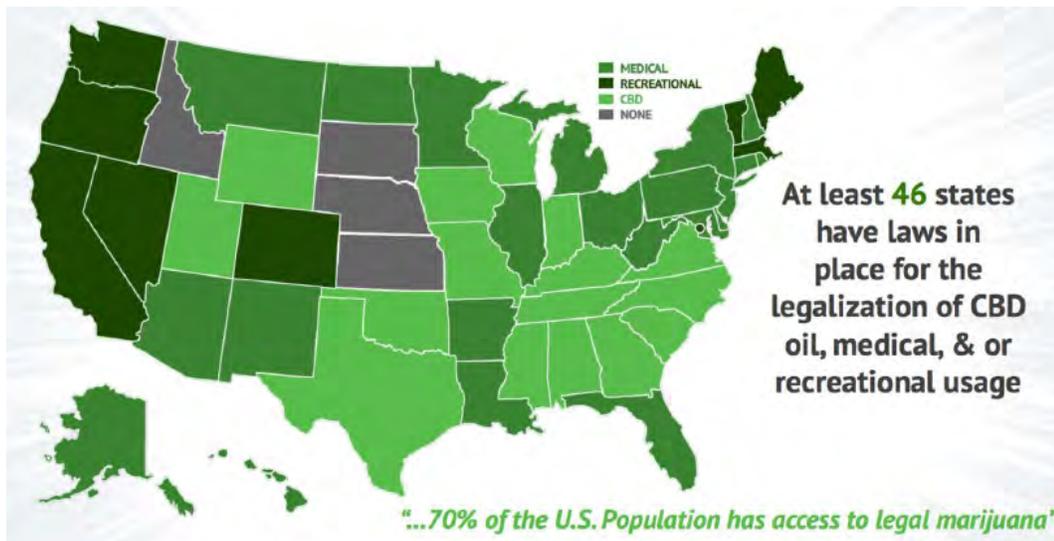
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about the cannin report

cannin report introduction

Thank you for purchasing the Cannin Report. It is our pleasure to welcome you to Cannin's quarterly publication. This Report will arm you with the information and resources necessary to make informed investment decisions within the cannabis industry. Our team of industry experts and investment analysts bring together important industry news, easy to read analyses and valuable investing tools to help investors of all levels, from beginners to the experienced, make educated investment decisions in this new and complex industry.



As of the release of this report, at least forty six states have laws in place for the legalization of CBD, oil, medical and/or adult use cannabis products. Approximately 70% of the U.S Population now has access to legal cannabis and/or hemp. The legal marijuana market in the U.S. is estimated to grow over 50% in the next year to \$10.7 billion and, according to early forecasts, is estimated to surpass \$12.3 billion by 2020. Many discerning investors are doing their homework, and we at Cannin are grateful that you have considered utilizing the resources of our Colorado-based team for your cannabis investment needs. We look forward to recognizing tremendous opportunities together in this booming, multi-billion dollar industry.

Yours in Great Success,
Stephen Goldman & William Goodin - Founders
Cannin, 2018

cannin platform introduction (coming soon)

Not all trading platforms are not all created equal. Cannin's software platform allows clients to buy and sell stocks on the same trusted platform containing the latest cannabis investment research. With Cannin, our clients have the ability to manage their portfolios with ease and monitor high growth potential stocks until it's the right time to act. Combining competitive trade fees, no account minimums, educational material, and trusted industry content provides our clients a wealth of cannabis industry information and support they simply can't find anywhere else. Invest in cannabis and invest in yourself with cannin.com.

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cannin tools



free cannin access

Free

Cannin access gives you a free personal dashboard with technical indicator tools, curated news, and the first updates on new site features.



cannin chronicle

\$18 per month

Comprised of the best weekly content from Cannin, plus additional exclusive content and real-time fundamental analyses, the Cannin Chronicle is your go-to recap of the prior week's largest cannabis companies. Delivered every Sunday morning, Cannin will keep you informed about the biggest news and the biggest players in cannabis.



cannin report

\$99 - one time fee

A comprehensive industry report delivered every quarter to keep you ahead of the curve.



cannin platform

Coming Soon!

Will feature competitive trade fees, no account minimums, educational material, curated content from our team of investment analysis and industry leaders to offer you the insight and support you can't find anywhere else.



machine learning

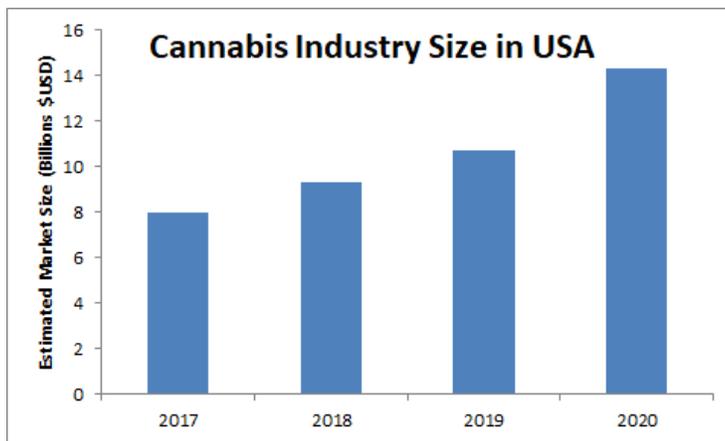
Coming Soon!

This developing program monitors the market and learns when variables predict a stock will go up – or down, providing highly accurate trading advice.

market & industry update

cannabis

Two factors influence the growth rate of this industry: the number of states passing legislation for either adult use of legal medical cannabis (currently most black-market purchasers of illegal cannabis are transitioning to legal purchases); and the pure growth in the existing markets (new populations purchasing cannabis each year). These two factors provide a quantifiable range for the market for each year. USA Sales estimates are expected to exceed \$14 Billion by 2020.

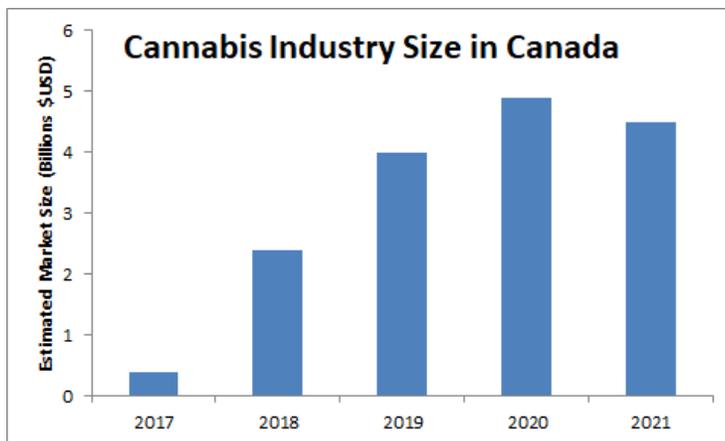


USA legal sales estimate

2017 - \$8.0 bil
 2018 - \$9.3 bil
 2019 - \$10.7 bil
 2020 - \$14.3 bil

Canada

In Canada, the current total (legal and non-legal) annual market potential is about 650,000 kgs, worth about US \$5-6 billion. The legal market is approximately 50,000 kgs. Since Canada announced nationwide legalization for adult use, we expect to see a substantial portion of the illegal market to begin purchasing legally in the second half of 2018. We expect the legal sales growth rate to continue at a substantial pace for the first 2-3 years - much more substantial than the pure growth of the market. There will likely be some lag from the distribution/supply chain, as some provinces will have far too few legal retail stores. However, online purchases will likely exceed estimates, reducing the effect of this lag in sales within physical retail stores. 200,000 kgs of overall production is a reasonable estimate for 2018—then adding 200,000 - 300,000 kgs per year for several years as stores open up and illegal sales continue to transition to legal. We expect to see growth in the total market potential. However, we anticipate significant price compression within the next several years as production continues to increase at such a frenetic pace.

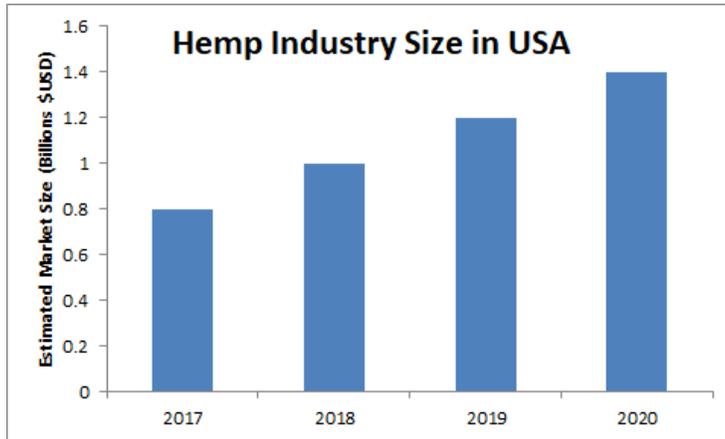


Canada legal sales estimates

2017 - \$400 mil
 2018 - \$2.4 bil
 2019 - \$4.0 bil
 2020 - \$4.9 bil
 2021 - \$4.5 bil

market & industry update

hemp



USA

2017 - \$800 mil
 2018 - \$1.0 bil
 2019 - \$1.2 bil
 2020 - \$1.4 bil

Industry Specifics

Here is a breakdown of where hemp products are being sold:

CBD - 23% (\$184 mil - \$291 mil)

Personal Care - 22%

Industrial - 18%

Food - 17%

Textiles - 13%

Supplements - 5%

Other - 2%

Canada

In Canada, consumer sales alone are estimated to be \$20-40 million USD and are expected to see a growth of up to 40%

2018 - \$20 - 40 mil

2019 - \$24 - 48 mil

2020 - \$37 - 67 mil

Each provincial government will oversee and regulate recreational cannabis supply and sales within their respective provinces according to their own unique models. Some provinces (Ontario and Quebec) are choosing to allow only a limited number of government-run storefronts, while others are planning for a greater number of private stores. Some provinces will allow online sales, others will not. Suppliers will be required to cut supply deals with provincial governments to ensure sales within the province. All these factors will have an impact on how much cannabis a supplier might be able to sell. As provinces and suppliers announce deals to great fanfare, it is worthwhile for investors to know how significant these deals are in terms of the larger Canadian market as the populations of some provinces are substantially less than others.

fundamental analysis



fundamental analysis

introduction to fundamental analysis

The following section of the Q2 Cannin Report contains fundamental analyses of 12 major public companies engaged in the distribution and sale of cannabis.

In essence, fundamental analysis is a deep-dive into all available information about a company which may impact potential financial success or failure. Analysis of this information is used to determine whether a stock is likely to be a good investment over the long term - such as a few years or more. The data analyzed are called “fundamentals.” These include company operations, products, management, marketing, finances, competitive advantage and more. Additionally, this analysis takes into account the current value of the stock in relation to the company’s profit to determine whether the stock price is a good value relative to the company’s profit on a historic basis.

Fundamental analysis resources are what many investors use because these tend to take a long-term position. Many investors do not play the market every day, buying and selling stocks rapidly. Investors typically buy a stock they believe will perform well in the long-term, and they typically intend to hold that stock for a long duration. These are referred to as “buy and hold” investors. Many investors do not monitor the market every day to “time the market.” They typically pay attention to long-term company performance—profit and loss based on good products and strong sales—because this is the best indicator of long term stock performance.

Fundamental analysis does not indicate what the stock price will likely do tomorrow based on short-term trends in investor enthusiasm. Please reference the technical analysis section of cannin.com free investor access for more information on this. Fundamental analysis will typically indicate what the price will likely be in the long-term—after all the short-term up and down movements average out and the long-term rational price emerges. This is based on overall company performance because prices over the long term have been proven to reflect company profits. Below you’ll see company categories such as market analysis, operations, financials, management team strength, and branding strength. These categories will be rated as **weak**, **neutral**, and **strong** based on our team’s expert analysis. Use these analyses as a resource for your next investment.

fundamental analysis sections

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FEATURED COMPANY

fundamental analysis

MARICANN



profile

HQ: Toronto and Munich

Incorporated: 2013

Symbol: MRRCF, MARI.CN, 75M.F

Exchanges: OTC, CNQ, Frankfurt

Facilities: Langton, Ontario

overview

Maricann is a vertically integrated producer and distributor of medical marijuana to the Canadian market, planning to enter the Canadian adult use market when legalized (October 2018). The company has production facilities in Langton, Ontario, Canada. In addition to cultivation and distribution, it operates in cannabis oil extraction and accessories.

focus: strong

Primary: Low-cost (\$1.34 per gram produced), high-quality greenhouse production of three product lines: dried cannabis (10 varieties), cannabis oil (4 varieties) and cannabis seeds and clones.

Secondary: Accessories including vaporizers, grinders and other paraphernalia.

licenses

Original license: 2014. Updated license: Nov 2017. Expires in Sept, 2020.

Has license to export from Canada into Germany

size

Market Cap: US \$161 million

Size within cannabis industry (by market cap): roughly 35th of 200+

Size among Canadian cultivators: 18 of roughly 40

markets: strong

Primary: Canada

Secondary: Soon to be Germany, and Switzerland

subsidiaries, interests

Maricann owns 95% of MGMBH, a German company applying for German production licenses. It also owns 100% of NanoLeaf Technologies Inc, a biotech company with globally patented drug delivery technologies, and Haxxon Ag, a Swiss company producing cannabis cigarettes free of tobacco, cannabis vape cartridges, and other refined products.

operations: strong

Cultivation:

Maricann currently produces about 2,000 kgs/year of dried cannabis flower (April 2018). It is expanding its facilities in Canada in three phases to reach 942,000 sf (21 acres), capable of producing 95,000 kg per year within 1-2 years. Phase One, which is complete and roughly the first 25% of its expanded facility, is awaiting licensing to begin cultivation. This will immediately increase its current capacity to 25,000 kg/year, with more to come by end of 2018.

Maricann plans to build 400,000 sf of greenhouse in two facilities in Germany. These would produce roughly 40,000 kgs. Its subsidiary, Haxxon, operates a 64,000 sf facility near Zurich, Switzerland.

FEATURED COMPANY

fundamental analysis

MARICANN



Distribution: Currently all legal sales of medical cannabis in Canada happen online. Pharmacies and drug stores are not yet approved, but may become so. Many licensed producers are reaching agreements with pharmacy chains to sell medical cannabis if the channel is approved.

Online: Maricann sells flower and oil through its online store, and other online stores (e.g., CanvasRx.com). It has over 11,000 registered patients.

Germany: Three-pronged strategy: import from Canada; cultivate in Germany; and CBD cultivation from industrial hemp.

Maricann does not yet have any supply agreements with provincial governments. This may soon be required in all provinces except Ontario, the largest, which plans to buy from all licensed producers.

Pharmacies: Maricann has a very significant agreement with McKesson, which controls 2,116 pharmacies (20.01% of pharmacies) across Canada, to supply medical cannabis to patients if pharmacies are approved to sell. It also has an agreement with Lovell Drug stores to be their exclusive distributor of medical cannabis.

Financials: **neutral**

Maricann's expenses currently far exceed its revenue. Of particular concern, its cost of goods still exceed its sales revenue, meaning it has a negative gross margin. We expect to see Maricann rein this cost issue in soon, because they speak of their intention and ability to become a low-cost producer.

earnings/revenue/cost control:

Revenue: \$2.8 million (year ending Mar, 2018, last reporting period)

Revenue per share: \$0.02

Revenue rank in industry: about 14th

Earnings: (US \$8.7 mil)

Cost per gram to produce: \$0.60

Total cost to produce: 1.34 (target)

Cash: \$32 million

management: **neutral**

Management team experience looks good on paper, but there have been issues, such as the recently cancelled financing by syndicators. The CEO Ben Ward is also under investigation for stock dealings at a previous company he managed.

branding: **strong**

The recent hiring of Geoff Kosar as VP of Marketing brings solid branding expertise to the team, as he previously headed marketing at Diageo, home of many top spirit brands.

financings: **neutral**

The most recent \$70 million financing in March 2018 raised \$40 million before syndicators terminated the agreement due to trade investigations made by members of the board and the CEO. In October, 2017, Maricann raised \$31 million dollar in a private placement financing of convertible 9% debentures. In May 2017, it raised \$42.5 million in non-equity financing from The Green Streaming Finance Company of Canada Inc. in order to fund its German expansion at two facilities.

valuation

Current share price: US \$1.22

Price to Sales: 56

Price to book: 1.9

FEATURED COMPANY

fundamental analysis

MARICANN



recommendation: strong

Maricann currently spends far more on expansion than their \$2.8 million in sales revenue. This means they are currently losing money. They expect to increase revenue significantly in the coming year.

Share price to sales (market cap divided by revenue), is very high at 56. This price is not sustainable. The tobacco industry average is P/S=5. Investors are paying this price anticipating much higher future revenue.

Maricann's current share price reflects a future revenue of roughly \$35 million. Maricann's future revenue depends on 1) how much cannabis they can produce, 2) how much they can sell, and 3) at what price.

Competition will bring the price of cannabis down from its current \$8/gram rate. Further, we estimate that Maricann sells half its cannabis at retail (higher price) and half at wholesale (lower price). Based on this information, we estimate Maricann's average sales price per gram will be \$4-6 per gram in 2-3 years.

Selling their entire planned capacity of 95,000 kgs at \$4/gram yields future revenue of \$380 million. Generating revenue above \$35 million should drive the share price above its current level. This requires selling 10,000 kgs at \$4/gram. Can they do this?

Despite not having any supply agreements with provincial governments, we see their distribution prospects as strong. They have a good market developing in Germany and Switzerland, in addition to a strong online business in Canada, and the prospects of a very strong pharmacy channel with McKesson in Canada.

Maricann's deal with McKesson, which controls 20% of Canada's pharmacies, is a very important. It will give Maricann a substantial retail presence and help them secure strong, steady sales if (probably when) pharmacies are approved to sell medical cannabis.

Coming in future Cannin Reports: Due to the fact that most cannabis companies are not yet reporting profit, current analyses focus primarily on a company's ability to generate top-line revenue more than bottom line profit. As cannabis companies begin to turn the corner and report profit in the coming years, stay tuned to Cannin Reports. Our upcoming analyses will dig deep into cost control issues to determine who can do this best—in time for you to use this insight for your investment decisions.

branding

branding

Branding is not yet a major force in the consumer choice of cannabis in this early stage of the market. If the government allows the market to develop its branding without interference, we think the branding will become a major force in consumer choice. However, the government has proposed regulations which will substantially curtail packaging design. If approved it's approved, this will set back branding quite a bit.

If the regulations do not pass, companies will eventually develop a significant, unique "umbrella" brand identities and personality for their entire company, as well as unique names and identities for their sub-brands. In the same way, the people don't buy "beer", "clothing" and "cigarettes," they won't just buy cannabis. They will buy large company brands like Budweiser, Nike and Marlboro and small craft brands like the many unique craft brew brands now available. Suppliers will bring each of these sub-brands to unique life through stories and imagery that will help consumers understand and distinguish between brands, as they do among other lifestyle brands.

Many cannabis suppliers have not done any significant branding yet. Broken Coast, Tweed, and Hydro Apothecary are exceptions. In general, oil products have slightly less branding development than flower products. While the branding efforts of the few may not be paying dividends yet, they indicate which companies understand the value of branding and are better positioned for future gains from branding.

While branding and brand loyalty have not yet become dominant forces driving consumer cannabis selection, they are gaining influence and will continue if the proposed regulations are not approved. In the early stages of the rec market we expect consumers to pay most attention to generic product features such as price, variety, strain, and THC level. Over the course of a few years, as the market matures, we would expect branding and brand loyalty to become a dominant force in recreational cannabis sales, as it has become in the alcohol and tobacco fields.

Companies building their brands around well-known personalities, such as Leafs by Snoop and Willie's Reserve, are attempting to jump ahead of the rest of the "build it from scratch" brands. These companies will capture the early fascination of a segment of consumers who identify with a personality. If the product delivers, this could translate into early brand loyalty and long-term market share.

The larger bulk of brands will build their brands slowly, from scratch, through brand signals like packaging, web design, headlines, web content, brand story, the overall customer experience, and the performance and reliability of the cannabis. All these convey a personality which will appeal to certain types of people.

How long it takes the market to develop into a brand driven market depends on the rate and manner in which the legal recreational cannabis market is allowed to mature by the federal and provincial governments. When availability and price become universal and uniform across the country and customer wishes become better pronounced, brands will become more dominant.

The proposals that Health Canada has under consideration would mandate plain packaging but these are merely proposals, so we don't yet know what the future will be for branding.

branding

Assuming wiser heads prevail and the market is allowed to mature more naturally, retail branding will inevitably dominate in time as seen in the tobacco and alcohol markets where branding is essential to profits. With profits and strategic diversification in mind, tobacco and alcohol will eventually enter the market through acquisitions.

Some of the better-developed cannabis brands in Canada currently are Tweed, Leafs by Snoop, Broken Coast, Peace Naturals, Hydro Apothecary, and Bedrocan. In the USA, brands such as Willie's Reserve, Marley Natural, Kiva and Legal have created appealing presences.

medical research

medical research news & trends

increasing acceptance of cannabis is driving medical research and innovation, may soon help combat the opioid epidemic



Drug overdose deaths are now all too common in the United States and the current opioid epidemic is the worst drug crisis in US History. Two-thirds of all drug overdose deaths involve an opioid. This crisis recently made national headlines after The White House officially declared the opioid epidemic a public health emergency in late 2017.

In light of this declaration, Public Health Officials plan to roll out initiatives to combat this crisis. Such as greater access to opioid treatment for patients in isolated areas, expedited hiring process for the Department of Health and Human Services, and the allocation of federal grant funds to target those with opioid addictions among other measures. While these measures may help aid in the effort, experts say Congress will need to allocate billions of dollars to properly address the crisis.

Despite increasing awareness of the dangers of opioid abuse, opioid-related mortality continues to increase, with no signs of slowing, taking over 100 lives each day in the United States.

Experts attribute much of this epidemic to an increase in prescriptions of opioids to combat chronic pain in patients. In an attempt to identify solutions to combat this epidemic some experts have suggested utilizing medical cannabis in lieu of addictive and potential harmful opioid medications.

Early clinical research indicates certain cannabinoids react with pain receptors, indicating that doctors can use cannabis in addition to, or instead of, opioids. Because chronic pain is a major indication for medical cannabis, legislation which establishes access to medical cannabis may impact overdose mortality related to opioid analgesics in states which have legalized cannabis for medical use.

While there is currently no definitive correlation between cannabis legalization and opioid abuse reduction, increasing evidence suggests a link may in fact exist.

medical research news & trends



**Cannabis is safer, cheaper, and easier to manage ...
to treat opioid addiction.**



In fact, a growing number of members of the medical community now believe that cannabis could play an essential role in the fight to end the opioid addiction crisis that is plaguing the United States. THC and CBD, the two most commonly studied compounds found in cannabis, have powerful analgesic properties. CBD has the additional advantage of being non-psychoactive. Cannabis is impossible to overdose on (for adult humans) and has few of the severe side effects that are common with opiates, such as organ damage.

Cannabis is safer, cheaper, and easier to manage than methadone, naltrexone, and buprenorphine, which are currently used to treat opioid addiction. For many users, cannabis and low-THC/high-CBD products can, therefore, serve as excellent substitutes for opioid painkillers, and have the potential to save many lives as well as reducing healthcare costs. As an added benefit, various forms of cannabis can also lessen the symptoms of withdrawal from dependence on opiates, as well as benzodiazepines and alcohol.

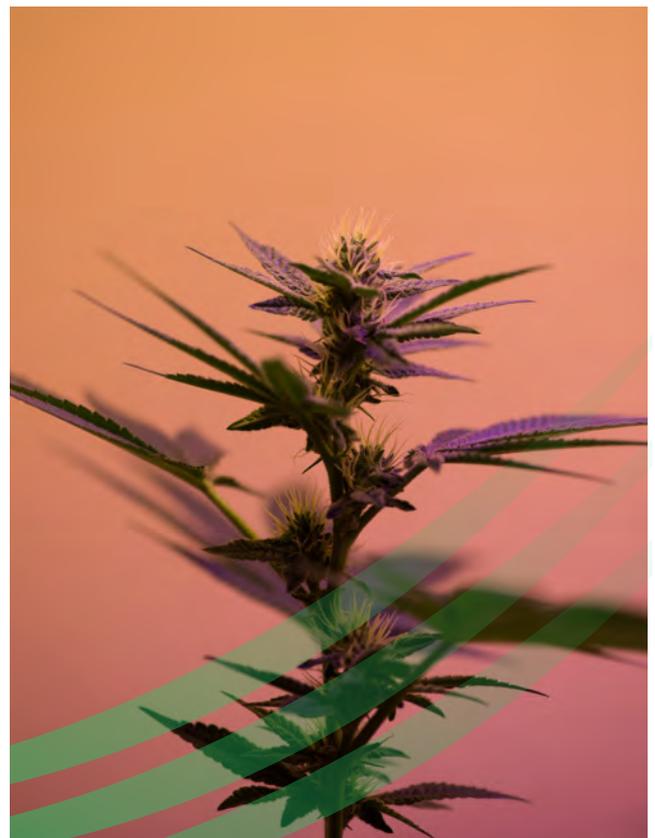
While there are lingering misconceptions about the safety of cannabis in some quarters, the general attitudes toward it have shifted considerably. Rapid growth in the cannabis sector is now driving innovation in a number of associated areas, including the medical field. Research into applications for cannabis compounds is increasing, and both traditional pharmaceutical groups and specialist biotech companies are developing cannabis-based therapies as well as synthetic analogs.

A handful of medications based on cannabis, or on its specific properties, are already available in various markets, and several others are in the pipeline for launch over the next few years. These prescription drugs contain standardized dosages of the active compounds, have undergone clinical trials, and are approved by the FDA. These factors make them attractive to many physicians and patients who might be hesitant about recommending or using cannabis itself.

In the United States, cannabis is still classified as a Schedule I drug, which is (incorrectly) defined by the Drug Enforcement Agency as having "no currently accepted medical use and a high potential for abuse".

As research and medical cannabis product availability gather pace, it will become increasingly harder for the DEA to keep cannabis on the Schedule I list of controlled substances. Even if cannabis-based pharmaceuticals do not prove to be the deciding factor in legalizing cannabis throughout the country, their widespread use is sure to contribute to the lifting of the federal prohibition.

As the cannabis-based pharmaceutical sector develops and its products become widely prescribed, demand for high-quality medical-grade cannabis and industrial hemp will continue to increase. The growth of this industry is likely to be beneficial to the producers of top-quality raw materials that can negotiate supply agreements with cannabis-based pharmaceuticals, as well as for the manufacturers of these medical products themselves.



medical research news & trends

cannin has selected a shortlist of some of the most exciting players in the field of cannabis-based therapies at the moment:

Arena Pharmaceuticals (NASDAQ:ARNA)

Arena is a biopharmaceutical company that develops small molecule drugs for a variety of conditions. The company is currently conducting phase 2a of its clinical trial on APD371, a powerful, selective cannabinoid-2 (CB2) agonist that is intended to treat visceral pain experienced by Crohn's Disease patients. This novel compound acts on the body's cannabinoid-2 receptors to suppress intestinal inflammation that causes chronic pain. The highly selective nature of this compound means it is non-psychoactive and non-dependence forming. The company is expecting to receive data from the trials in Q1 2018.

GW Pharmaceuticals (NASDAQ:GWPH)

UK-based GW Pharmaceuticals is the global leader in plant-based cannabinoid therapeutics and has several innovative new drugs in its pipeline. Its Sativex® (nabiximols) mouth spray was the first-ever prescription drug formulated from plant-based cannabinoids and is now used in 30 countries (but not in the US) to treat spasticity, neuropathic pain and other symptoms of multiple sclerosis. GW is currently conducting clinical trials on Epidiolex®, a new type of drug based on purified cannabidiol (CBD) that is intended to treat Lennox-Gastaut syndrome, Dravet syndrome, and other intractable childhood epilepsy disorders. Data from phase 3 of the study have just been published in The Lancet, and show the drug to be effective and well tolerated.

Insys Therapeutics (NASDAQ:INSY)

Insys' activities include the development of pharmaceutical cannabinoids and novel drug delivery systems. Syndros® is a synthetic THC drug that treats loss of appetite, nausea, and vomiting in cancer and HIV/AIDS patients. The company's product pipeline holds several therapeutics, including a liquid cannabinoid solution for pediatric epilepsy that is currently in phase 2 clinical trials, and an inhalable dronabinol (THC) system. Insys has recently announced that another oral cannabinoid for Prader-Willi syndrome, a genetic disorder that can cause childhood obesity and type 2 diabetes, has been granted fast-track status and will enter clinical trials in Q1 2018.



Zynerba Pharmaceuticals (NASDAQ:ZYNE)

Zynerba specializes in developing transdermal cannabinoid therapeutics and has now announced that its products will be focused on the treatment of rare psychiatric and neurological disorders. One drug that is currently in phase 1 clinical trials is ZYN001, a patch that delivers an inactive form of synthetic THC into the bloodstream, where it becomes active. ZYN001 is intended for the treatment of neuropsychiatric conditions such as Tourette syndrome. ZYN002 is a synthetic CBD gel that has been awarded an Orphan Drug Designation for fragile X syndrome by the FDA. It is also in phase 2 of trials for adult refractory focal epilepsy and epileptic encephalopathy.

PreveCeutical Medical (OTC:PRVCF)

PreveCeutical is a Canada-based life science company that develops innovative therapies for a range of conditions using organic and Nature Identical™ compounds. Its Sol-gel delivery system is currently in development and is expected to be approved in 2019 for licensing to medical cannabis producers. Sol-gels are controlled-release CBD gels that are administered nasally and remain active in the nasal passages for up to seven days. This delivery method ensures easy application, exceptionally high bioavailability, and rapid delivery to the brain.

medical research news & trends

studies show medical cannabis may lead to fewer opioid prescriptions

A Advocates of medical cannabis and cannabis legalization have long argued that the plant provides an effective treatment for pain, while carrying much less risk of harmful side effects when compared to other more traditional pain drugs. With the terrifying rise in deaths related to prescription opioids, interest in cannabis as a safer alternative for those with severe or chronic pain has never been greater. Two new studies, both published in the *Journal of the American Medical Association Internal Medicine*, suggest cannabis may indeed be a valuable tool in fighting the opioid epidemic.

Though other studies have supported the idea that cannabis may help addicts avoid relapses, these two studies don't directly examine the impact cannabis has on addiction or overdose deaths. Instead, the studies look at the impact that cannabis has on opioid prescriptions. The over-prescription of opioids is widely held to be a significant factor in the opioid epidemic, so the researchers sought to determine if the availability of medical or recreational cannabis influenced the number of opioid prescriptions written or filled.

The first study examined trends in opioid prescribing for patients on Medicaid, from 2011 to 2016. States with either medical or recreational cannabis laws were compared to states without cannabis laws. Comparisons were done every quarter, so states without cannabis laws could switch categories if they passed and enacted laws at some time during the study.

The study showed that states with medical cannabis laws had an average of about a 6% lower rate of opioid prescriptions for pain. States with laws also allowing recreational adult use showed an additional reduction of about 6%, 12% below the average of states with no cannabis laws. The additional decrease in states with recreational laws indicates that medical cannabis laws fail to help a substantial number of patients who could benefit from cannabis as an alternative to opioids.

The second study examined trends in opioid prescribing for patients on Medicare, from 2010 to 2015. Each year the researchers looked at the opioid prescriptions filled in states with medical cannabis laws compared to those without.

The study found that patients in states with medical cannabis dispensaries filled roughly 14% fewer prescriptions for daily doses of opioids, compared to patients in states with no medical cannabis. In states that allow medical cannabis, but don't permit dispensaries and only allow patients to grow their cannabis at home, the reduction in opioid prescriptions was only about 7%. This indicates that the easier availability of cannabis from dispensaries leads to a greater number of patients choosing cannabis in place of opioids.

W. David Bradford, an economist at the University of Georgia in Athens who is an author of one of the studies, indicated the results of these studies add to other evidence suggesting cannabis is a viable alternative to opioids. He said the weight of the evidence is "now hard to ignore." He believes federal law should be changed to permit doctors to prescribe cannabis as a treatment for pain.

Given the overwhelming cost to society associated with prescription opioids, it's encouraging to see more studies supporting the idea that cannabis can provide an effective alternative. Hopefully the mounting evidence and support from the medical and research communities will speed the process of federal legalization.

glossaries

... (zob. 2. rozdz.) w technice produkcji podziału klasowego i wy-
... lub odprowadzające się nierównomiernie k. 2. «wspólnota mienia»
... II; br D. komży części maszyny elektrycznej, po kt
... krótka biała szata pierścienia, po kt
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general cannabis glossary

11-hydroxy-THC: The main active metabolite of tetrahydrocannabinol (THC), which is formed in the body following the consumption of cannabis. Cannabis contains tetrahydrocannabinolic acid (THCA) which, once heated, is converted into THC and then metabolized by the body into 11-hydroxy-THC. This molecule is psychoactive as well.

Aeroponics: A method of cannabis cultivation in air without the use of soil or other traditional medium.

Alcohol Extraction: Process of separating essential oils from cannabis plant material using hydrophobic liquids such as alcohol.

Aquaponics: A method of cannabis cultivation using a combination of aquaculture and hydroponics.

Borosilicate Glass: Refers to a type of glass, resistant to thermal shock, used to make many glass pipes and dab rigs.

Bud: Slang term for female cannabis flower.

Bud Rot: A type of fungus which develops within the core of a cannabis bud. This typically occurs in unfavorable growing or drying/curing conditions.

Budder: Typically a BHO or CO2 cannabis extract with a “creamy consistency”.

Budtender: A medical or recreational cannabis dispensary worker who sells cannabis products.

Butane Hash Oil (BHO): Cannabis oil concentrate produced from cannabis flowers using butane as a solvent.

CID1 Processing Environment: Class 1 Division 1 is the classification for a hazardous area where explosion and fire hazards exist because of the presence of flammable gases, vapors or liquids. BHO, ethanol and other solvent extractions are typically required to be performed within a CID1 environment, however, regulations do vary from municipality to municipality.

Cannabinoids: Active molecules produced by cannabis plants. They are involved in psychoactivity as well as the medicinal effects of the plant. Around 100 cannabinoids are known today.

Cannabinoid Hyperemesis Syndrome: A condition associated with Cannabis use, typically characterized by symptoms of recurrent nausea, vomiting and abdominal pain found in a percentage of chronic, heavy users of cannabis.

Cannabinoid Receptor: Receptors which are activated by THC and CBD (among other compounds) and part of the endocannabinoid system; located throughout the human body.

Cannabis: Term short for Cannabis Sativa or Cannabis Indica, the plant.

general cannabis glossary

Cannabis Cup: The world's foremost cannabis festival where judges from around the world sample and vote on their favorite marijuana varieties.

CBD: Cannabidiol. This molecule is present in Cannabis and hemp. Known to have many medicinal effects.

CBN: Cannabinol. This molecule is present in Cannabis and hemp and is the oxidative product of THC degradation. Known to have many medicinal benefits.

Closed Loop Extraction: Typically referring to BHO or Propane extractions, and widely accepted as safer than "open blasting", this process recycles hydrocarbon solvents within a closed system instead of releasing these gases into the air.

CMH Light: Ceramic Metal Halide (CMH) is a broad spectrum lamp typically used for indoor cultivation.

CO2 Oil: Cannabis oil concentrate produced using carbon dioxide as a solvent. Often produced at elevated temperatures and pressures.

Concentrates: Cannabis products with elevated concentrations of THC or CBD.

Dab: A smokable marijuana concentrate which is typically the product of a BHO or CO2 extraction.

Decarboxylate: The process of heating cannabis at lower temperatures to activate inactive cannabinoids like THCA and CBDA into their active forms THC and CBD, respectively. Decarboxylation also happens naturally with exposure to light, air and heat.

Dimethylheptylpyran: Synthetic analogue of THC, invented in 1949.

Dispensary: A storefront which is licensed to sell medical and or recreational cannabis products.

Distillate: A "solvent-free", process of concentrating to high-potency cannabis concentrates which is typically the product of either a "short path" or "fractional" distillation.

Edibles: Consumable final products produced by cannabis companies. Typical products include cookies, chocolates, gummies and mints/lozenges.

Eighth: Refers to a typical measurement of $\frac{1}{8}$ of an ounce of cannabis, or 3.5 grams.

Entourage Effect: The concept of interactive synergy between various cannabis compounds.

Extraction: The process of removing cannabis compounds from plant materials typically by using solvents and heat.

Feminization: A process of conditioning female plants to obtain male pollen needed for seed production.

general cannabis glossary

Fertigation: Refers to the injection of fertilizers and water-soluble nutrient products into an irrigation system.

Flavonoid: Phytonutrients in cannabis, and other plants, which are known for providing non-green color pigments and produce a range of effects.

Flowering Stage: Refers to the final stage of cannabis cultivation, post vegetation stage, whereby cannabis flowers develop typically using a light cycle of 12 hours “under light” and 12 hours of “light deprivation” during a 24 hour cycle.

Flush: Prior to harvest and lasting anywhere from a few days to a few weeks, whereby mature, flowering cannabis plants are only given water and no other nutrients in an attempt to improve quality and “smoothness” of cannabis buds.

Fractional Distillation: A method of extraction whereby a liquid mixture is separated into fractions based on differences in boiling points of various compounds after heat is applied.

Half: Refers to a typical measurement of cannabis equal to 14 grams.

Hash: Traditionally the resin collected from the flowers of the cannabis plant but may be used to refer to one or more of the various concentrated cannabis products available on the market today.

Hermaphroditic Cannabis: Cannabis demonstrating both male and female reproductive organs, having origins which are either genetic or environmental, often caused by “light leak” during flowering stages and/or significant variations in PH levels among other factors.

Hemp: A type of cannabis grown for its fibrous content as well as CBD content.

High-cannabinoid full spectrum extract (HCFSE): Hydrocarbon method of extraction which aims to preserve cannabinoids.

High-terpene full spectrum extract (HTFSE): Hydrocarbon method of extraction which aims to preserve terpenes.

HPS Light: High Pressure Sodium (HPS) is a broad spectrum lamp typically used for indoor cultivation.

Hybrid: Strains containing a mix of sativa and indica genetics, can be found to have varying THC:CBD cannabinoid concentrations.

Hydrocarbon Extractions: Currently one of the most prevalent forms of extraction using Butane, Propane or other hydrocarbon solvents.

Hydroponics: A growing system for plants using water as a growth medium to deliver nutrients.

Indica: Cannabis Indica is one of the two main species of Cannabis with a short, densely branched, wide-leaf appearance.

general cannabis glossary

Kief: Substance referring to the resinous trichomes of cannabis.

Landrace: A domesticated, traditional species of cannabis which has developed over a period of time through adaptation to its natural environment and isolation from other populations or species.

LED Light: Light Emitting Diode (LED) is a broad spectrum lamp typically used for indoor cultivation.

Live Resin: A type of cannabis concentrate manufactured using a technique which takes freshly harvested cannabis and freezes it to subcritical temperatures both before and during the extraction process.

Man-Trap: Also known as an “air lock”, “sally port” which comprises a small space with interlocking doors. Used to maintain cleanliness and mitigate contamination and potential crop-loss within a cultivation facility.

MIP: Marijuana Infused Products facility where various products are sourced and/or manufactured and infused with cannabis extracts.

Mother Plants: Stock plants specifically raised to provide cuttings (clones) for new plants.

Nabilone: A synthetic cannabinoid with antiemetic and analgesic medicinal benefits.

Open Blasting: Process of performing a solvent-based extraction without the use of a closed-loop system. Typically very dangerous and banned in many cities and states.

Ounce: Refers to a typical measurement of cannabis equal to 28.35 grams.

Percolator: Common accoutrement to many water pipes, this device serving as an extra water chamber provides greater diffusion/filtration for better inhalation.

Phenotype: The combination of a plant’s observable traits including appearance and biochemical properties.

Plant Cloning: A simple process which allows you to replicate a plant by taking a clipping and adding plant hormones to encourage the development of new roots.

Pre-roll: A cannabis flower joint (rolled in paper).

Purging: Process of removing residual solvents from extract concentrates.

Residual Solvent: Remaining solvent within a concentrate post processing.

Rick Simpson Oil: A highly-concentrated cannabis oil containing at least 20% THC.

Rosin: A cannabis concentrate produced via heat and pressure techniques, free of solvent purification.

general cannabis glossary

Rotary Evaporator: Also known as a “rotovap” this device is used to aid in the removal of solvents during the extraction process.

Sativa: Cannabis Sativa is one of the two main species of Cannabis with a tall, loosely branched, long, narrow leaf appearance. Known to reach heights of up to 20 feet.

Schwag: Slang term for poor quality cannabis.

Sea of Green: The idea of growing many smaller cannabis plants instead of fewer, larger ones.

Seed to Sale Concentrates: Cannabis concentrates created and sold by a single source.

Shatter: A cannabis concentrate produced from cannabis flowers that hardens after processing with hydrocarbons. Typically after hardening, slabs can be broken apart and “shatter” hence the name.

Short Path Distillation: A distillation technique whereby a molecule travels a short distance at a reduced pressure.

Spider Mites: Any number of species of arachnid which both feed on and kill cannabis plants.

Strain: A slang name for different cultivars, or phenotypes, of cannabis sativa plants.

Supercritical CO2 Extraction: An extraction technique which creates phase changes in carbon dioxide using both temperature and pressure.

Terpenes: Pungent essential oils within cannabis which have distinct flavor profiles.

Testing Laboratory: Labs which provide analytical data pertaining to both potency and safety of all cannabinoid infused products and medicines.

THC: Tetrahydrocannabinol, the active molecule in cannabis sativa. Responsible for the psychoactivity of cannabis.

THC-A: Tetrahydrocannabinolic acid. The acidic precursor of THC, made by the cannabis sativa plant.

Tincture: A liquid edible made from cannabis. Often also includes ethanol, non-cannabis oils, or glycerin as carrier agents for cannabinoids. Orally delivered.

Tissue Culture: A technique used to maintain or grow plant cells under sterile conditions in an artificial medium.

Topical: A cannabis infused product manufactured to apply to the skin. Often produced with permeation enhancers to increase effects.

Trichome: A cannabis sativa plant structure responsible for manufacturing cannabinoids and terpenoids in the plant.

general cannabis glossary

Vacuum Oven: A device used in the post-extraction process which is commonly used to remove residual solvents through evaporation.

Vape Pen: A compact medical delivery device, typically with a heating element, than upon achieving high temperatures can volatilize cannabinoids for ingestion.

Vaporizer: A medical delivery device, typically with a heating element, than upon achieving high temperatures can volatilize cannabinoids for ingestion.

Vegetative Stage: Refers to the growth stage of a cannabis plant prior to the flowering stage.

Wax: Also known as “Ear Wax”, this term refers to cannabis concentrate produced from cannabis flowers typically using hydrocarbons. Waxes are softer in than shatters.

industrial hemp – the world’s most useful plant

stalk

construction materials (from pulp)

- Hempcrete
- Panels
- Insulation
- Fiberglass substitute
- Caulking & mortar

paper (from pulp)

- Newsprint
- Cardboard
- Packaging
- Fine paper

industrial textiles (from fibers/pulp)

- Rope and cordage
- Carpets
- Tarpaulins
- Sails
- Netting

textiles (from fibers)

- Fabrics
- Clothing
- Bedsheets
- Diapers
- Upholstery

petroleum substitutes (from fibers)

- Biomass fuels (ethanol, biodiesel, heavy oils, gas & solid fuels)
- Chemical feedstocks
- Plastics
- Paints

Hemp is the strongest natural fiber in the world, and has thousands of different uses

leaves

- Mulch and compost
- Excellent for livestock bedding, as they are highly absorbent, deodorizing and pest-repelling
- Cover and weed suppression when planted amongst other crops

flowers

- CBD oil
- CBD oil lotions & balms
- CBD oil capsules, tinctures & sprays
- Essential oil

seeds

foods

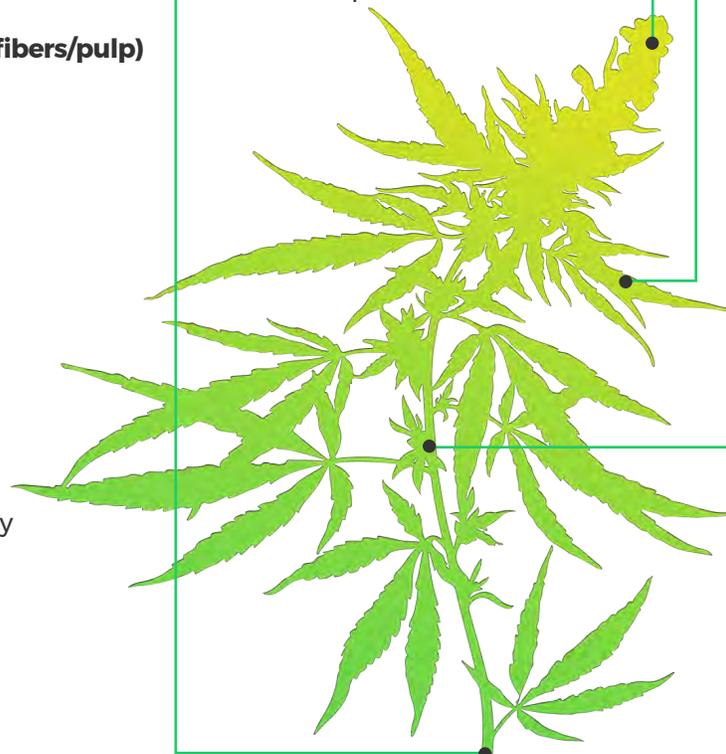
- Hemp seed oil
- Hemp milk
- Hemp seed hearts
- Protein powder
- Essential fatty acid oil supplements
- Animal feed

industrial products

- Oil paint
- Varnish
- Printing ink
- Various biofuels
- Solvents
- Coatings

personal care

- Soap
- Shampoo
- Lotions, creams & balms
- Cosmetics



benefits of growing industrial hemp:

Hemp grows fast, uses little water, needs no pesticides and yields more per acre than any other crop. It can also prepare the soil for other crops by drawing out toxins and adding back nitrates.

roots

- Traditionally used to treat joint pain, broken bones, inflammation, burns, infections and parasites.
- Rehabilitate the soil by drawing toxins from it, which prepares it for other crops.
- Facilitate soil aeration and drainage, and help prevent land erosion.

industry glossary

52 Week High - A stock's high point over the last 52-week period.

52 Week Low - A stock's low point over the last 52-week period.

Alpha - The expected return from an investment from its inherent value.

Annual report - The yearly audited record of a corporation or a mutual fund's performance that is distributed to shareholders.

Annualized rate of return - The average annual return over a period of years, taking into account the effect of compounding. Also known as compound growth rate.

Appreciation - The increase in value of a financial asset.

Bear market - A bear market is a prolonged period of falling stock prices. The opposite of a bull market.

Beta - A measurement of volatility where 1 is neutral; above 1 is more volatile; and less than 1 is less volatile.

Bull market - Any market in which prices are advancing in an upward trend. The opposite of a bear market.

Capital loss - The amount by which the proceeds of a sale of a stock are less than its purchase price.

Capitalization - The market value of a company, calculated by multiplying the number of outstanding shares by the price.

Dividend - A dividend is an optional portion of a company's profit paid to shareholders.

Dow Jones Industrial Average (DOW) - The most commonly used indicator of stock market performance, based on prices of 30 actively traded blue chip stocks, primarily major industrial companies.

Equity fund - A mutual fund or collective fund in which the money is invested primarily in common and/or preferred stock. Stock funds may vary, depending on the fund's investment objective.

Federal Reserve Board (The Fed) - The governing board of the Federal Reserve System, they regulate the nation's money supply by setting the discount rate, tightening or easing the availability of credit in the economy.

Index - An investment index tracks the performance of many investments as a way of measuring the overall performance of a particular investment category. The S&P 500, for example, is a benchmark for large-stock investors. It tracks the performance of 500 large U.S. company stocks.

industry glossary

Inflation - A rise in the prices of goods and services.

Large-cap - The market capitalization of companies with market values greater than \$10 billion.

Market price - The current price of an stock.

Market risk - A certain possibility that an investment will not achieve its target price.

Mid-cap - The market capitalization of companies with market values between \$3 to \$10 billion.

NASDAQ - National Association of Securities Dealers Automated Quotations system, which is owned and operated by the National Association of Securities Dealers. NASDAQ is a computerized system that provides brokers and dealers with price quotations for securities traded over-the-counter as well as for many New York Stock Exchange listed securities.

Portfolio - A collection of investments managed as a collective whole with specific investment goals in mind.

Price-to-earnings (P/E) Ratio - A stock's price divided by its earnings per share, which indicates how much investors are paying for a company's earning power.

Recession - A downturn in economic activity, defined by many economists as at least two consecutive quarters of decline in a country's gross domestic product.

Risk tolerance - The degree to which one can tolerate volatility in their investments.

Securities - Another name for investments such as stocks or bonds.

Securities and Exchange Commission (SEC) - The federal agency created by the Securities and Exchange Act of 1934 that administers the laws governing the securities industry, including the registration and distribution of mutual fund shares.

Share - A unit of ownership in an investment, such as a share of a stock or a mutual fund.

Standard & Poor's Index - Broad-based measurement of changes in stock market conditions based on the average performance of 500 widely held common stocks commonly known as the Standard & Poor's 500 or S&P 500.

Valuation - An estimate of the value or worth of a company or the price investors assign to an individual stock.

Volatility - The amount and frequency with which a stock can fluctuate in value.

the cannin report