ABOUT DIXIE

WELCOME TO THE FUTURE OF CANNABIS

Questions or topic suggestions for future educational materials? Let us know: BudtenderSuggestions@DixieElixirs.com

THE CANNABIS REVOLUTION IS GAINING MOMENTUM AROUND THE COUNTRY—AND THE WORLD

And at Dixie, we know it's not about to slow down. Cannabis offers powerful benefits to the people who need it and a safe indulgence to those who enjoy it.

This booklet is your guide to all things cannabis—what cannabinoids are and how they affect the human body, THC extraction methods, cannabinoid delivery systems and the complete Dixie product line. At Dixie, we're dedicated to being your partner, to providing you with the educational materials, the support and the quality products you need to be successful.

THE BREAKDOWN

DELIVERY SYSTEMS

HOW YOUR BODY GETS THE THC TO WHERE YOU WANT IT TO BE

While research on cannabis has been constrained in the U.S. over the past few decades, we are now rapidly learning about the wide-reaching therapeutic effects of cannabis and how the plant's cannabinoid compounds react with the endocannabinoid system. There are four key uptake systems from which the body can absorb cannabinoids. And at Dixie, we've formulated products to optimize each of them.

ORAL-MUCOSAL

Absorption of THC & other cannabinoids through the lining of the mouth and under the tongue – effects are felt throughout the entire body. This is the fastest method of medication.

INGESTION

Absorption of cannabinoids through oral ingestion. Cannabinoid molecules are absorbed in the intestinal tract and metabolized in the liver.

INHALATION

Absorption of THC, CBD and other cannabis elements through inhaling combusted or vaporized cannabis.

TOPICAL

Absorption of THC and other cannabinoids through the skin. This method results in local effects only.

ORAL-MUCOSAL

Dixie Dew Drops – Dixie Synergy Dew Drops – Dixie Mints

One of the most efficient ways to absorb THC and other cannabinoids is through the mucosal lining of the mouth. Within the mouth, there are three areas that absorb: the mucosa lining inside the entire mouth, the area under the tongue (sublingual) and the tongue itself. Cannabis products placed under the tongue (sublingually) take effect more quickly than those absorbed through the general mucosal tissue lining the mouth or placed on the tongue itself. With this uptake method, the effects of cannabis should be felt in 15-60 minutes.

INGESTION

Dixie Elixirs - Dixie Rolls - Chocolate Truffles - Colorado Bar - Dixie Scrips

Cannabis-infused foods and liquids take extra time to be broken down because they pass through the gastrointestinal tract and liver before entering the bloodstream. The experience of consuming cannabis-infused foods can feel much different than inhaling cannabis, because when cannabis is ingested in a solid or liquid form, a potent THC metabolite (11-hydroxy THC) forms in the liver. This metabolite has a higher affinity to bind to cannabinoid receptors and is 5-10 times more psychoactive than the originally ingested THC. Edible products can take from 30 minutes to 2 hours to take effect and can result in varying levels of psychoactive effects depending on a number of variables—including what someone has eaten, how much they've eaten and how comfortable they are with marijuana. Tell your customers to start with a low dose (1-5 mg) and wait at least 60 minutes before ingesting another small amount. Once they feel high, they need to stay well hydrated.

INHALATION

Vaping - Smoking

The traditional way to intake cannabis is smoking it, which generally provides a rapid onset of euphoria and other therapeutic effects within 5-10 minutes. Vaporization of THC rich cannabis oil is becoming more and more popular, because vaporized cannabis also provides the rapid onset of relief without the potentially harmful carcinogens of smoking. At Dixie, our concentrates are solvent-free, pure, CO_2 extractions of THC oil from the cannabis plant and are highly potent.

TOPICAL

Muscle Relief Lotion - Relief Balm -
Synergy Relief Balm - Bath Soak

Marijuana-infused topicals (lotions, balms and soaks) readily enter the skin layers only. They're effective at relieving pain and inflammation in the area in which they're applied. Since cannabinoids don't enter the bloodstream with this delivery system, topically applied THC doesn't have the opportunity to cross the blood-brain barrier (unless applied internally), and thus has no psychoactive properties. Topicals may help reduce scarring and may help with psoriasis/eczema.

THINGS TO KNOW ABOUT TOPICALS:

Topical cannabis offers a fast-acting localized effect.

Customers can combine their cannabis topical with an over-the-counter (OTC) anti-inflammatory product for added benefits.

Wrapping the area with an ace bandage or other material after topicals have been applied will improve absorption and effectiveness.

If an open wound is present, clients should consult their physicians before applying topicals.

QUICK-REFERENCE DEFINITIONS

Cannabinoids (CB1 / CB2 Receptors)
Cannabinoids are a class of diverse chemical compounds that act on cannabinoid receptors on cells that repress neurotransmitter release in the brain CB1 receptors are found primarily in the brain, more specifically in the basal ganglia and in the limbic system, including the hippocampus. While CB2 receptors are predominantly found in the immune system, or immune-derived cells with the greatest density in the spleen.

Endocannabinoid System
The endocannabinoid system is a group of neuromodulatory lipids and their receptors in the brain that are involved in a variety of physiological processes including appetite, pain-sensation, mood, and memory; it mediates the psychoactive effects of cannabis.

Entourage Effect
In 1998, Dr. Raphael Mechoulam coined the term "Entourage Effect" to describe the physiological synergy which occurs when combining compounds such as terpenes and cannabinoids.

Titration
A method of determining the concentration of a substance needed to bring about a given effect.

Terpenes
Terpenes and terpenoids are the primary constituents of the essential oils of many types of plants and flowers. Essential oils are used widely as natural flavor additives for food and in medicines and alternative medicines. For example, Vitamin A is a terpene.

Bioavailability
The degree and rate at which a substance (as a drug) is absorbed into a living system or is made available at the site of physiological activity.

Indica
The high produced from Indica bud is a strong physical body high that makes you sleepy or 'couch-locked' and provides feelings of deep relaxation. Indica dominant marijuana strains tend to have a strong sweet or sour odor to the buds (ex. Kush, OG Kush) and are helpful in treating general anxiety, body pain, and sleeping disorders.

Sativa
Sativa dominant marijuana strains tend to have a more grassy type odor to the buds providing an uplifting, energetic and "cerebral" high that is best suited for daytime smoking. A sativa high is one filled with creativity and energy, as being high on sativa can spark new ideas and creations. Many artists take advantage of the creative powers of cannabis sativa (marijuana) to create paintings.

THE CANNABINOIDS

CANNABIS 101

A BRIEF OVERVIEW

The world is just now beginning to get a taste of cannabis research, and scientists are publishing new findings every day. Here are three quick facts about what cannabis is and how it works.

1

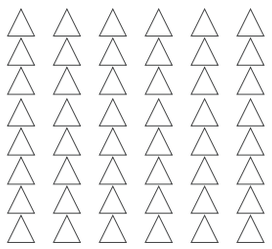
The cannabis plant has more than 113 different chemical compounds, called cannabinoids, that have different effects on the human body. THC and CBD are the most well-known of the cannabinoids.

2

The cannabis plant also has dozens of different organic compounds, called terpenes, found in various strains of the plant. These terpenes greatly impact the experience each strain has the ability to offer. Scientists are beginning to theorize that terpenes may be responsible for the lion's share of strain-based differences cannabis consumers experience.

3

The human body has a natural endocannabinoid system that is built to process cannabinoids. This is precisely why phytocannabinoids (like those found in cannabis) prove to be such powerful medicine.



THE BODY'S NATURAL SYSTEM FOR PROCESSING THIS NATURAL THERAPY

THE ENDOCANNABINOID SYSTEM

The endocannabinoid system is a central regulatory system that affects numerous processes in all vertebrate, and some invertebrate, animals. It's known to affect bodily processes such as appetite, mood, and sleep. And it's believed that the endocannabinoid system's overall function is to regulate physiological stability by augmenting many different processes. The system works by binding a group of molecules, called endocannabinoids, which are naturally produced by our bodies, to cannabinoid receptors. Anandamide and 2-arachidonoylglycerol are the primary endocannabinoids.

Scientific research on the system over the past few decades have shown that there are two main cannabinoid receptor types: CB1 and CB2. CB1 receptors are most abundant in the central nervous system, while CB2 receptors are more abundant in the cardiovascular, gastrointestinal, and peripheral nervous systems. Phytocannabinoids, which are introduced to the body from external sources, bind to the same CB receptors as endocannabinoids but interact with the endocannabinoid system much differently. This difference is what opens the door to new medicinal and therapeutic possibilities.

QUICK REFERENCE

***Endocannabinoids** are produced by the body. **Phytocannabinoids** are introduced to the body from external sources. THC and CBD are phytocannabinoids.*

PHYTOCANNABINOIDS

ACTIVATING THE ENDOCANNABINOID SYSTEM FROM THE OUTSIDE IN

There are almost 500 natural components that are found in cannabis. Around 70 of them are classified as phytocannabinoids and can interact with CB receptors to produce a wide array of effects on our bodily systems. Each phytocannabinoid is unique and interacts with our endocannabinoid system differently. These differences are what lead scientists to believe that phytocannabinoid therapies have the power to be very successful methods of treating multiple ailments, from cancer and epilepsy to PTSD.

The most well-known cannabinoid is THC. But THC, like all cannabinoids, has several different molecular isomers and states. The reason you can't get high by eating raw cannabis is that its THC is in an acidic form called THC-A. The raw plant material must be heated or exposed to UV light in order to remove the acidic CO_2 component of THC-A (a process known as decarboxylation), neutralizing the molecule into forms of THC that can provide recreational and medicinal benefits. When neutral cannabinoids are ingested, rather than combusted and inhaled, they transform again as they're processed by the liver. For example, decarboxylated Δ-9 THC (the one that gets you high when you smoke) becomes a more potent and longer-lasting form called 11-hydroxy THC when it's metabolized by the liver.

Now that you have a basic understanding of the endocannabinoid system and cannabinoid chemistry, let's dig into specific high-profile cannabinoids.

PHYTOCANNABINOIDS: THE HIGHLIGHT REEL

A FEW OF OUR FAVORITES AND HOW THEY WORK

There are over 70 known cannabinoids, but here is the skinny on a few cannabinoids that are most well-known and that scientists have researched most heavily.

CBG

(Cannabigerol)

CBG, specifically its acidic form CBG-A, is the "parent" cannabinoid. It's what makes cannabis so unique. The cannabis plant contains enzymes called synthases which turn CBG-A into other cannabinoids as the plant matures in vegetation and flowering. THC-A, CBD-A, and CBC-A are the primary products of these synthases. CBG interacts with CB1 receptors in an opposite manner of THC, so it is thought that CBG may decrease the 'heady' feeling associated with THC. CBG is being researched as a painkiller, an anti-inflammatory (specifically in the gastrointestinal system), and a tumor-growth blocker. CBG inhibits GABA (a chemical that affects nervous system stimulation) uptake in the brain, which means it can act as a potent muscle relaxant and anti-anxiety treatment.

THC

(Tetrahydrocannabinol)

We won't spend too much time on our favorite cannabinoid, since you are most familiar with this CB agonist. THC mainly affects the central nervous and immune systems and is the primary psychoactive cannabinoid. Over decades of breeding cannabis underground to produce the highest highs, THC has become dominant in the cannabinoid profile of the Cannabis sativa and Cannabis indica species. THC has been used medicinally for its painkilling, anti-inflammatory, appetite-stimulating and anti-depressant effects. It gets a lot of attention for its psychoactive affects, because other cannabinoids have even more medical promise than THC.

THCV

(Tetrahydrocannabivarin)

THCV is a homologue of THC. This means that the molecules are identical compositionally, but different sequentially. So THC has six carbons on its tail, while THCV only has three. Those three fewer carbons slightly change the way THCV binds to receptors. In rats, scientists have seen that pure THCV produces a more psychoactive and energetic high than THC. Landrace strains in Africa have been seen growing naturally with high levels of THCV, and local strains like Jack the Ripper, have been tested as high as 5% THCV. THCV has unexpected effects on a medicinal level. While it has similar properties to THC, its three fewer carbons give it properties of an appetite suppressant and a memory aid. Go figure.

CBN

(Cannabinol)

Slightly psychoactive with about 10% the effect of THC, CBN is the primary product of THC breakdown. The CBN content of cannabis goes up as its THC is broken down due to UV light and oxygen exposure. When the tricomes on overripe buds turn from milky to amber, the plant's THC is degrading to CBN. So let's say you bought an ounce of a typically uplifting sativa strain but didn't keep it in an airtight container. If you smoke that a few weeks later, you'll probably notice your bud makes you tired rather than euphoric.

The psychoactive effect of CBN is one of a sedative nature, and researchers have considered CBN as a potent sleep aid to treat insomnia sufferers. Other medicinal effects of CBN include bone growth stimulation, anti-convulsion and anti-anxiety. In an Italian study, researchers also saw promising anti-bacterial properties in the treatment of MRSA.

***Fun fact**: Some geneticists are working to turn off the synthases in cannabis, enabling the plant to only produce THC.*

CBD

(Cannabidiol)

Over the past five years, CBD has become the most popular cannabinoid. This non-psychoactive, second most abundant cannabinoid has shown the most medical efficacy and is furthest along in clinical research. Unlike THC, CBD does not interact directly with CB receptors with high affinity, but rather indirectly affects these receptors through other pathways that are still being researched and defined.

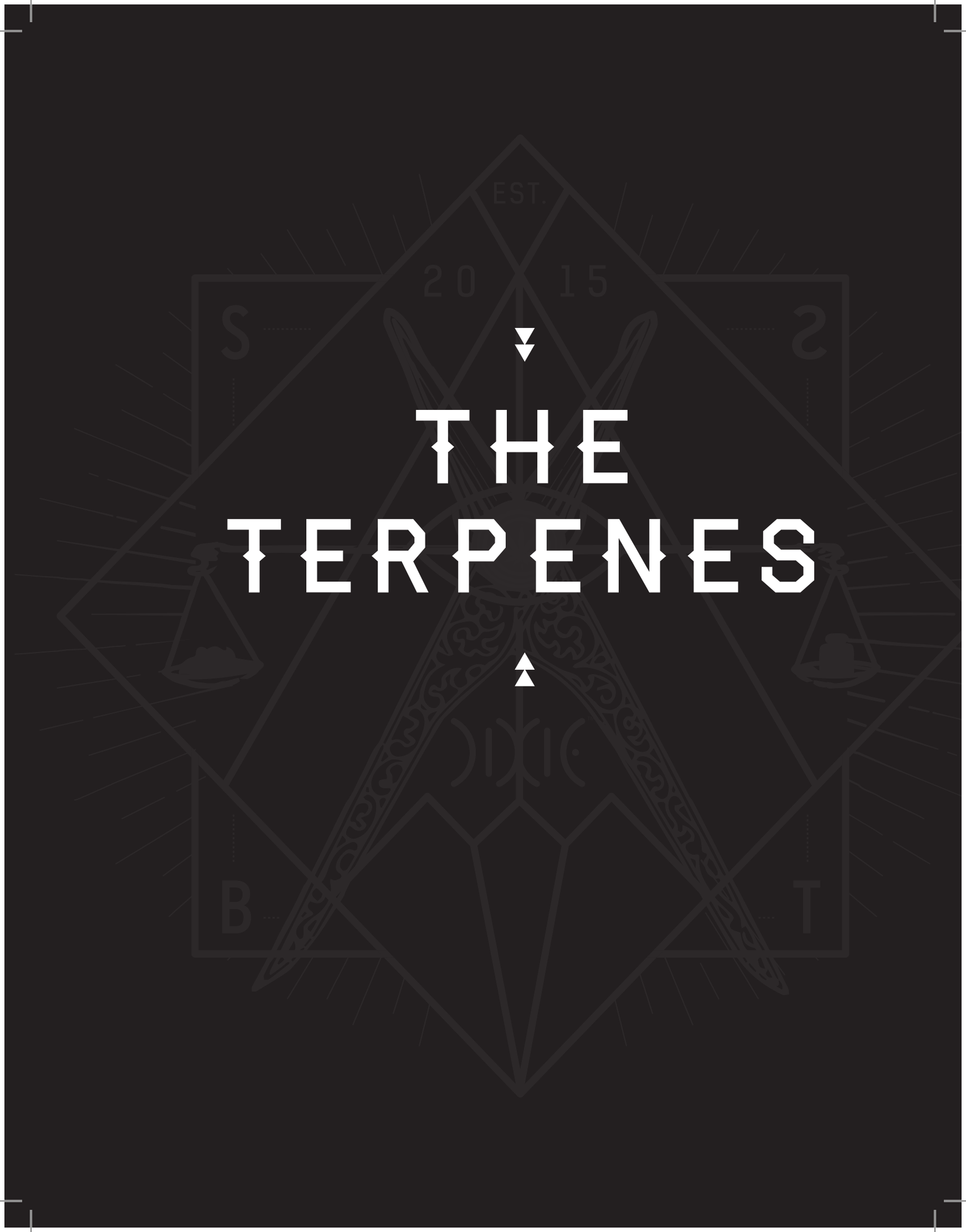
Cannabidiol has an anti-psychotic affect. It decreases the high from THC when taken after THC consumption. Conversely, it primes the endocannabinoid system when taken before THC, producing a more psychoactive high. This strange dichotomy is another cannabinoid mystery that scientists are still trying to figure out.

The most successful medical therapy using CBD treats epileptic disorders—like Pediatric Dravet, the syndrome that has been garnering the most media attention. CBD shows strong promise in treating MS, cancer, schizophrenia, depression, and PTSD. If there is one thing to watch in cannabis over the next several years, its medical trials of cannabidiol.

CBC

(Cannabichromene)

When talking about CBC, you have to mention the concept of cannabinoid synergy. The reason whole plant cannabis therapies have had more anecdotal success than isolated or synthetic cannabinoids lies in this theory of synergy. The theory states that natural cannabinoids in combination with each other have an effect on CB receptors, and the body, that is greater than the sum of the individual cannabinoid benefits. CBC is thought to have little to no direct effect on CB receptors but may affect other receptors that mediate the endocannabinoid system. Several studies that used both THC and CBC showed that their combined therapeutic effect on pain, inflammation and anxiety was greater than either THC or CBC alone. In fact, on its own CBC did not demonstrate a significant effect on any of the symptoms. However, there has been research conducted on the exclusive use of CBC as an anti-proliferation cancer treatment and a remedy for acid reflux that reduces GI inflammation.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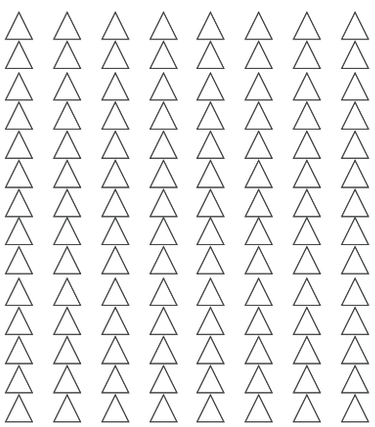
TERPENES

TERPENES

THESE LITTLE ORGANIC COMPOUNDS HAVE BIG EFFECTS ON YOUR STRAIN

Terpenes are what make Lemon Skunk and Pineapple Express smell like tropical beverages and what create the dank musky goodness of Blue Dream or OG Kush. Terpenes are found in all of the flora and fauna on earth and are basically the aroma and taste molecules—they produce the fragrances of flowers, herbs and spices. Terpenes derived from fruits and herbs have been used medicinally for centuries. And in recent years, terpenes have reemerged in the medical spotlight due to research indicating that terpenes interact with our CB receptors when taken in conjunction with cannabinoids.

Some of the biggest differences between Indica and Sativa strains are the type and ratio of terpenes in each. Since trace cannabinoids have been bred out of strains for THC potency, research is showing that it's both strains' terpene profiles and their cannabinoid profiles that lead to the differences the strains produce.



5 TERPENES YOU SHOULD KNOW

LIMONENE

Limonene has a citrus aroma and taste and is found in many sativa strains. It is commonly used in aromatherapy as a mood booster and can alleviate depression. Limonene likely plays a key role in the uplifting euphoria associated with sativa strains. It's also a potent anti-fungal, anti-bacterial and anti-carcinogen. And it can alleviate acid reflux and digestive ailments. Other natural sources of limonene include citrus fruits and herbs like peppermint and rosemary.

LINALOOL

Linalool is found in over 200 species of plants and is usually associated with lavender. But it's not just abundant in that purple herb. It's also in your favorite purp strains like Grand Daddy Purple, and Purple Kush. Linalool acts as a calming agent in many essential oil blends, and has been proven to reduce anxiety and pain. Much like CBD, linalool shows clinical promise as an anticonvulsant and has anti-bacterial properties that may be effective in treating the core causes of acne.

PINENE

Alpha-Pinene, one of the pinene isomers, is the most abundant terpene found in nature. And as you probably guessed, it plays a big role in the smell of pine trees. The scent and taste of alpha-Pinene acts as an insect repellent in conifer trees. It also produces the fresh, piney smell and flavor found in strains like Chemdawg and Trainwreck. Pinene is a potent bronchodilator and could be helpful in the treatment of asthma. In cannabis consumption, Pinene aids in alertness effects from sativa strains, and it actually may mitigate THC side effects such as short-term memory loss.

MYRCENE

Myrcene brings an earthy skunk smell and flavor to cannabis. Most abundantly found in hops, a cousin of cannabis, Myrcene is known for its sedative effects and shows promise as a sleep aid. Myrcene may also act in synergy with THC, with their combined molecules creating a stronger effect than THC alone. Scientists believe Myrcene plays a key role in the relaxing effects associated with indica strains. The aroma of Myrcene has been described as citrusy, clove-like, earthy, fruity, mango-like and similar to green vegetation.

TERPINEOL

Terpineol has been described as having a floral, lilac and orange blossom fragrance. In cannabis, it's usually found with pinene, and its light aroma is overpowered. Terpineol causes drowsiness and a desire to rest, and it's usually found in indica strains—many Afghan strains have higher amounts of Terpineol. Medically, it's useful as a sleep aid and general sedative.

THE PRODUCTS

At Dixie, we innovate delicious products designed to work with all of the major uptake systems. We believe that this is the best way to provide the best selection of effective products to our customers and patients.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Now that you're well versed in how cannabinoids and terpenes interact with the body, we think you're ready. Ready to join the Secret Society of Budtenders. You'll get free swag, free entrance to private events, free product testing and access to exclusive information, just for being good at what you do. At Dixie, we know that a skilled budtender can make a world of difference in a customer's cannabis experience. And we're not about to let your hard work go overlooked.

Join the Secret Society of Budtenders
at dixieelixirs.com/ssbt