

420 LIFESTYLE

BARCELONA

GERMANY
LEGALISES

THE
GANJA GAMES
Ganja Gods BGM

MEDICATING
WITH CANNABIS

SOCIALISE



The
Hash Queen
Mila Jansen

NEW GODS
WILL BE
CROWNED

THE
GANJA

SCAN QR
FOR
DETAILS



THEGANJAGODS.COM

IN ASSOCIATION WITH



420
LIFESTYLE
magazine

Oct 2024 BGN

GAMES

Ganja Gods BGN



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Mila Jansen & Frenchy Cannoli

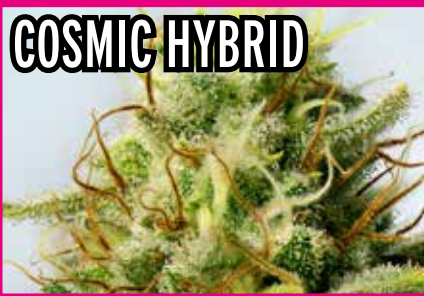




AWARD WINNING CBD FLOWER

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COSMIC HYBRID



GRAVITY KUSH



ASTRA SKUNK



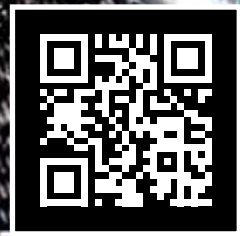
ROCKET HAZE



FOUR BRAND NEW STRAINS AVAILABLE NOW

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THE FIRE



CA



Welcome to the second edition of 420 Lifestyle Magazine! As we continue to expand within the burgeoning 420 community, we are thrilled to bring you even more fantastic content that celebrates and elevates the 420 lifestyle.

In this edition, you'll find inspiring stories, features and social reviews, that highlight the vibrant spirit and innovation within the 420 community. From reader reviews to exclusive interviews with industry trailblazers, our aim is to keep you informed and inspired. Our community is expanding, and with it, our commitment to delivering high-quality, engaging content that reflects the dynamic nature of the 420 world.

We are particularly excited to announce The Ganja Games 1 - The Ganja Gods, the latest Cannabis Cup event set to take Barcelona by storm. This new event promises to showcase the best of the best in cannabis cultivation and culture, bringing together enthusiasts and experts from around the globe. Stay tuned for exclusive coverage and behind-the-scenes looks at what is sure to be an unforgettable celebration of 420 excellence.

Thank you for joining us on this journey. We hope you enjoy this edition as much as we enjoyed creating it for you. Please join us in celebrating the continued growth and success of the 420 community. Here's to new experiences, exciting developments, and the shared love for all things 420.

Happy reading and see you at The Ganja Games!

Yours truly,

The Editor
420lifestylebcn.com

Nomad with his Yaks and yak hair tent, 1976



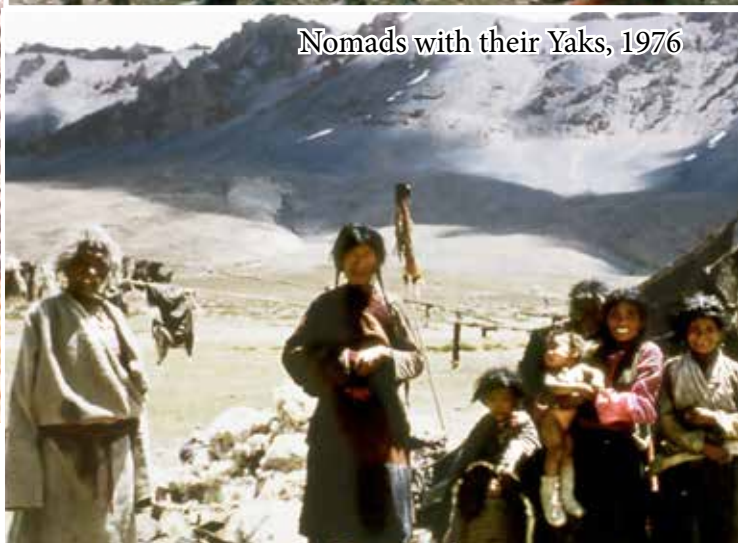
Nomad with his altar in his yak hair tent, 1976



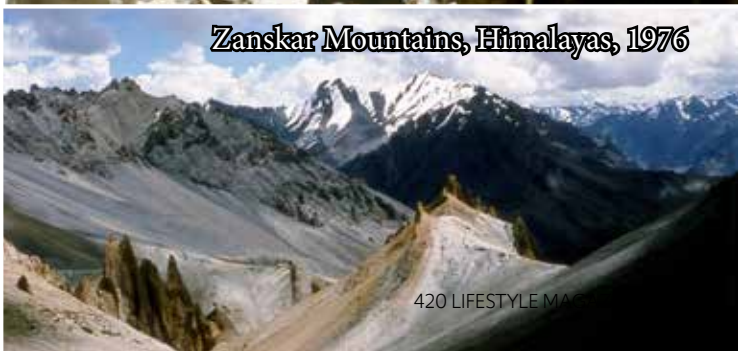
Mila & her Nomad buddies, 1976



Nomads with their Yaks, 1976



Zanskar Mountains, Himalayas, 1976



Until 1994 all the hash on the market was handmade, and it was made all the way from Turkey to China. People only smoked hash in those countries, actually all along the ancient silk route. All along that route you would find good hash, it was the camel drivers that would smoke as they moved along, dropping seeds as they went.

Mila Jansen



MARRY JANE



A European Pioneer in the world of CBD

Marry Jane Cannabis

A Breakthrough in Natural Wellness: Unleashing the Power of CBD for a Balanced Lifestyle

Cannabis and its derivatives have gained popularity across diverse demographics in recent years. From medical benefits to recreational use, the cannabis industry has boomed globally. One significant cannabis derivative, CBD (cannabidiol), has taken center stage.

CBD is a non-psychoactive compound found in cannabis plants, believed to offer various health benefits without the typical associated "high".

The CBD industry has shifted towards wellness and self-care, and leading this movement is Marry Jane. A brand committed to premium CBD products embodying purity and quality.

With an exceptional array of CBD products, Marry Jane leads the market, redefining holistic wellbeing.

The journey that ignited Marry Jane began with friends sharing a passion for cannabis. With an entrepreneurial spirit and a common appreciation for plant benefits, the brand Marry Jane was sown and nurtured.

Proud of their talented, socially conscious workforce, Marry Jane values equality, sustainability, and responsibility.

The team is committed to sustainable growth and development, focusing on producing top-quality products.

Marry Jane embodies a deep-rooted passion for excellence and transformative impact. Their team of experts cultivators, scientists, and doctors creates premium CBD products with maximum therapeutic potential, embracing the full spectrum of hemp compounds.

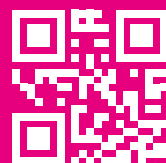


For a good reason, the team prides itself on meticulous CBD selection, sourcing only the finest organic hemp. The entire product range undergoes comprehensive lab testing for consistent quality assurance. Quality and safety remain paramount, ensuring contaminant-free products and the absence of harmful elements.

With diverse CBD products, Marry Jane caters to various preferences and lifestyles. From tinctures to edibles, topicals to vape cartridges, the brand covers all aspects of holistic wellness. Whilst adhering to the highest standards. Strains composed of 14-19% CBD offer potential benefits, especially for illnesses where, for example, relaxing muscles can help relieve pain. Pre-rolls provide convenient CBD use on the go.

Behind every growth, dedicated staff strive for excellence.

Visit Marry Jane CBD store in Barcelona, located on the famous La Rambla, to experience their award-winning products and meet their friendly, dedicated staff. They're eager to answer questions and showcase their full range of products.



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MEDICATING WITH CANNABIS

Exploring the World of Cannabis Consumption



Cannabis, once relegated to smoking joints and homemade brownies, has evolved into a diverse landscape of consumption methods, each offering its own unique experience and benefits. From traditional smoking to innovative edibles and everything inbetween, let's delve into the myriad of ways cannabis can be enjoyed.



1, Smoking:

- **Method:** The classic method involves inhaling the smoke from combusted cannabis flowers through a pipe, bong, or rolled joint.
- **Benefits:** Offers rapid onset of effects, allowing users to gauge dosage and experience immediate relief from symptoms like pain or anxiety.



2, Vapourising/Vapes:

- **Method:** Vaporisers heat cannabis flower or concentrates to a temperature that releases cannabinoids and terpenes without combustion, producing a vapor that is inhaled.
- **Benefits:** Provides a smoother inhalation experience compared to smoking, with reduced respiratory irritation and potential for a more controlled dosage.

3, Edibles:

- **Method:** Cannabis-infused edibles encompass a wide range of products, including baked goods, chocolates, gummies, and beverages, where cannabis extracts are incorporated into the recipe.
- **Benefits:** Offers a discreet and convenient way to consume cannabis, with effects typically lasting longer and being more intense compared to inhalation methods. Also, it eliminates the need for smoking or vaping, which may not be preferable for some individuals.





4, Tinctures:

- **Method:** Cannabis tinctures are liquid extracts made by soaking cannabis flower or concentrates in alcohol or glycerin. They are typically administered sublingually (under the tongue) using a dropper.
- **Benefits:** Provides a discreet and precise dosing method, with effects kicking in relatively quickly due to absorption through the mucous membranes under the tongue. Tinctures are also versatile and can be easily added to food or beverages.



5, Topicals:

- **Method:** Cannabis-infused topicals include lotions, balms, and oils applied directly to the skin. They are absorbed transdermally, providing localized relief without psychoactive effects.
- **Benefits:** Ideal for targeting specific areas of discomfort or inflammation, topicals offer relief from conditions like arthritis, muscle soreness, and skin irritation without inducing a “high.” They are also non-intoxicating, making them suitable for daytime use.



6, Dabbing:

- **Method:** Dabbing involves the flash vaporization of cannabis concentrates, such as wax, shatter, or budder, on a heated surface, typically a nail or banger, and inhaling the resulting vapor through a dab rig.
- **Benefits:** Provides rapid and potent effects, making it popular among experienced users seeking intense relief from severe symptoms. Dabbing also offers a cleaner inhalation experience compared to smoking flower, as it eliminates combustion byproducts.



7, Capsules:

- **Method:** Cannabis capsules contain measured doses of THC, CBD, or a combination of cannabinoids and are ingested orally like any other pill or supplement.
- **Benefits:** Offers a convenient and discreet dosing method, with effects kicking in gradually as the capsules are digested. Capsules provide a precise and consistent dosage, making them suitable for medical patients or those seeking standardized effects.



8, Beverages

- **Method:** Cannabis-infused beverages encompass a variety of options, including teas, coffees, sodas, and flavored waters, where cannabinoids are dissolved into the liquid.
- **Benefits:** Provides a refreshing and enjoyable way to consume cannabis, with effects typically milder and longer-lasting compared to smoking or vaping. Cannabis beverages offer an alternative to alcohol for socializing or relaxation without the hangover.



MANUEL GARCIA
28 YRS. BARCELONIAN

DR. GREEN BCN

Join me as I recount my recent visit to Dr Green Smoking Club and share my experiences with all you fellow tokers out there

Once you step through the doors of Dr Green Social Club, you're greeted with a modern, neon lit interior. There is a pool table and some nice neon signage, lighting effects and cool artworks.

Work your way down the small corridor adorned with skateboards and the place opens up, where you are greeted with warm smiles and a friendly atmosphere. The interior is cozy, with comfortable seating and soft lighting creating a relaxed ambiance.

There is a nice selection of original artworks one the wall, several tv screens dotted about and the music selection is on point, providing the ideal background for conversation.

Dr Green Social Club offers an impressive range of products and the knowledgeable staff members were incredibly friendly, patiently answering our questions about the different products available.

Dr Green Social Club regularly hosts events and activities to keep its members entertained. From live music performances to game nights, there's always something going on to enhance your experience.

Whether you're a solo traveller or in a group, the friendly ambiance encourages social interactions. It really felt like a community of cannabis enthusiasts coming together.



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9. Sublingual Sprays

- **Method:** Cannabis sublingual sprays deliver a measured dose of cannabinoids directly under the tongue through a spray nozzle, where they are quickly absorbed into the bloodstream.
- **Benefits:** Offers a discreet and convenient dosing method, with effects typically felt within minutes. Sublingual sprays provide precise dosing control and are ideal for individuals seeking fast-acting relief without the need for inhalation or ingestion.



10. Suppositories

- **Method:** Cannabis suppositories are bullet-shaped capsules inserted into the rectum, where they dissolve and release cannabinoids into the bloodstream through the rectal mucosa.
- **Benefits:** While less common, suppositories offer a unique consumption method preferred by some medical patients seeking rapid and efficient absorption of cannabinoids. They bypass the liver's first-pass metabolism, resulting in faster onset and increased bioavailability compared to oral ingestion.



11. Transdermal Patches

- **Method:** Cannabis transdermal patches adhere to the skin, delivering a controlled dose of cannabinoids through the dermal layers over an extended period.
- **Benefits:** Ideal for consistent, long-lasting relief, transdermal patches offer a discreet and hassle-free dosing method. They are particularly useful for managing chronic conditions, such as pain, inflammation, and neuropathy, providing sustained relief without the need for frequent administration.



12. Inhalers

- **Method:** Cannabis inhalers function similarly to asthma inhalers, delivering a metered dose of cannabinoids in aerosol form for inhalation into the lungs.
- **Benefits:** Offering precise dosing control and consistent delivery, inhalers provide a familiar and convenient method of consumption for medical patients or individuals seeking a discreet and controlled inhalation experience. They are especially well-suited for managing respiratory conditions or acute symptoms.

From traditional smoking and vaping to innovative methods like suppositories and transdermal patches, the world of cannabis consumption offers something for everyone. Whether seeking fast-acting relief, sustained effects, or discreet dosing, there's a consumption method to suit every preference and lifestyle. As cannabis legalization spreads and stigma diminishes, consumers are empowered to explore and discover the method that best aligns with their needs and desires, ushering in a new era of cannabis consumption characterized by diversity, accessibility, and innovation.



WORLDWIDE SAM



"WorldWideWaves" in August 2023.

Your first live performance was on tour in the UK, how was that experience?

I am forever grateful. An experience of a lifetime, performing in London, and throughout parts of England was so authentic. The UK has such a love and passion for music that I noticeably feel a bit different from the States, and the experience on stage was really well received. I am forever grateful to Grim Sickers for bringing me out on tour, that is my brother. Listening to all of the accents and different vibes of the people at shows across the UK was truly hilarious and special, I am grateful.

What is coming in 2024 from WorldWideSam?

A lot in store, I'm really excited there is a universal energy shift in the air. I have been trying to stick to releasing new music on a monthly basis and releasing often. I am in the process of finishing some really authentic records and writing new tunes consistently. Hoping to start working with some different vocal artists as well this year, and kind of finalizing my initial EP release and more singles. I'm looking forward to the collaboration process recording with other vocalists as well as working with different producers. continue working on my sound and voice, having fun, making music that makes me feel amazing and sharing it with my friends and the world.

Stay tuned, peace and love WorldWide, thank you so much for the opportunity to sit down with you, it has been an honor.



Spotify



Instagram



Youtube

Who is WorldWideSam?

My name is Samuel Szalay Howell I am a musician from Seattle, Washington making progressive flow hip hop music. I grew up in the culture of basketball and hip hop music from a very young age so I am greatly influenced and inspired to make music that sounds good, moves people, and conveys insight about the real existence of the human condition. Sharing insight and knowledge, what hip hop is truly all about at its core.

What are some of your musical influences?

I grew up in a household of music with a lot of Bob Dylan being played, Sade and Bob Marley, Jimmi Hendrix, Miles Davis, Marvin Gaye, Michael Jackson to name a few haha. My father has played the guitar for over 40 years so music is in my blood. I have found a really strong connection with Rhythm and Blues music especially when I am in a creative writing process. The genres I feel most drawn to are Hip Hop, RnB, Electronic, Afrobeat, and Reggae.

What does music mean to you?

Music is life, you know in a literal sense. I would consider music a very big part of the human experience, we all have some type of connection to music and what makes us feel something and dance. Music is such an essential part of my life for which I am truly grateful.

What inspired you to start writing tunes and putting them out?

I got started a few years ago in 2018, being around a music studio in San Francisco everyday. Having a lot of producer friends creating all kinds of sounds and dope vibes. One day I just started writing to something my friend was creating and I jumped on the microphone super inspired and recorded a track, I never released it or anything, just kind of left it at that. Last year I was living in Los Angeles and found a real passion for writing and creating music. I had a folder of some amazing beats that my good friend Austin had sent me and overtime just resonated with me. Within the first two months of writing I started recording at the studio regularly and put out my first single

THE FIRE



CA





Marry Jane CBD Shop is situated directly on the renowned La Rambla, making locating the shop incredibly convenient. And Marry Jane CBD Shop has firmly established itself as a distinguished hub for CBD enthusiasts.

Showcasing an impressive array of CBD products, the shop seamlessly combines quality, diversity, and a warm ambiance to provide an unparalleled experience for its customers. This review aims to delve into the nuances that position Marry Jane CBD Shop as a premier choice for CBD enthusiasts in Barcelona.

Award-Winning Cannabis: One of the standout attributes of Marry Jane CBD shop is its dedication to offering an award-winning cannabis flower. With a strong belief in the therapeutic advantages of CBD, the shop cultivates and manufactures all its products in Switzerland, prioritizing organic cultivation techniques and sustainable practices.

An array of flowers encompassing the entire spectrum from invigorating sativas to soothing indicas, Marry Jane CBD Shop offers a wide range of strains catering to diverse preferences.

Reassuringly, the shop has garnered recognition and accolades for its unwavering commitment to excellence. Numerous awards bestowed upon the shop validate its dedication to delivering only the finest CBD cannabis products to its customers, further cementing its reputation as a trustworthy and reputable establishment.

Stepping into Marry Jane CBD Shop Bcn, you'll sense an environment dedicated to the exploration of CBD. And indeed, that's the case.

The store's layout is meticulously designed with customer comfort and convenience as top priorities. Clean lines, white walls, elegant glass display cabinets showcasing a diverse selection of top-tier products, combined with a soothing color palette, create a modern yet calming atmosphere.

SWISS QUALITY GUARANTEED

MARRY JANE CANNABIS HAS ACCUMULATED GLOBAL AWARD FOR BEST FLOWER

“4 BRAND NEW STRAINS”

COSMIC HYBRID

GRAVITY KUSH

ASTRA SKUNK

ROCKET HAZE



Just when you thought the extensive product variety in-store was sufficient, the knowledgeable and amiable staff play a pivotal role in elevating the overall experience. Possessing a profound comprehension of CBD and its benefits, they provide personalized guidance and recommendations, ensuring customers discover products tailored to their needs. The team's commitment to educating customers about CBD fosters an atmosphere of trust and transparency.

CBD flower cultivated by Marry Jane has already garnered an award within the CBD community: They secured second place in 2022 for the best CBD crop globally. All their products are devoid of the intoxicating effects associated with THC, with each strain containing less than 0.2% of this psychoactive component. This THC absence renders it fully legal in most parts of the world, including Europe. Purchase with confidence, knowing that Marry Jane CBD products adhere to the highest quality criteria. This ensures customers receive standardized products consistently of the highest quality.

Feel free to visit the store and explore the CBD collection, along with our range of CBD-derived topicals, seeds, attire, merchandise, and a diverse array of smoking accessories sourced from around the world.

Furthermore, the store's meticulous attention to detail extends to its online presence.

The official website, www.Marryjane.com

Delivers a seamless browsing

experience, enabling customers to peruse the product range and stay updated on the latest products.

At the core of the Swiss-brand Marry Jane AG Cannabis lies an ingrained passion for excellence and a mission to transform lives. Through a team of adept cultivators, scientists, and medical professionals, Marry Jane has succeeded in crafting a range of premium CBD products that consistently exceed customer expectations. By utilizing cutting-edge extraction methods,

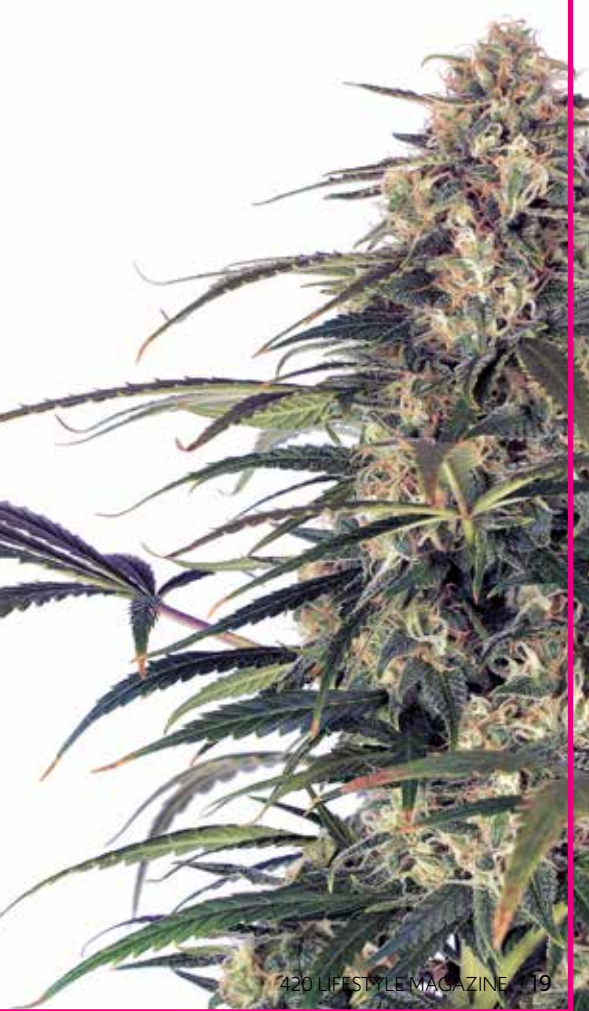
Marry Jane ensures its CBD products retain the complete spectrum of cannabinoids, terpenes, and beneficial compounds inherent in the hemp plant. This distinctive approach not only maximizes the therapeutic potential of CBD but also delivers a profound impact on overall well-being.

Every single Marry Jane CBD product undergoes stringent testing procedures to meet the highest industry benchmarks before reaching the market.

Prioritizing quality and safety, the brand ensures each product remains free from contaminants, pesticides, and heavy metals.

With Marry Jane, you can confidently embrace the potency of CBD without compromise.

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SOCIALISE

SOCIAL CLUBS OF DISTINCTION

We have collaborated and listened to the views of our readers, which has allowed us to present you with a **definitive list of Cannabis Clubs of distinction.** From secluded hideaways to bustling hubs of creativity, explore the most esteemed social clubs that have won the hearts and loyalty of cannabis enthusiasts. Spain, renowned for its avant-garde culture and openness, has become a hotspot for cannabis enthusiasts worldwide. Discover the unique atmosphere, exemplary services, and dedicated communities that make these clubs stand out in the fascinating subculture, which makes these European cannabis social clubs truly exceptional.

1. Social Clubs: Are private, members only clubs where like-minded individuals can come together and enjoy cannabis culture in a safe, secure, and private setting. They are 100% members only. Membership

is possible via direct invitation from another member (there is usually a small joining fee). Also, direct contact to the club via their internet or social media accounts will usually get you an invite to the club, where you can then join directly.

2. Low Profile: Social Clubs do not usually have obvious shop fronts, signage or anything to suggest that it is in fact, a cannabis social club. They tend to be hidden behind unassuming doors that are accessed by a bell system. When entering and leaving a club, Be quiet and respectful of the surrounding homes and residents.

3. Club Rules: When you join the club you will be given the clubs rules and a membership card, You must also always have your passport with you to enter. If getting a taxi either to, or from the club. Do not get it to stop directly outside the entrance.



The GG Club
BARCELONA



Spaced Bcn
BARCELONA





**CHIL
LTER**



Green Place Bcn
BARCELONA



Shiva Social Club
MARBELLA



Exotic House
BARCELONA



Club 67
BARCELONA



Calibis Social Club
BARCELONA



The Society
MARBELLA



Doctor Green
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Kush House
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THE SOCIETY MARBELLA

In true Marbella fashion, The Society has flipped the Neon lights and the black paint on its head and delivered something completely different. More reminiscent of a luxury Starbucks location. With its clean lines, contrasting walls, floor to ceiling windows and impeccable decor. A fully equipped, air-conditioned bar in a convenient location, sets the standard for a social club of distinction.

A STONES THROW AWAY FROM MARBELLAS FAMOUS MARINA AND BEACHES

Upon first approach it looked like we were going into somebodys house but then it opened up in to a light and airy members club, that felt like a luxury beachside bar. This really is a different experience to most of the social clubs on the Costa del Sol, as most opt for a dark, neon lit, almost night club feel without any windows and alot of the smaller clubs dont have any air-conditioning.

The Society is the complete opposite. A place to sit and work remotely. Have a coffee with friends and unwind. Chill out and read a book,

However, wives and brunch meetings aside, The Society boasts perhaps one of the finest selections of products on the Costa Del Sol.

The owners are from the USA, and bring that true Cali connection to Marbella. Whether you are looking for seasonal greens, edibles, extracts or vapes. The Society have you covered with their impressive, extensive products at the level one would come to expect in a luxury Marbella club setting.

I was greeted by friendly staff and a fully serviced bar. there were artworks and photographs adorning the walls and there was some casual music playing. The air-conditioning was cranked up and the place was an absolute pleasure. A very elegant, stylish club in a great location. The friendly attentive team will make you feel welcome throughout your stay and you will be welcomed not just as a member, but as part of the family.

AT HIGH SOCIETY YOU ARE
NOT JUST ANOTHER MEMBER,
YOU ARE FAMILY



SCAN QR CODE
FOR FURTHER
DETAILS





ONEWHEEL

High up in the Riff Mountain range of Morocco, within the emerald triangle is where i first experienced a Onewheel+ that had been brought up by a colleague from Barcelona.

As an ex-skateboarder I instantly fell in love with it. Within an hour i was pretty confident and within the next few days I was smashing around a large building site upon the very top floor, on a vast cannabis plantation.

Where had this thing been all my life?

One thing led to another and the next moment i am zooming around in the pitch black (and black is black up there, is zero light polution) Only the light of the board, filming on my phone. building spikes everywhere, sheer 40 foot drops over every edge as this was the current top floor but the structure work was in for the next floor but where no walls yet so this was practivcally the roof. Claiming I had created a new adrenaline sport Death Riding. A couple of years later i picked up the newer version, The Onewheel XR which offered various upgrades to the first model, including range. This makes it the perfect get around in Barcelona.

ONEWHEEL IS A NEW ELECTRIC BOARDSPORT

Onewheel makes advanced technology invisible. With self-balancing technology, just lean forward to speed up, lean back to slow down.

REVOLUTIONIZING THE EXPERIENCE OF RIDING

Onewheel has the most advanced motion sensing, hub motor and battery

technology available--you just won't see it. What you'll experience is a board that feels magical whether for fun, waiting for the surf to come up, or getting around town.

AN INCREDIBLE FEELING - FUN!

Riding Onewheel is like surfing or snowboarding -- no ocean or mountain required. It gives you that sublime feeling of snowboarding on a fresh powder day. Or that rush when you surf the perfect wave. Except you can do it anyday, anywhere. Get some flat ground and start riding.

RIDE RIGHT AWAY

Most people can learn to ride Onewheel in a couple minutes even if they're not used to boardsports. That's because controlling a Onewheel is so intuitive. Powerful sensors and sophisticated algorithms are constantly helping you balance and control your ride with just the forward or backward lean of your body. People with experience with other boardsports are often ready to ride aggressively within their first few minutes on Onewheel.

A DIGITAL VEHICLE

The ride experience of Onewheel is controlled by an algorithm we've been perfecting for years. Gyro and accelerometer sensors feed a powerful processor that determines the exact speed to drive the motor based on how you lean your body. State of the art power electronics give you smooth and responsive acceleration and regenerative braking.

REFINING THE RIDE

We began with a vision of bringing the amazing feeling of snowboarding on powder to the streets of the Bay Area in the Summer. This was the beginning of an odyssey that led us to being able to open up this technology to the world on Kickstarter.

The frame of Onewheel is CNC machined from solid billet 6061 aluminum. This creates the lightest and strongest vehicle. The motor is a unique design, integrated into the hub of the wheel, and manufactured to a very high standard of performance and finish. The deck is made from high-quality Canadian maple, just like the finest skateboards.

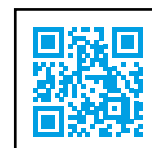
We've spent a lot of time tuning the hardware and algorithms to give Onewheel a fantastic combination of power and maneuverability.

"Onewheel self-balancing electric skateboard is the closest thing to a hoverboard you can ride." -- stuff.tv

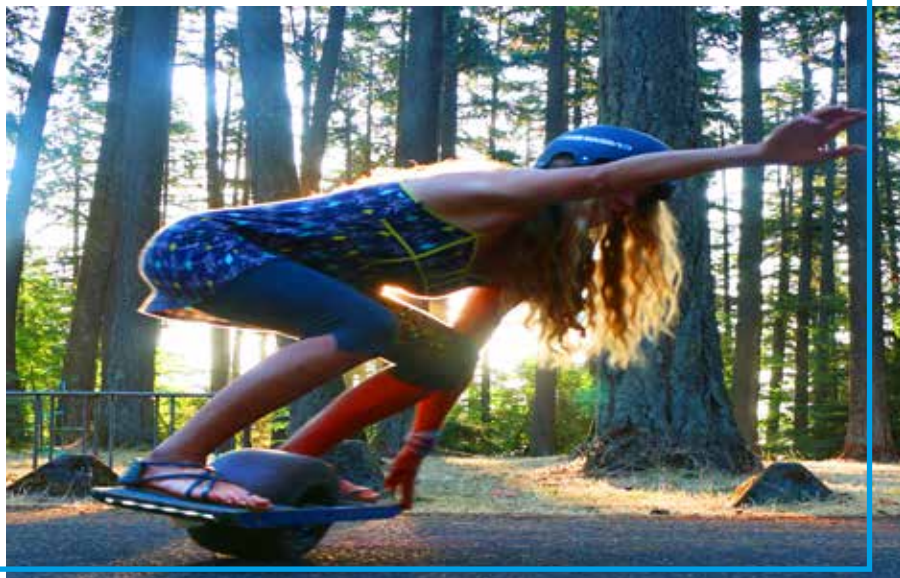
"we like that there's only one moving part--the wheel--so there aren't any gears or chains to mess with."
-- Popular Science

"Every street becomes like a fresh powder run" -- Gentry U.

"Imagine being able to snowbord without the snow. Surf without the sea and skate without the strain"
-- 420lifestylebcn



STOP DREAMING START RIDING



A woman with long brown hair and glasses is sitting on a bicycle. She is holding a lit cigarette in her right hand and looking down at it. She is wearing a grey sleeveless top and a grey cardigan. In the foreground, there are pink tulips and a brown leather bag. The background shows a red bicycle rack and a building.

From Tulips to Top-Shelf

Amsterdams'
Evolution as a

Canaboli

Capital

Journey Through The Green Mile

The Evolution of Amsterdam's Cannabis Culture



Amsterdam's vibrant cannabis culture has long been a beacon for enthusiasts worldwide. From its humble beginnings to its present-day status as a global hub for cannabis tourism, the journey of this city's relationship with the plant is nothing short of fascinating. Join us as we embark on a journey through time, exploring the rich history and evolution of cannabis culture in Amsterdam.

Seeds of Change - The Origins

In the 1960s, Amsterdam emerged as a haven for counterculture movements, drawing artists, activists, and free spirits from around the globe. It was during this era that cannabis began to take root in the city's underground scene. With the rise of "coffee shops" - establishments where cannabis could be openly bought and consumed - Amsterdam became a beacon of tolerance and liberation.

Blooming Gardens - The Golden Age

The 1970s and 80s saw Amsterdam's cannabis culture flourish. Coffee

shops multiplied, offering an ever-expanding variety of strains and products. The city's tolerant approach to cannabis drew tourists from far and wide, earning Amsterdam its reputation as the "cannabis capital of Europe." Meanwhile, activists and advocates pushed for further legalization and regulation, laying the groundwork for Amsterdam's progressive cannabis policies.

Navigating Stormy Waters - Challenges and Regulations

Despite its reputation as a cannabis haven, Amsterdam has faced its share of challenges. In the 1990s, the Dutch government introduced stricter regulations on cannabis sales, leading to the closure of many coffee shops. However, the city's resilient cannabis community rallied, advocating for sensible policies that balanced public health and personal freedom.

A New Dawn - Modern Cannabis Culture

In recent years, Amsterdam's cannabis culture has entered a new era of innovation and diversity. With the rise of legalized cannabis in other parts of the world, Amsterdam has adapted, embracing new

trends and technologies while staying true to its roots. Today, the city boasts a thriving cannabis industry, with artisanal growers, cutting-edge dispensaries, and a vibrant community of enthusiasts.

Beyond Borders - Amsterdam's Global Influence

Amsterdam's influence on cannabis culture extends far beyond its borders. From pioneering harm reduction strategies to shaping international attitudes towards cannabis legalization, the city has played a pivotal role in the global cannabis movement. As other countries follow in Amsterdam's footsteps, the legacy of the city's cannabis culture continues to grow.

Preserving Heritage - The Role of Cannabis Museums

Amsterdam's rich cannabis history is preserved and celebrated in its museums. Institutions like the Hash Marihuana & Hemp Museum and the Cannabis College provide visitors with a deeper understanding of the plant's cultural, medicinal, and industrial significance.



These museums serve as vital educational resources, ensuring that Amsterdam's cannabis heritage is not forgotten amidst the rapidly evolving industry.

Sustainability and Social Responsibility

As Amsterdam's cannabis industry continues to grow, there is a growing emphasis on sustainability and social responsibility. From organic cultivation practices to community outreach programs, businesses are increasingly recognizing their role in promoting ethical and environmentally-friendly practices. Initiatives like the Cannabis Social Club movement highlight the importance of inclusive and equitable access to cannabis for all members of society.

As Amsterdam's cannabis culture continues to evolve, one thing remains constant: the city's enduring spirit of tolerance, innovation, and community. From its humble beginnings in the 1960s to its present-day status as a global cannabis capital,

Amsterdam's journey is a testament to the power of advocacy, adaptation, and collaboration. As we look to the future, one can only imagine the new heights Amsterdam's cannabis culture will reach, guided by its rich history and boundless creativity.

What to Know About Marijuana in Amsterdam

Whether you follow a "When in Rome" mind-set and it's your first time lighting up or you consider yourself an herbal connoisseur, tourists of all ages visit coffeeshops. Some merely window-shop out of curiosity, while others aim to sample as much as possible. That said, the Dutch themselves are reported to smoke less pot than most other European populations, and Amsterdam's coffeeshop industry caters to international patrons. If you do decide to indulge in Amsterdam's infamous weed scene, there are a few things you should know.

THE SELECTION

Most coffeeshops offer a robust array of weed and hash, sold anywhere from €5 to €40 per gram (5 grams per person) to patrons over 18 with a valid ID. Don't hesitate to describe your dream high to the dealer, and he (or, rarely, she) will try to accommodate you.

Be wary: some Dutch-sold marijuana is potent enough to blow

the socks off the most hard-core pothead. If cannabis is not your usual drug of choice, don't feel you have to play cool; ask questions of the staff and use caution whatever your medium—joint, bong, vaporizer, or brownie. If you do overindulge, try not to panic. Find a quiet place, take deep breaths, and remember that the discomfort will pass. Sometimes consuming something with as much sugar in as you can possible

THE DEAL ON DEALING

Amsterdam is home to an estimated 160 coffeeshops, but that number is decreasing. As of January 2014, coffeeshops have to be at least 250 meters from high schools, which has led to several closures. A 2007 law that prohibits the side-by-side sale of marijuana and alcohol has forced proprietors to dry out their bars to retain coffeeshop licenses. What's more, since July 1, 2008, Amsterdam, like many other cities, has become smoke-free; smoking tobacco is banned from interior public spaces, including coffeeshops, and is only allowed in designated areas. Confusingly for visitors and locals alike, it is legal to smoke a pure joint (rolled with just weed or hash) in a coffeeshop, but not in bars, restaurants, and clubs.

Currently, it's acceptable to sell small amounts of marijuana via the "front door" of a coffeeshop where the customer enters. However, the "back door" through which the product arrives is linked to the illegal world of the mysterious wholesale supplier. Technically speaking,



selling marijuana is officially prohibited, but the government has barely bothered to enforce this legislation—the buzzword here is “decriminalized.” Thanks to the Dutch Opium Act of 1976, an important distinction is made between hard drugs and soft drugs (weed being soft).

STAYING LEGAL

Throughout 2011 and 2012, a movement was afoot to require a membership card, or *wietpas*, for those wishing to partake of the offerings of Amsterdam’s famed coffeeshops—anything and everything from marijuana to hashish and ganja cookies. That law, which would have excluded tourists from coffeeshops and was never supported by Amsterdam officials, was voted down in 2012. Happily, things will stay as they are, and visitors will keep the same rights as the Dutch (and the city will keep its cannabis revenue). For the latest regulations on cannabis dos and don’ts, check Amsterdam’s official website (www.iamsterdam.com).

The old laws on the books currently allow up to 5 grams of marijuana and several other cannabis-laden comestibles (pot brownies, space cakes, ganja cookies) to be dispensed at a licensed venue to anyone over 18. It also allows possession of up to 30 grams by individuals, solely for personal use. Marijuana must be purchased on regulated premises (coffeeshops) and either used on the spot—since 2008, most coffeeshops have designated “smoking rooms,” where you can enjoy your spliff or joint—or taken home. It is also legal to smoke in the street or in the park.

Where Dutch drug policy differs from the rest of the world is that Dutch law makes a distinction between hard drugs and soft drugs. Hard drugs such as heroin and cocaine are considered highly addictive and a dangerous threat for people’s health, and so it is illegal to sell them. A recent spate of tourist deaths from white heroin sold as cocaine on the streets has made the authorities ever more vigilant, and electronic billboards on the city’s major squares warned tourists to stay away from street dealers. The signs are now gone, but you’d be wise to heed the advice. Drug addicts, however, are not seen as criminals but as patients, so they don’t risk imprisonment simply for possession of hard drugs. Cannabis may be psychologically addictive but not physically; thus, soft drugs are tolerated in Dutch society.

12 Million Wooden poles

Amsterdam stands not only on its picturesque canals but also on an intricate network of over 11 million wooden poles. These silent sentinels, driven deep into the city’s marshy foundation, have been the unsung heroes preserving Amsterdam’s architectural marvels for centuries.

Dating back to the city’s humble beginnings in the 12th century, Amsterdam’s founders encountered a challenging landscape of marshlands and waterways. To build a stable foundation for their burgeoning city, they turned to timber piles, a technique borrowed from their Venetian counterparts.

These wooden stakes, made from oak or pine, were driven into the soft, waterlogged soil until they reached firmer ground, forming the groundwork for Amsterdam’s iconic buildings and streets.

The use of wooden piles became integral to Amsterdam’s urban development, enabling the construction of its iconic canal houses, churches, warehouses, and bridges. As the city expanded over the centuries, so too did the reliance on this ingenious engineering solution. Today, Amsterdam’s historic center is a UNESCO World Heritage Site, thanks in part to the enduring strength of these wooden supports. Despite the passage of time and advances in construction technology, the wooden piles remain an essential component of Amsterdam’s infrastructure. They provide stability and support to buildings that would otherwise succumb to the city’s shifting ground and water levels. Moreover, they serve as a testament to the ingenuity and resilience of Amsterdam’s forebears.

In recent years, concerns have arisen about the preservation of Amsterdam’s wooden foundation. Factors such as groundwater levels, pollution, and urban development threaten the integrity of these ancient piles. Efforts are underway to monitor and maintain the health of Amsterdam’s subterranean wooden network, ensuring future generations can continue to marvel at the city’s architectural wonders. These humble supports allow Amsterdam to rise above its watery origins and stand as a testament to human ingenuity and perseverance.

The Hash Queen

"Mila Jansen"

Exploring the Legacy of Mila Jansen:

In the ever-evolving landscape of cannabis culture, certain pioneers stand out, shaping the industry with their innovation, passion, and dedication. Among them, Mila Jansen, affectionately known as the "Hash Queen," holds a unique place. Her journey from humble beginnings to becoming a trailblazer in hashish production has left an indelible mark on the cannabis community. We had the amazing opportunity of catching up with up with Mila and her daughter Miluz and are delighted to be able to share some insights into the life and inspiration of this dynamic mother and daughter team, and we shall take a look and share some excerpts from her latest book release - How I became the Hash Queen.

The Early Days:



Me, age 3, 1947

Mila Jansen, Born to Dutch parents In Liverpool, England on December 5th, 1944 (Towards the end of World War II) and named Mila after the doctor that brought her parents together. Was part of a travelling family due her fathers work for Shell. This saw them spending alot of time in many different parts of the world as her father travelled and was relocated as part of his contract. 1947 they flew to Indonesia. Her

parents had many artist friends that lived in Ubud, Bali. This was a time of amazing colours, collecting shells on beaches, exploring temples and was a very happy time in her parents lives.

In 1949 they returned to Holland on the Willem Ruys, a large and magnificent ocean liner with a swimming pool living in Scheveningen near The Hague for the next 2 years. Her sister, Christina who was known by the family as Tin, was born here.

In 1951 when Mila was 7 years old they moved to Loughton, Essex and lived in a beautiful big house near Epping Forrest. This was a wonderful family time filled with wonderful memories and now a typically English lifestyle which she liked very much. Time with nature, she really liked Oakland school that she attended with her sister and regularly visited London with her mother.

Church wasnt part of Milas family life. We did not go there, ever. Only at christmas would my mother read the story of the birth of baby Jesus. So I had to go to church secretly. The Roman Catholic church with the Latin singing and smell of incense was so mysterious. My mother explained her attitude towards church by saying, If you want to pray to God, you are better off going into the forest. You will have more chance of meeting Him there than in a building full of hypocrites. i have thought about these words all my life.

This very English childhood came to an end when her father retired and they moved to Blaricum, Holland in the summer of 1956 and she was 11. I spoke very bad dutch with a very heavy English accent and was teased because I had suddenly sprung a set of massive tits from nowhere. From being a bright student at the school in Harlow New Town, I was now the stupidest person in the class. i couldnt read or write dutch. The kids laughed any time I read a text out loud. I failed the first year of High School in Holland twice, so my parents sent me to a school only for girls.

At this school there would be many deman on my intelligence. But the Secondary Girls school Diploma would not get me into university. I had dreams of studying philosophy or astronomy, or going into the Indonesian jungles to restore temples.

Milas brother, Walraven or Wally, was born in September 1946. Wally was named after her mothers cousin, **Walraven Van Hall**. This cousin was infamous. as he had organised a huge robbery from the Bank of The Netherlands, which was under Nazi control at the time. Walrave Van Hall did not just rob the bank, but over a period of two and a half years he swapped fake promissory notes with real ones in the safe of the national bank. with permission from the Dutch government in London, which would cover whatever he needed.

He cashed a total of 83 million guilders to finance the resistance against nazi occupation, pay for the jewish families to go into hiding, and pay all the strikers families for years. He and his brother were bank directors. The brother became mayor of Amsterdam after the war. Walraven was ratted out and executed three months before Holland was liberated. In 2018, a feature film was made about his exploits, titled - **Bankier Van Het Verzet (Banker of the Resistance)**. It is an amazing movie. Be sure to check it out

Wally, me, and Christina,
Loughton, Essex, 1954



I now had a Saturday job at a garden nursery, which i liked a lot. I learned all the basics: seeding, weeding, and so on. i cloned thousands of Chrysanthemums, prepared trays for them, and learned to top the plants so that only four flowers bloomed. I learned many things that would come in handy later in life.

Exploring The Legacy of Mila Jansen - The Hash Queen

One afternoon, wally called Tin and into his room. He had been feeding butterflies for weeks, and now all the cocoons lay there on the windowsill. the sun was hot on the window ledge. Wait! Wait! He said. Sure enough, as we watched, one cocoon after another started to hatch. one by one the butterflies uncurled their wings, revealing brilliant colors in the sunlight. the wings would shudder and tremble and within a few minutes each peacock butterfly would fly off, still wavering a bit. we watched as they fluttered down into the sun-filled garden through the open window. it is one of those golden memories. Then, when Wally turned twelve, he was sent to school in Switzerland because of his bouts of Asthma and his allergy to our angora cats. Wally faded out of our childhood, returning only during holidays.

in 1959-60, we had ice for six weeks. I finally learned to skate reasonably well and completed the forty-kilometer Ankeveense tour, which covered many frozen lakes. It was magic, one of my best memories, with the crackling ice, all the bushes and trees covered with hoar frost, and the skaters with their red scarves flying. It was a beautiful way to experience my new country. By now the crying had finished and i felt finally at home here. During the summer holidays, we went on camping trips to Luxemburg and Austria. We would camp out on the edge of the woods and walk all day in the mountains, which my mother loved. We collected berries and mushrooms. my mother knew a great deal about mushrooms and was not afraid to say most of them were not poisonous. She warned us about various species and explained alot about nature to us, she loved mountains and travelled on her own for a few weeks every October - Mothers need holidays too she would say!. At the time I hated this, though now I agree with her fully, ha ha. Also when I think back i wasnt very helpful around the camp. I would read a lot and just start arguments with Tin and Wally for no reason. Basically, I was just a miserable teenager, making life gloomy for everybody around me.

Still for my sixteenth birthday i was given a moped, a Jawa, with high handlebars so i could slouch fashionably, my arms stretched out in front of me. I loved the speed, the wind in my hair, and luckily I never had any serious accidents. Music was a big influence and it was all Be-Bop, A-Lula and Rock around the clock tonight. I wore petticoats, lots of them, and cut myself a fringe. Rock n Roll was wild and exciting. A year later it was the Twist. It all sounds idyllic, and no doubt it was, but often my mood was not good. By this time, i had dropped out of ballet lessons, art classes, and piano lessons. Mostly due to what i would call dirty old men trying it on with me, including my piano teacher and our family portrait painter. So i stopped going to all these lessons and never sat for another portrait. Instead, i did crazy things like hitching a ride with a boyfriend from Rotterdam. The car was stolen so my mother would have to come and collect me from the jail the next day. My father knew nothing about this.

Six months later, in 1961, my mother became paralysed. She was just forty-four years old and suffered a massive stroke. This was the biggest impact we had ever had in our lives. Wally was in boarding school in switzerland, and Tin had just had her eleventh birthday. My father even blamed my behaviour as the cause. I tried to commit suicide. I became anorexic. I felt like i had become sick with life. The next few years were pretty tough. My mother needed care twenty-four hours a day. then she heard from her sister that there was a miracle cure for paralysis available somewhere in east Germany, so she decided to go. She was absent for a few years. It was a terrible situation but we had no choice but to accept it. I read alot. When asked, i refused to join the sweet sixteen girls choir, who sang on the radio every week. They wore pink twin sets. By then, i had taken to wearing black and deep purple, making my own clothes, knitting outsizesweaters, and sewing black lace on my umbrella. Hell seemed the more interesting place, where i would find philosophers and artists - heaven seemed insipid, with everyone wearing pink and white.

That year we had an amazing summer camping with my uncle in the Dordogne, France. So much so, that when he returned to Holland, I stayed behind with Suze Van Hall, the sister to my grandmother and mother to the infamous **Walraven Van Hall**. Suze, owned a farm and had many books on Eastern Philosophy. I spent long hours reading about Hinduism, Buddhism, and Theosophy, inbetween weeding sessions. She told amazing stories about my grandmother. My grandmother died young, being the first Dutch woman to ever die in a car accident. Her long scarf got caught in the cars wheel and it broke her neck. My mother was two at the time. I spent the last two weeks of this holiday hitchhiking around the south of France.

Now back at school, i was not motivated. My new boyfriend, Elbert, had just started his compulsory two-year military service, so the future looked bleak. I complained to my home economics teacher that I was nauseous in the mornings, and she suggested I might be pregnant. I was! What a shock! On a visit to my mother in east Germany, I told her about my situation. She looked at me and said, Well better this way than not at all and we hugged. In December i was five months pregnant and still at school. I hadnt told my father. Just after my 19th birthday he found out. His reaction was - I think you had better leave. i walked straight out of the door - without a coat, even though it was bitterly cold. Without a penny in my pocket, i walked to my best friend Anjas house to call my cousin lars, and then hitchhiked to his place. i couldnt stay there for long , but he did manage to arrange a room for me in Amsterdam - A very small room.

Elbert, my boyfriend, was in the army and could only come by once or twice a month. My rented room in Amsterdam was very small and the only warmth was from a little oil heater, which I also had to cook on. The winter of 1963-64 was exceptionally cold, so I cooked simple one-pot meals and sat, huddled in a blanket, waiting until dinner was done so I could get into bed. I had no money. I dont really know how I survived. Mbe my cousin

gave me something, or Elbert. There was no such thing as social benefits in those days. My landlady was worried I would have my baby in her spare room. So, within a couple of months, I had to move. With nowhere else to go, I moved to a home for unmarried mothers: Huize Annette. Coming from my protected childhood, moving there was a very big thing, not easy at all. there were about 12 girls with babies and perhaps eight who were pregnant. everyone had a small room of their own, with or without a baby cot. It was a horrid time. everybody was unhappy. No one was there out of choice.

Elbert came to huize Annette, but all visits were strictly supervised. Most of the time, we had to sit downstairs - with mothers, visitors, and babies - or go out. There was no privacy, and I have no idea how they expected us to maintain a normal relationship. Two or three times a week, I had to talk to a psychologist, who made quite sure that I was well aware that I had been horribly sinful and a very bad girl to get into the situation i was in. they went on and on about Girls like you, assuring me that You might as well realise no man will ever look at you again. Afetr all, you are a fallen woman. Your child will never be happy, not growing up in a normal family and you will have to work, work, work all your life to support your unfortunate child. Then it was back to scrubbing the kitchen floor, so you could get a real taste of what was waiting for you - for the rest of your life. What they really wanted was for us to give our babies up for adoption. There must have been a shortage of babies for adoption in those days. If you gave your baby away, at least you stood a chance of having a normal life. Just forget your baby, they said. i dont know how anybody could do that. There was an adoption room across from my room. We were not supposed to know it was there, and Im sure we were forbidden to go inside. But sometimes I would hear a baby cry for a long time behind the door, and once i snook in. To m utter shock, there were about 12 babies lying there, between a couple of months and well over a year old. These babiers lay in their cots the

whole day; I never saw any of these babies downstairs playing. They were strapped into their cots - no sitting, no crawling, no dadda or mamma. When i picked one up and cuddled it because it was crying and crying, it felt like a plastic doll. It did n ot react to human warmth at all. It just lay there, stiffly, crying in my arms. this was a profound shock that shook me to my core. i realised that these babies had no love, no cuddles, no hugs, no kisses, and probably just a bottle in their face five times a day and a clean nappy for dessert. Then it was straight back into their cots. I was determined that whatever happened in my life, my baby was never going to tun into a plastic doll. Somehow we would manage. There and then, I decided not to give my baby away for adoption. Never!

Late one afternoon my waters broke. So, the woman director walked me to the hospital - no taxi or ambulance rides for the likes of us. It was only a few blocks away, but it was a very uncomfortable walk. In the early hours of the orning of April 21, 1964. i had no problems delivering a wonderful, healthy six-pound baby girl. As i held her for the first time, all the adness and unhappiness of the past few months vanished. i thought my heart would burst. I cried, but this time for oyl! i was holding my beautifl, wonderful, precious baby girl in my arms: Miluschka Ilona.

I had no choice but to walk back to the home for unmarried mothers with the director. i didnt leave my room for the next 6 weeks, certainly no more than I had to. After she was born, i received 50 guilders from the Amsterdam City hall. Elbert visited two weekends a month. Later that year, he left the army and started studying medicine. We moved into a small apartment together. One day, he brought home some hashish in a matchbox and wanted me to smoke it so he could see my reaction.

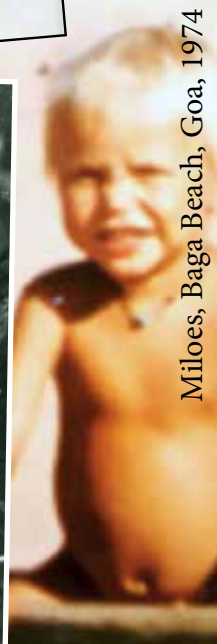
Perhaps this reaction later led to Milas breakthrough invention of The Pollinator - A revolutionary machine that streamlined the extraction process, and catapulted her to fame within the cannabis community and earned her the title of **"Hash Queen."**



* Miloes & me, Goa, 1968



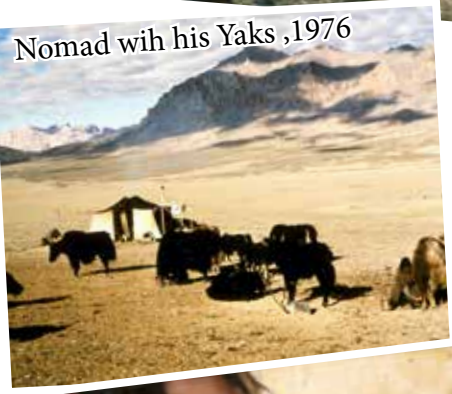
Miloes & me, Goa, 1969



Miloes, Baga Beach, Goa, 1974



Mila & her Nomad buddies, 1976



Nomad with his Yaks, 1976



Nomad with his altar in his yak hair tent, 1976



Baga Beach, Goa, 1974



Our 900km Trek in The Himalayas



Family Photo, Manali, 1975



You have just read a few extractions from the first Chapter Of Milas new book

Mila - How I became the Hash Queen



Visit Mila's Website

Beyond her contributions to cannabis culture, Mila Jansen has been a vocal advocate for legalization and responsible consumption. She has tirelessly campaigned for the destigmatization of cannabis and fought for the rights of patients to access medicinal marijuana. Her advocacy work has helped shape public perception and pave the way for progress in cannabis legislation worldwide.

As the cannabis industry continues to evolve, Mila Jansen's legacy remains as relevant as ever.

Her innovative spirit and unwavering commitment to quality serve as a guiding light for aspiring entrepreneurs and enthusiasts alike. Whether through her pioneering inventions or her advocacy efforts, the Hash Queen's impact on the world of cannabis is undeniable and enduring.

Mila's journey from Amsterdam to international acclaim is a testament to the power of passion, perseverance, and innovation. As the cannabis industry continues to grow and evolve, her legacy will continue to inspire and influence generations to come.

We were lucky enough to catch up with Mila and Miluz

Mila, hashish production has changed significantly since you first started. What are some of the biggest changes you've witnessed, and how do you see the future of hashish evolving?

Mila: *Until 1994 all the hash on the market was handmade, and it was made all the way from Turkey to China. People only smoked hash in all those countries, actually all along the ancient silk route. All along that route you would find good hash, it was the camel drivers that would smoke as they moved along, dropping seeds as they went.*

Miluz: *The first time we slowed down on our journey in 1968 was when we reached Manali. Living between the apple orchards and the tall, dark pines, we learned how to gently rub charas from the plants around us. This is the first time we made our own hashish. Now I film her playing with her inventions, extracting gold like some oldtime alchemist!*

The future? Depending on which way the world turns, the sky is the limit!

Mila, can you share some insights into your process of developing innovative hash-making techniques?

Mila: *The most important thing about making hash is the genetics. That will determine the quality, quantity, taste, smell and the high! The temperature is always important, keep in mind that when the trichomes are very cold they become hard as glass and will come off easily without sticking on the leaves again. So freeze the material first and use lots of ice if you're using water. Don't be greedy and try and get more, because everything you got more is what you didn't want, the small sticks that connect the trichomes, they contain no cannabinoids, and certainly you don't want fine bits of leaf in your hash, it should not look greenish at all. It should look like caviar under a microscope!*

Mila and Miluz, What drives your creativity in this field?

Mila: *So since the invention of the Pollinator in 1994 people are realizing that they can make hash themselves. And they do. A growing number of people are making hash. (Or medicine, oils, rosin or extracts. If you make any of these and use the whole plant you will get a very dark result. If you separate the trichomes first you will end up with a blond result.)*

Miluz: *Necessity is the mother of invention! A love of, and desire for, good hashish!*



Why did you want to invent methods to separate trichomes?

Mila: As far as I know all the active ingredients of the cannabis plant are in the trichomes, all the cannabinoids and terpenes. So in my mind it is healthier than smoking it together with a lot of dry green matter. But I'm no doctor. Or a scientist, and when I started to make hash the words cannabinoids and terpenes had not yet been invented, not in my world anyway. We only had two criteria, it's either good hash or bad. And we experimented endlessly with size of screen and temperatures. Speed of rotation of the drum, all these things were researched. We were aiming to get only the trichomes with absolutely no pollutants mixed in. (No little sticks, no flecks of green) Ideally it should look like caviar if you looked through the microscope. Just little balls. We had succeeded. We never considered doing anything more to such a perfect product. I still don't really understand why people turn a beautiful ice hash into a bowl of yellow or white goo. (Why???) And they are proud of it!

But whichever way people want to smoke, dab or vape it, I believe hash and it's derivatives rosin, fresh frozen etc are here to stay and have definitely been growing world wide. Look at the map we send our products to. It is interesting to see how the cannabis industry, especially the hash, rosin and extract making, has evolved and is continuing to evolve all the time. This gives me confidence that it will grow as a part of our future. Any industry that does not evolve is doomed.

Miluz, what was it like growing up with a mother who is considered a legend in the cannabis world?

Miluz: Keep in mind that Mila didn't enter the 'cannabis world' until I was almost thirty! Before that everything was more

underground. Growing up in India cannabis was always around, literally. When it is growing wild by the roadside the stigma seems less intense.

Miluz, how has your relationship with cannabis been influenced by your upbringing?

Miluz: I stayed underground when Mila started the Pollinator Company, I had a son and moved back out to India. My first notable contribution to this industry was entering social media on Mila's behalf 5 years ago. Having grown up with her I'm ideally suited for the job, no one knows as many of her stories as I do.

I have spent a lifetime preparing for the challenge of being Mila on Instagram.

Miluz, what are some of the most memorable moments you've shared with your mother in relation to cannabis and hashish?

Miluz: I have grown cannabis with Mila, I have made hashish with her, using a variety of techniques, we have shared smoke in some of the most amazing places in the world, we have even tried to create new genetics together!

Mila and Miluz, how do you see the future of cannabis evolving, especially considering the increasing legalization and normalization efforts around the world?

Mila: As for the future of cannabis, since I was 21 years old I've wished cannabis was legal or at least normalized, now I'm 79 and still waiting. When I see it, I'll believe it. When it is legalized it's surrounded by so many laws, needing so many licenses, etc. That it's not as much fun anymore, less risk maybe but less fun. Too much administration! Anyway, I keep on hoping. Will the world come to it's senses

and not leave the decisions about cannabis to ignorant people who have no knowledge about the plant.

Mila, as a female trailblazer in the cannabis industry, what challenges have you faced?

Mila: The biggest challenge in running Pollinator Company has been dealing with the taxman. Greedy buggers they are!!

Miluz: Mila was fortunate to come up with her own unique product, therefore she wasn't competing with or threatening any established companies. All she had to contend with were copycats!

Mila, can you share any experiences where being a woman has influenced your approach to hash-making or your interactions within the industry?

I think my whole business might not have existed if I had been a man. If I look at my inventions, the Pollinator, Ice-O-Lator and the Bubbleator I wonder if any man would have been inspired by a clothes dryer to create the first mechanized system to separate trichomes. And just because I was a tailor I thought of cloth when faced with the problem of hanging a screen horizontally in a bucket of water. And to think of a washing machine to make hash is not a male solution. But the washing machine was invented to clean your dirty socks and it's been designed too do a good job. Well, if you put buds or fine trim in the pyramid bag into the washing machine together with a load of ice, the machine sees the trichomes as dirt and is designed to get rid of the that. It does an excellent job fast. If you look at the end product under a microscope it looks like caviar, just little balls!! So I'd say it was a good thing that I was a woman and having had four children, I had learnt to think outside the box. Thinking of a new use for a daily object. Solving problems in unorthodox ways.

Mila, as a woman in the cannabis industry, what unique perspectives or contributions do you believe women bring to the table?

Mila: The future looks good for women in the cannabis industry. When I started with the Pollinator Company in 1994 I was not competing with any of the guys, equipment to make hash was a new thing. And all those guys selling seeds and lamps were young enough to be my sons. Ha! More and more women seem to be making their mark, either giving workshops, running clubs/dispensaries/coffeeshops, growing weed, making edibles. In a few weeks I'm going to the US And Canada to have some Dab-A-Doos and a workshop and all the events are organised by women! Women are on the whole good organisers, like I mentioned earlier the two Dab-A-doos I'm going to now are both run by women!! They take care of details, like good food!!!!

Mila, how do you think the cannabis industry can become more inclusive and supportive of women, both as consumers and professionals?

Mila: About more women in the cannabis industry as consumers or as entrepreneurs, any woman that does anything I always try and get them involved. And give confidence that yes, they should enter their hash to compete with others and a lot of our Dab-A-doo prizes go to women. They can make fantastic hash when they put their minds to it. And anything takes practice!!

"Dab-a-Doo" is a groundbreaking initiative dedicated to the most iconic cannabis extractions. Mila, as a pioneer in the cannabis industry, what role do you see "Dab-a-Doo" playing in elevating the European cannabis scene?

Mila: The first Dab-A-Doo I had in 2013 for my 69th birthday, it was going to be a one time affair

but people liked the idea so much the next one was in Barcelona four months later. A Dab-A-Doo is similar to other competitions except that the competition is for dry sift hash, ice hash, rosin and extracts. There are no weed categories. Another big difference is that where most cups will have a few celebrity judges while all the others wait for their decision, at a Dab-a-doo whoever buys a ticket will get a sample of all the entries and a voting form. At the last Dab-A-Doo we had 150 judges.

I think everyone knows which product they like best, you don't have to be an expert to know, or a celebrity.

Also, I have never asked anyone if they wanted to organize a Dab-A-Doo, always someone would ask if they can organise a Dab-A-Doo in their country. In South America we have the most Dab-A-doos, in north America we also had a lot in different locations, but in Europe only someone in Barcelona asked and we had one one time in Valencia. But as no one else asked for a Dab-A-Doo there are none in any other European countries. So it is not a question of trying to spread European hash culture.



Mila & Franco at Dabadoo

Mila: Traditionally hash was smoked from Turkey to China, it was all hand sifted. Not till the Pollinator came on the market in 1994 did people start making hash in Europe or the Americas. So one cannot speak of a European hash culture.

Mila, with "Dab-a-Doo" gaining recognition on an international

scale, how do you see it influencing the global cannabis landscape and shaping the future of extraction-focused events and competitions?

Mila: Techniques for making hash are not limited, maybe I started it with simple basic instructions but since then hash making has evolved and people make rosin and extracts. But I don't know much about modern extracting techniques, I'm not a scientist.

Mila, with "Dab-a-Doo" gaining recognition on an international scale, how do you see it influencing the global cannabis landscape and shaping the future of extraction-focused events and competitions?

Mila: Now after 10 years and 40 Dab-A-doos i see how popular they are and how over the years the quality of hash making has improved a lot. And this year there are three more coming in north America and six in south America!! I think what I like best of having Dab-A-Doos all over the world is that it helps bring together hashmakers from many countries to connect and become friends. I love watching and listening to all the animated conversations about new techniques, discussions about quality. Quite a lot of people visit or partake in different countries which brings lots of like-minded people together.

You might ask, why hash? Personally I believe hash might be healthier, not having to smoke a lot of dried leaf matter. But who am I to say, i don't think this has ever been researched. All i know I'm



feeling fine, cycling and walking every day, traveling the world at the age of 79. In case you are interested, I eat brown, bread, brown rice, brown sugar, organic vegetables, beans and some seaweed. Mostly, but mainly I trust my own body, if on a cold winters night I feel like a beef stew I will make it. I cook every day.

Mila, Miluz, "The Queen of Hashish" not only documents your experiences but also provides insights into the cultural and societal dynamics of cannabis production. How do you hope this book contributes to broader conversations about family, entrepreneurship, and cannabis advocacy?

Mila: *It took me eleven years to write my book. I don't think I had any thought about the impact it might ever have, but of course being a woman, their general problems get discussed. I would show women of any status the possibility of overcoming outdated opinions about women. Just by ignoring them helps, and then just going ahead doing your thing. From feedback I understand that the book did help quite some women make decisions about their lives and maybe reading the book gave them just that little extra push. Which is amazing for me as I did not write it to influence anyone. I just wrote what happened during my life and how to accept whatever comes and deal with it. If you really want anything done, you better be prepared to be the one doing it, as no one else will.*

Mila, Miluz, "The Queen of Hashish" seems to encapsulate a journey of self-discovery and resilience. Can you share how your experiences in India and the process of writing this book have empowered you both personally and professionally, and what message you hope readers take away from it?

Mila: *One experience in India,*

it happened that late '68-'69 I was totally broke for six months, no money in the pocket at all. You learn a lot from that, how proud you are, too proud to ask for help, to beg. And how well we fared, we never starved, always something would happen and food would be there. The hospitality of the Indian people was terrific! We travelled around by hitch hiking. Sitting on top of a truck was by far the best way to view India. In those days definitely! It was wonderful!

I just hope this book will help men and women to become more self-confident and prepared to sometimes take a risk to do what you dream of doing and being able to pull it off.

Mila, Miluz, as mother and daughter, your journey to India together must have been filled with unique experiences and challenges. How did this shared adventure shape your collaboration on "The Queen of Hashish," and what aspects of your trip do you believe resonate most strongly with readers?

Mila: *I am very proud of all four of my children. They all turned out fine people. Really! With Miluz I have a strong bond because of all our travels in the past and present. She accompanies me when I go travel through South America, she does all my social media, Instagram etc. I love all my children and of course my grand children, they are the most important beings in my life.*

Miluz: *Mila was a strong, independent single mother. As such she had already shattered many of the Establishment's gender roles and rules. She always told all four of us we could do whatever we set our minds to.*

Follow your dreams!

Funny to see how different our dreams!

Mila, "The Queen of Hashish" seems to offer readers a multi-dimensional view of your life, including your roles as a mother and entrepreneur. Can you discuss how your experiences in India informed your approach to balancing these different aspects of your identity, and how this is reflected in the book?

Mila: *When I decided to become an entrepreneur I was fifty years old and I had never run a business before. Had some hard knocks, had to learn everything about accounting and all the boring work that comes with running a business. And I lacked a crucial drive, I was not interested to get rich, if I have enough to pay for the basics I'm happy.*

Life is full of challenges and it's up to you how you deal with them. Know that you can do it!

Know that you are one with your family, your friends, all people, the world, the cosmos and beyond, we are one in our love.

Love you,

Mila & Miluz x

GERMANY LEGALISES

As the smoke clears in the debate over cannabis legalisation, Germany emerges as a new frontier for the 420 community. With a rich cultural history, renowned for its precision engineering and love for beer, Germany is now embracing a progressive stance on the recreational use of cannabis.

In a country where order and efficiency are prized virtues, the legalisation of cannabis represents a significant cultural shift. With the passing of the Cannabis Control Act, Germany has opened the doors to a new era of cannabis regulation and consumption. This landmark legislation not only decriminalises possession of small amounts of cannabis but also paves the way for licensed cultivation and distribution.

Germany partially legalises cannabis, allowing personal use and home cultivation. Regulated cannabis clubs will provide legal access, addressing 'drug tourism' concerns. The law aims to reduce health risks but faces opposition and criticism from medical associations and regional authorities. Germany will partially legalise cannabis from Monday 1st April 2024, implementing a flagship pledge of Chancellor Olaf Scholz's coalition government.

persistent stigma surrounding cannabis use are ongoing tasks for policymakers, business owners, and advocates alike.

Here is a run-down of the new rules:

From April 1, it will be legal to carry up to 25 grams of dried cannabis for personal use -- enough to roll around 80 joints, depending on how much is used.

Home cultivation will also be allowed, with a limit of up to three plants per adult and 50 grams of dried cannabis.

However, it will remain prohibited to smoke the drug within a 100-metre radius of schools, kindergartens, playgrounds and public sports facilities.

Smoking will also be banned in pedestrian zones between 7:00 am and 8:00 pm.

Cannabis clubs

From July 1, Germany is planning to set up regulated cannabis cultivation associations to enable people to obtain the drug legally.

These so-called cannabis clubs will have up to 500 members each and will be able to sell a maximum of 50 grams of dried cannabis per month to each member.

Adults under 21 will be limited to 30 grams of cannabis per month

containing no more than 10 percent of the psychoactive substance tetrahydrocannabinol (THC).

Meeting and consuming cannabis at the clubs will not be allowed and membership will be limited to one club at a time.

No tourists

The only legal way to obtain cannabis will be to either cultivate it at home or obtain it through the cannabis clubs, with both options limited to people who have been resident in Germany for at least six months. The restrictions are intended to allay fears from opposition parties, especially the conservative CDU-CSU alliance, that the new law could encourage "drug tourism".

The government of Scholz's Social Democrats, the Greens and the pro-business FDP had originally pledged to go further and allow cannabis to be sold in shops, a move that was slapped down by the EU.

A second law is now in the pipeline to trial the drug's sale in shops or pharmacies in certain regions.

The government insists the new law will reduce the health risks associated with cannabis because it will tackle the problem of contaminated substances on the black market.

But the law has been widely criticised by medical associations and health groups. It has also



led to complaints from regional authorities, charged with overseeing its implementation.

They fear they will be saddled with extra bureaucracy because they will have to reverse prison sentences and fines already imposed for offences that are no longer punishable under the new law.

Friedrich Merz, the leader of the opposition conservatives, has already warned that if his party were to return to power after the 2025 elections, it would “cancel the law immediately”.

Beyond the recreational side, the medical cannabis industry in Germany is also experiencing rapid growth. Patients suffering from chronic pain, epilepsy, and other conditions now have access to legal, high-quality cannabis products prescribed by licensed healthcare professionals.

However, the legalization of cannabis in Germany is not just about the right to get high; it's about social progress, personal freedom, and economic opportunity. As the 420 lifestyle gains mainstream acceptance, Germany stands at the forefront of a movement that seeks to redefine our relationship with this ancient plant.

So, for the moment let us join in the conversation, spark a joint, and raise a stein to the bright future of cannabis in the land of precision engineering and impeccable standards.



- The global legal marijuana market was valued at USD 13.2 billion in 2021.⁴
- The UK's medicinal cannabis industry is expected to be worth USD1.2 billion by 2024.¹⁵
- Medicinal cannabis has been legalised in the UK since 2018, but only for patients with rare illnesses.
- The UK is one of the world's biggest cultivators of medicinal cannabis, but it is exported to overseas markets. It imports 100% of its medicinal cannabis and CBD products prescribed and used domestically.

Since the legalisation of medical marijuana in 2018, doctors have received little guidance from the National Institute for Health and Care Excellence (NICE) and the National Health Service (NHS), so the impact of legislative changes has been limited in improving access for eligible people.

- To date, 100 percent of the medicinal cannabis products prescribed across the UK are imported.

This makes the UK an outlier in the global market, given the country is the world's largest exporter of medicinal cannabis.²¹ In 2019 alone, The UK produced 320 tonnes of legal cannabis accounting for 75 per cent of the global market (468.3 tonnes). These numbers indicate that perhaps economically, the country is benefiting from exporting its medicinal cannabis due to it meeting stringent global quality standards. However, it comes at the cost of a difficult domestic system where product shortages and the restrictive policy set by regulators mean

UK LEGALISATION

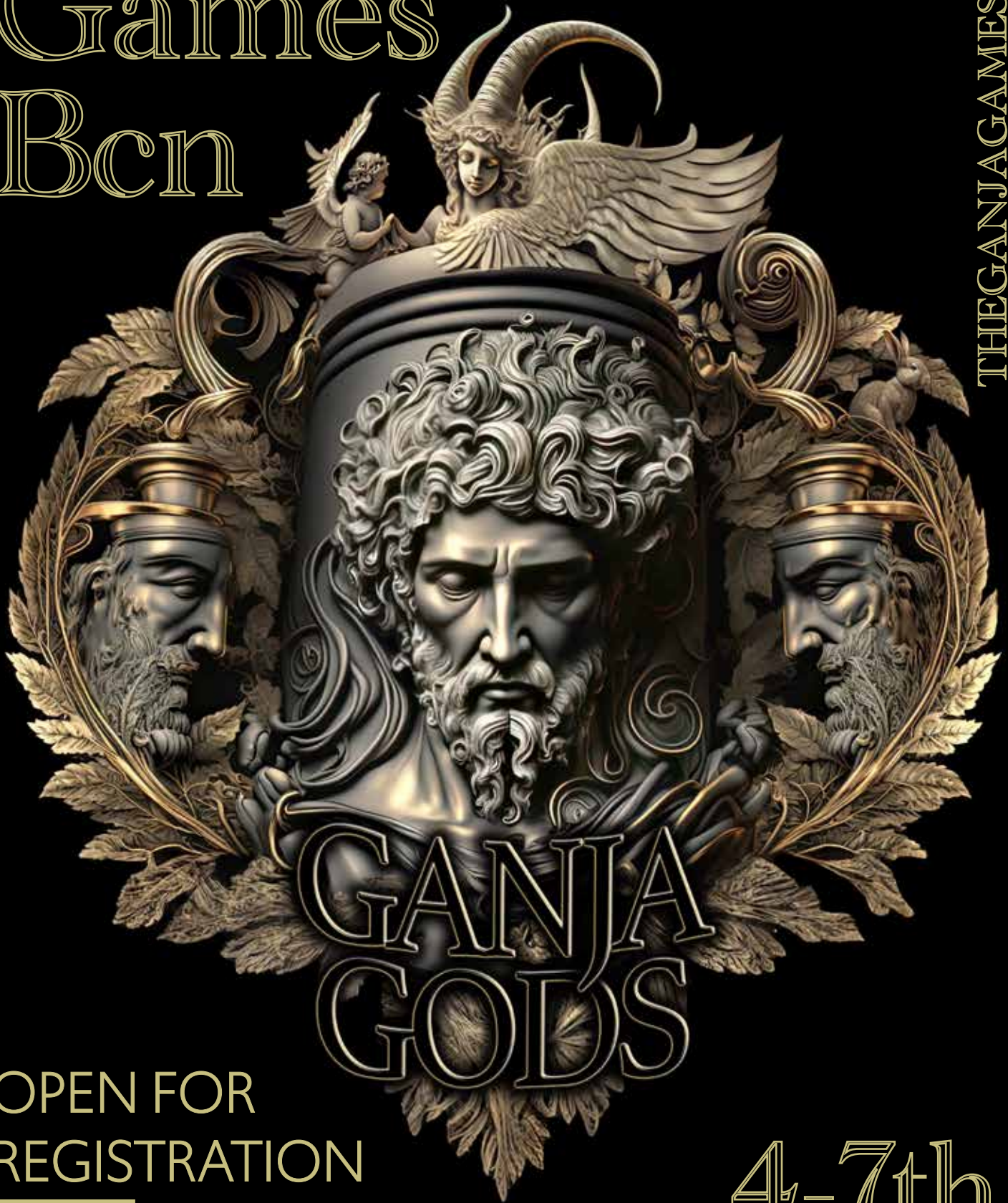
ON THE SUBJECT OF RECREATIONAL CANNABIS LEGISLATION, NOTHING HAS REALLY CHANGED IN THE LAST SEVERAL YEARS, SINCE A HOME OFFICE SPOKESPERSON SAID:

There is strong scientific and medical evidence that cannabis is a harmful drug which can harm people's mental and physical health and can damage communities. The Government is clear - we must prevent drug use in our communities and help those dependent on drugs to recover, while ensuring our drugs laws are enforced

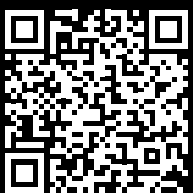
The Government has no intention of reviewing the classification of cannabis and it will remain a class B drug. Classification is completely separate to scheduling regulations. Any debate within government about the efficacy and therapeutic use of cannabis based medicines emphatically does not extend to any review regarding the classification of cannabis and the penalties for the illicit possession, cultivation and trafficking of cannabis will remain the same.

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FOR DETAILS





Conveniently located, just off of Avenida Diagonal in the trendy area of Les Corts, a visit to this hidden gem is an absolute must. My friend and I visited this club on the 6th which is coincidentally their Members Special Day.

WE GRABBED A SPOT OF LUNCH NEARBY AND HEADED TO THE CLUB

We were greeted by friendly staff and a luxurious, neon lit club with comfortable seating, beautiful artworks painted directly on the walls and some funky tunes playing. An elegant and stylish club that will make you feel welcome from the first moment. The variety and selection of products is very impressive and the Members Special Day is not to be missed.

SPECIAL PROMOTIONS ACROSS THE ENTIRE RANGE ON THE 6TH OF EACH MONTH

The club has a communal area with ample comfortable couches, DJ booth and snack machines. There are also a couple of booths if you require a little more privacy and one booth has a Playstation set up for the gamers.

The bar offers a range of beers, coffee, teas and various snacks. They were actually making candy floss on a fairground machine and giving it out to the members, which was pretty cool.

The club is equipped with a full selection of pipes and utensils to use with free papers, grinders etc. There is a selection of games and there was a couple playing chess whilst we were there.

The staff were very friendly and knowledgeable and showed us an amazing range of products.

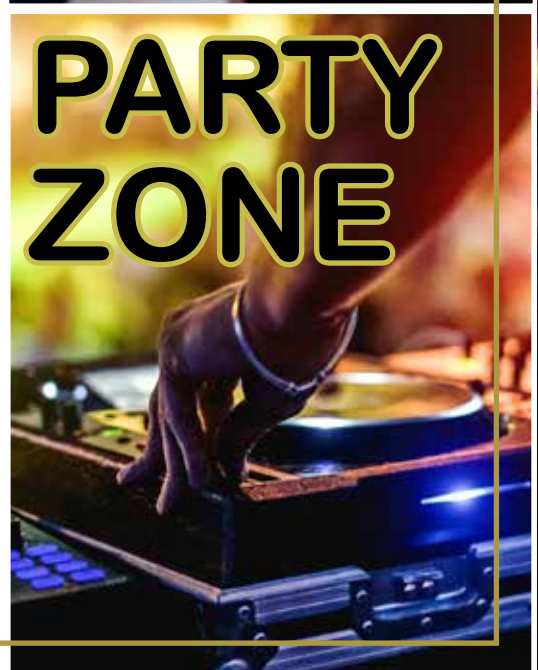
There was a private party kicking off which we were invited to attend and what a fantastic night we had.

I cannot stress enough that this is a fantastic club in a great location that is definitely worth a visit.

Thanks to the staff that made our experience such fun.



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THE FIRE



CA



CANNABIS EXTRACTS

DABBING

WHAT? WHY? HOW?

AN EXTRACTION IS A PROCESS THAT EXTRACTS THE REQUIRED CANNABIONIDS AND TERPENES FROM THE PLANT MATERIAL. RESULTING IN A PURE, TERPENE RICH, HIGHLY POTENT EXPERIENCE.

EXTRACTS ARE USUALLY SMOKED ON A DAB RIG, WHICH IS BASICALLY A WATER BONG WITH A SPECIFIC ATTACHMENT THAT ALLOWS THE HEATING AND THE DECARBOXYLATION OF THE EXTRACT. THEN COOLED BY BEING DRAWN THROUGH WATER BY INHALATION.

WELCOME TO THE DIVERSE WORLD OF CANNABIS EXTRACTS

BHO



Butane Hash Oil (BHO) is a potent cannabis concentrate made by extracting cannabinoids and terpenes from cured cannabis plant material using butane as a solvent. Simplified, the process involves packaging a tube with cannabis and passing butane that has been chilled with CO₂ through it to dissolve the cannabinoids and terpenes, resulting in a highly concentrated oil. After the extraction the remaining Butane is purged from the material to ensure safety.

BHO can vary in consistency, from a sticky wax to a glistening sugar wax to a brittle shatter. It is usually smoked in a dab rig, which is basically a glass bong with an attachment to smoke oil instead of flower or standard hashish, that usually contains plant material. Hash oil contains zero plant material and is just the active compounds and terpenes.

SHATTER



Shatter Hash is a cannabis concentrate renowned for its glass-like transparency and potency. It's extracted under the same process as BHO, using solvents such as Butane, CO₂ or absolute ethanol. The difference here, is the extract is winterised through a process of freezing to different low temperatures and then filtering out the waxes, fats and lipids from the extract whilst still mixed with the solvent. The solvent is then purged from the final extract. Due to the extraction of the waxes, fats, lipids and the terpenes during the purging process. The purity of this final brittle, translucent extract now allows it to set like sheets of golden glass.

The name Shatter derives from its tendency to break into sharp, glass-like fragments when handled, owing to its high cannabinoid content, purity and stability. It is prized for its intense potency and versatility.

WAX



Cannabis extracts like wax, budder, and honeycomb are all forms of concentrated cannabis, but they differ in texture and consistency due to their production processes:

Wax: A soft, opaque extract with a sticky, wax-like texture. It's created by whipping the cannabis extract during the purging process, which introduces air and alters the consistency.

Budder: Similar to wax but creamier and smoother, resembling butter. It is produced by purging the extract at higher temperatures while being whipped, creating a light, airy texture.

Honeycomb: Has a crumbly, honeycomb-like structure. This texture is achieved by vacuum purging the extract at lower temperatures, which retains a more brittle and porous consistency.

LIVE RESIN



Live resin is a high quality cannabis concentrate known for fresh from the field flavour and potency. Unlike traditional extractions of BHO, live resin is made from plants that freshly cut (no curing) and are then flash-frozen immediately upon cropping. The immediate freezing process preserves the plants complete terpene profile, resulting in a product with a more robust and flavorful taste and aroma compared to extracts made from dried cannabis. The extraction typically involves using solvents like butane, CO2 or sub-critical Absolute Ethanol. Co2 is a preferred method as Co2 will naturally dispell from the extraction, can be scaled much safer than a butane set-up and is deemed a non-solvent extraction.

Live Resin is favoured by cannabis enthusiasts for its complex, true to plant, fresh from the field taste and potent effects.

ROSIN



Rosin is a cannabis concentrate renowned for its purity and solventless extraction process (Note: Co2 and Absolute Ethanol extractions are also deemed solventless). Rosin is made by applying heat and pressure to cannabis flower, kief or hash.

The simple but effective process literally squeezes out the resinous oils containing cannabinoids and terpenes, producing a potent and flavourful extract. Rosin can vary in consistency, ranging from a sticky sap to a more solid form, depending on factors such as temperature and pressure during extraction.

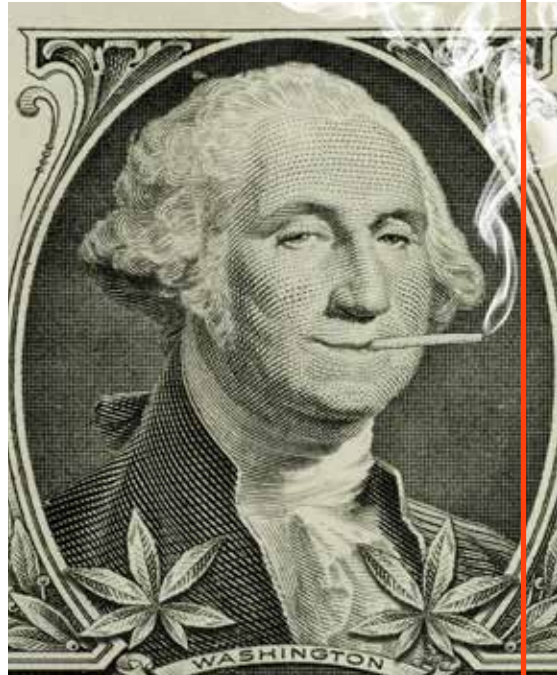
The main appeals of rosin are its purity as it uses no solvents for the extraction and its ease and low production cost compared to solvent extraction systems and solvent purging processes.

LIVE ROSIN



Live Rosin combines the incredible freshness of Live Resin with the purity guarantee of Rosin extraction methods. It is a premium cannabis extract that is made from fresh cannabis plants that are immediately flash-frozen immediately after harvest in the exact same flash freezing process described with Live Resin production. The frozen plant material is then processed as Rosin using heat and pressure to extract the active ingredients and the freshly frozen terpenes.

The gentle Rosin process maintains the integrity of the plants natural compounds, resulting in a concentrate with exceptional flavor and aroma. Live Rosin typically has a creamy, butter-like consistency and can vary in colour from light amber to golden white depending on strain and actual extraction techniques. Due to its high quality, purity and full-spectrum nature, Live Rosin is highly sought after by cannabis connoisseurs who appreciate its premium attributes and nuanced effects.



THE CALI CONNECTION

In the vibrant streets of Barcelona, amidst the bustling crowds and lively energy, there exists a tranquil haven tucked away from the chaos. A place where time slows down and the senses awaken. Welcome to Kush House, a small but perfectly formed, enchanting social club nestled in a quiet corner of the city, offering only California's finest botanical treasures.

THE AIR IS PERFUMED WITH THE INTOXICATING SCENT OF CALI FIRE

Step through the door of Kush House and you are immediately met by a friendly team that will make you feel welcome immediately.

The atmosphere is one of serenity and relaxation with an energetic vibe. Members come to unwind, socialise, and indulge in the spectacular offerings at Kush House.

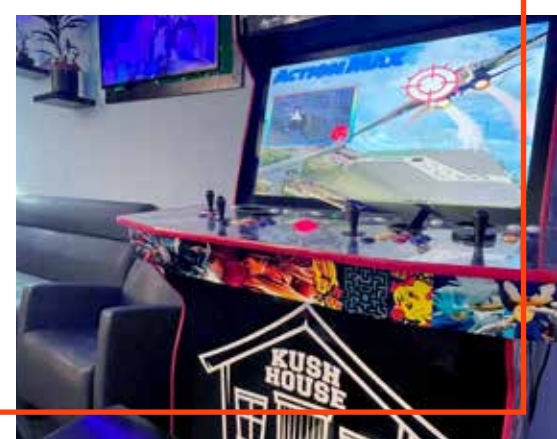
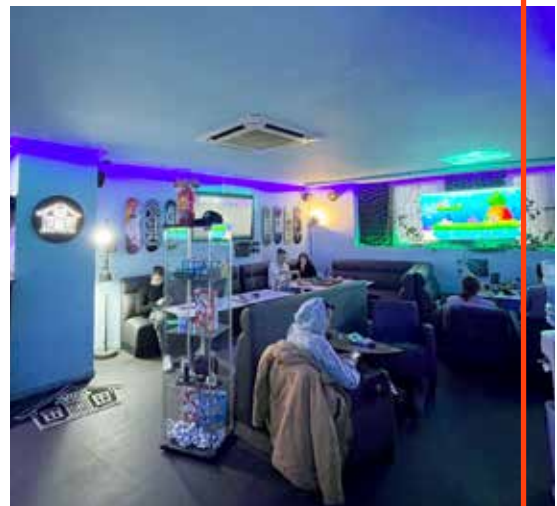
What sets Kush House apart from the rest is its exclusive ownership and partnership with California's renowned growers, ensuring that almost 100%

of its products are directly from the Golden State. From exotic hybrids to classic strains, Kush House boasts an unparalleled range on offer, each meticulously curated to delight the senses and elevate the experience of every member.

But Kush House is more than just a purveyor of botanical treasure: it is a true Cali connection, bridging the gap between Barcelona and the sun-drenched fields of California. Here, members immerse themselves in the rich culture and heritage of the West Coast, as they sample some of the finest strains and indulge in the laid-back vibes that define the Cali vibe.

Whether you are a connoisseur seeking the perfect strain or a newcomer eager to explore the Cali magic, Kush House welcomes you with open arms. The team are always on hand to offer guidance and recommendations, ensuring that every visit delivers on every front.

Be sure to check out Kush House, you will not be disappointed.



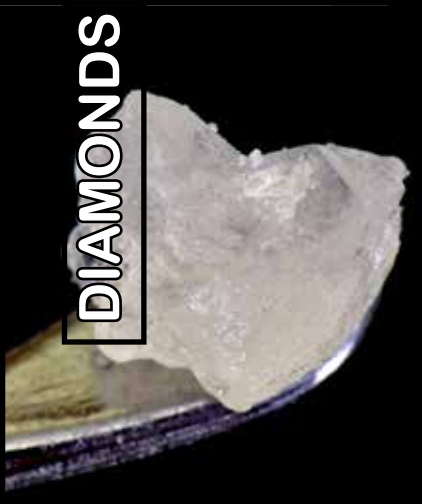
TERP SAUCE



Terp Sauce, also known as terpene sauce or just Sauce, is a highly aromatic and flavourful cannabis concentrate prized for its rich terpene profile. Terp Sauce gets its name from its thick, syrupy consistency as a terpene-rich resin. Following the usual extraction process a refinement process, often involving heat and vacuum pressure, is used to separate the terpenes from the cannabinoids. This separation allows the terpenes to be reintroduced into the final product. Terpene sauce is often poured over THCA diamonds to reintroduce flavour and the benefits of the entourage effect.

With its intense aroma, and potent effects, terp sauce offers a premium cannabis experience whether dabbed alone or to whichever product it is added to.

DIAMONDS



THCA Diamonds, also known as THCA crystalline or simply diamonds, are a highly potent and visually striking form of cannabis concentrate. These crystalline structures are composed almost entirely of THCA (TetraHydroCannabinolicAcid), the precursor to THC, and are renowned for their exceptionally high cannabinoid content, often exceeding 99% purity.

Following the initial extraction and isolation of cannabinoids and terpenes, the resulting extract is then subject to a series of refinement techniques, including filtration, precipitation, sub-critical temperatures and pressure to separate and purify the THCA molecules. During the process, THCA molecules naturally form into large, diamond-shaped structures. These crystals are then separated from the remaining solution and collected to create THCA diamonds. The final product is typically translucent or clear, with a crystalline appearance resembling actual diamonds.

DISTILLATE/LIQUID DIAMONDS



Cannabis Distillate is a concentrated cannabis extract known for its high potency and purity. The distillation process involves separating and refining cannabinoids, such as THC and CBD, from the raw cannabis extract, taken from the plant material. It is the most complex and expensive process within the extraction field and requires hard scientific knowledge. Due to this, distillate has been shunned a little by the industry. However, if done correctly distillate is second only in strength and purity to diamonds. The most stable and most versatile cannabis extract available.

Here's a breakdown of the distillation process. If the initial extraction is done with absolute Ethanol it is deemed a non-solvent extract. Distillate is the only extract that works with edibles due to it being decarboxylated from THCA to the fully psychoactivated THC.

- 1. Extraction:** Initially, cannabinoids are extracted from the cannabis plant using a solvent, often ethanol or CO₂. This step yields a crude oil rich in cannabinoids, terpenes, and other compounds.
- 2. Winterization:** The crude oil undergoes a winterization process to remove fats, lipids, and waxes. This step improves the purity and clarity of the final product.
- 3. Recovery:** The ethanol is now recovered using a mixture of heat and vacuum pressure in a Rotary evaporator. Leaving behind a sticky, crude oil containing a mixture of cannabinoids and terpenes.
- 4. Decarboxylation:** Next, the crude oil is heated to activate the cannabinoids through a process called decarboxylation. This step converts non-psychoactive cannabinoids (such as THCA and CBDA) into their psychoactive forms (THC and CBD).
- 5. Distillation:** The decarboxylated oil is then distilled using a specialized distillation apparatus. This process involves heating the oil to its boiling point and collecting the vapor in a condenser, where it is cooled and converted back into a liquid state.
- 6. Fractional Distillation:** Fractional distillation is often employed to further purify the cannabinoids and separate them from other compounds present in the oil. This allows for precise control over the cannabinoid profile of the final product.
- 7. Final Purification:** The distillate may undergo additional purification steps, such as chromatography or filtration, to remove any remaining impurities and achieve the desired level of purity.

The result is a highly concentrated and potent cannabis oil with a clear appearance, minimal flavor, and consistent cannabinoid content. That is the basis for many products including your edibles.

WIN AN EMPIRE GLASS RIG





Club 67 Ben



Nestled in the heart of bustling city, away from the neon glare and flashy facades, lies a hidden gem where time seems to stand still.

Club 67 for me is a real club. It does exactly what it says on the tin. The club welcomes patrons with the warm embrace of an English pub, transporting them to a bygone era of camaraderie and conviviality.

As you step through its unassuming door, the first thing that strikes you is the timeless charm that permeates every corner: the decor is understated yet elegant, with wooden furnishings and nicely lit, there is a casual, friendly atmosphere.

NO FLASHY GIMMICKS JUST GOOD OLD FASHIONED STYLE

Unlike many modern social clubs there are no flashy gimmicks or ostentatious displays here - just good old fashioned English Pub charm, good company and a real sense of belonging. Club 67 is a place you can sit and unwind and not be pumped full of gangsta rap music, that never stops playing.

Club 67 really has soul, there is a dartboard on the wall, like there is in any proper old english pub.

Club 67 is much more than just a place to throw darts; it is a sanctuary for those seeking refuge from the chaos of the city. Whether you are a regular or a first-time visitor, you are sure to be greeted with a warm smile and a friendly handshake.

It's a place where strangers become friends and friends become family.

In an age where trends come and go, Club 67 stands still in the name of tradition and community. Here, the simple pleasures of good conversation, and a well-thrown dart reign supreme. So if you are looking to escape the hustle and bustle of modern life and step back in time to a place where time moves a little slower, look no further than Club 67. After all, some things never go out of style.

They have an incredible range of products, the staff are super-cool and very friendly and will make you feel right at home. Be sure to check out this classic club, you will not be disappointed.

ON THE SIXTH OF EVERY MONTH THEY HAVE EXCLUSIVE MEMBERS DEALS



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**THE BEHEMOTH
BURGER**



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SPACED BCN

When i heard about the opportunity to put forward my favourite club for review, Spaced immediately jumped to mind. The club recently underwent a change of ownership, and i can confirm the new Cali Connection has taken an old favourite and brought it completely and totally into the present.

This club has a super cool vibe, Its decoration is out of this world, giving the feeling of being within a milky way or some magnificent celestial body. The subtle neon lighting adds to the whole interstellar effect. Add comfortable diner style seating and it is easy to see why Spaced is so highly regarded by its members. A social club in every sense of the word with a product selection fit for kings.

Through the week the club is pretty chilled and you will soon get to know the family of regular faces. The staff are energetic and dedicated to the field, ensuring professional and efficient service every step of the way.

This club has quickly become famous for its USA style, MEGA Pass- rounds. Where the biggest cones you have ever seen are passed around, like a tribal, unifying pipe of peace. It is so cool.

If its the family feel you are looking for then look no further than Spaced. It is very easy to meet people and make new friends in this club as the focus is 100% about community and inclusion.

Over the weekends the club gets busier and along with various themed events, guest DJs and planned events, they regularly get the pizzas in for the members and everybody has a really great time.

Spaced Social Club must have every single one of the latest and newest pipes and gadgetry available on the market, that you are welcome to use. Along with providing the usual free papers, grinders and rolling trays etc.

Spaced is a real smokers club that caters for the connoisseur market and carries an amazing selection of products and merchandise. The new Cali owners are of course delivering that genuine Cali fire and that USA influence feels really fresh and new. Cannot wait to see what the future holds for this place. Keep up the good work.

SCAN QR CODE FOR FURTHER DETAILS





When i am in the city with the family we are always pretty much focused around the famous Gothic Quarter as there are many beautiful things to do here. Also, as a medicinally registered cannabis user I do need top up my cannabinoids levels regular but i find the medicinal strains lack taste and potency.

EXOTIC HOUSE BCN IS THE MOST CONVENIENT LOCATION FOR ME

Just by La Rambla Catalunya off of the splendid Placa Real. Whenever i am in the city. Most times i will be with my family, so is usually short stay at the club for me. However, its a short stay i have been doing for many years now.

Whenever I am in the city this is my only guaranteed stop. It is a pleasure for me to share with you my feekings about Exotic House Bcn.

The club itself is quiet small but is perfectly formed. There is jungle style artwork painted on the walls, ambient lighting to add to the Exotic theme.

There is a large fish tank, snack machines, a console gaming table and several TV screens. I noticed there is also a very large selection of games, chess board, a small library of books.

THE TEAM THAT RUN THE CLUB ARE VERY PROFESSIONAL AND FRIENDLY AND ARE VERY WELL INFORMED AND GUIDE ME TO WHAT MIGHT WORK BEST FOR ME

The vibe here is very relaxed and friendly and you are made to feel very welcomed. The club is also fully air-conditioned, so is also ideal to take a break from the hot summer temperatures.

If you are looking for a no nonsense, members club in the heart of Gothic Barcelona. Look no further than Exotic House.



SCAN QR CODE FOR FURTHER DETAILS



420 PRODUCTS OF DISTINCTION



Bubbleator
THE ORIGINAL
Bubbleator





ALL THE COMFORTS OF HOME, AT HOME IS A SUPER CATLED HANGOUT THAT WOULD MAKE SNOOP DOG SMILE

First off, this club was easy to find, as it is just around the corner from the Arc de Triumph. There are plenty of amazing places to eat within a stones throw of this club and many amazing shops including one of my personal favourites Norma Comics. So this club is in a great location if you are at this side of town.

This club itself is an absolute joy. It's cosy, welcoming, and perfect for anyone who wants to kick back and get together with friends or to take a quick breather if you passing by. The decor is cosy, yet funky, giving off a super relaxed vibe and the music played there just adds to the charm.

There are comfortable leather sofas and tables and the club is reminiscent of sitting in a luxury lounge. There are original artworks on the wall from various artists, including global phenomenon - Saturno. There is a pool

table, lots of green foliage adorning the walls, which gives it a real nice natural green feeling. It has funky lighting and a product range that would make Snoop Dog smile. The place is super cool, spotlessly clean and gives off a great vibe.

I would highly recommend The Green Place Social Club to anybody looking for a new spot to relax. The club has female managers so the place is spotlessly clean, very well organised and is very popular with the ladies.

The atmosphere was second to none, we met some new people and had a really great, fun afternoon .

Alessandro Rossi, 35 yrs
(Translated from Italian)

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THE FIRE



CA





CALIBIS SOCIAL CLUB

A FULLY AIR-CONDITIONED, HIDDEN GEM SET AMONGST THE WINDING STREETS OF GOTHIC BARCELONA.

Set amongst the winding streets of Gothic Barcelona amidst some beautiful little cafes, art galleries and enroute to the beach. Great spot in a very convenient location.

From the moment you step inside, you can feel the chill vibes exuding from every corner. I was greeted with welcoming smiles from the staff members who made me feel comfortable and at home. The decor is funky and bright with cozy couches and colorful artwork adorning the walls.

I settled into one of the corners with a video game table, Barcelona were playing shortly so sure to be busy.

I rolled one up, sat back and soaked in the ambiance, which boasts warm lighting, comfortable seating arrangements and three little monkeys that promise to see no evil, hear no evil and speak no evil.

The selection and diversity of products is truly impressive and rivals any other social club in the area. From the fruity and floral to the strong and potent, there was something for everyone. I was particularly impressed with how informed the staff were about their products, making recommendations based on my preferences and tolerances.

I highly recommend checking out Calibis social club. A great range of products, showcased beautifully in their glass fronted counter. The overall atmosphere was modern, relaxed, and made for a great afternoon.

Thank you Team Calibis.

Reviewed by:
Alfonso Perez, 32
Barcelonian



Instagram



GOOD VIBES ONLY

The White Papers Part 2

Welcome to The White Papers, Part 2, dedicated to providing exclusive access to some of the the most fiercely guarded cultivation techniques used for flower and fruit production by professionals around the world. This time we are going to take it back to basics and breakdown the exact elements you need to be thinking about, and the tools you need to set up correctly, so you can maximise your production. Fully utilise your time and efforts and avoid some of the early pit-falls that beginners will face.

We will also discuss in detail, the three main components of your plants nutritional needs; Nitrogen, Potassium and Phosphorous and explain the true importance these elements bring to your plants. We also take another look at Kelp, An absolute powerhouse of nutrition for your plants.

The White Wabbit shares with you his full grow-room parameters, covering all you need to produce prize winning produce, like a true pro.

TECHNICAL GUIDANCE DOCUMENT NO. 1

THE MINIMUM REQUIREMENTS FOR SUCCESS.

1. THE PRO-GROW BASICS
2. PLANT NUTRITION BREAKDOWN

The Main 3:

Nitrogen
Potassium
Phosphorous

The Powerhouse
Super Kelp

3. PROFESSIONAL GROW PARAMETERS

Prepared for: 420 Lifestyle Magazine
Prepared by: The White Wabbit.
The Minimum Requirements for Success.



PRO-GROW BASICS

IT BEGINS WITH THE GENETICS

F1 STRAINS

Filial 1

The term “F1” stands for “Filial 1”, which describes the first generation of progeny between two distinct inbred lines (IBLs). Unlike traditional cannabis strains, which tend to generate multiple phenotypes, F1 hybrids provide a consistent, reliable, and stable crop.

Are F1 seeds better than F2?

To illustrate, experts feel “once you get past F1, it becomes really advanced breeding. F2’s can be a big mess if they aren’t done right.” F1 hemp seeds are better than F2s because they offer more predictable crops. Even more, studies have proven that F1 cross genetics grow more vigorously than more F2 strains.

What does F1 F2 F3 seeds mean?

For crosses you have parents (P) and offspring (Filial generations) F1 = children of parents, F2 = grandchildren, F3 = great grandchildren, etc.

How do I know if my seeds are F1?

Eventually, every time the seed is sown the same identical plants will appear. When they do, this is known as a ‘pure line’. If the breeder now takes the pure line of each of the two plants he originally selected and cross pollinates the two by hand the result is known as an F1 hybrid.

Creating pure lines for an F1 hybrid can take as much as 7 or 8 years! After horticulturists establish two pure lines and cross-pollinate them, the female plants will bear F1 hybrid seeds/plants.

PLANT NUTRITION

FOLLOW A FEED PROGRAMME

This will appear as very silly advice to most, as what else would you possibly do? However, i have personally witnessed people buying random products based purely upon nice graphics on a bottle they spotted whilst visiting the local growshop. Then feeding to their plants at complete random times. Following no feed programme whatsoever. I know right! Complete and utter lunacy.

Manufacturers provide full feeding schedules to accompany their products for two reasons;

- a) To make your job easy and
- b) So you can achieve the best possible results from their products.

These feeding schedules are devised following extensive research and development and perfected over many many years.



If followed correctly, they will give you the best possible results achievable.

BEGINNER AND EXPERT FEEDING SCHEDULES

Less experienced gardeners should opt for a premixed 1 part grow and 1 part bloom or 2 part A + B grow and a 2 part A + B bloom formula, with a couple of specific boosts such as a pk boosts during early flowering etc. This will make your job easy and give you optimal results with small possibility for error.

Professional and more experienced growers will usually opt to mix their own formulas by mixing individual isolated elements. This allows a more precision feed programme that can be altered immediately depending upon specific requirements of your plants nutritional requirements and physical usage.

SOIL

Soil is a traditional growing medium that is readily available and familiar for many growers. It provides a natural habitat for beneficial microorganisms that aid in nutrient uptake and plant health. Soil also tends to buffer PH and nutrient fluctuations, providing a more forgiving environment for the novice growers.

Soil can be prone to pests, diseases, and inconsistencies in nutrient availability. It requires careful attention to watering and nutrient management to prevent overwatering or nutrient imbalances. Soil also tends to have slower nutrient uptake compared to hydroponic systems.

CLAY BALLS (Hydroton)

Clay Balls, also known as Hydroton or expanded pellets, provide excellent aeration and drainage for plant roots. They are inert and PH neutral, making them suitable for hydroponic

systems. Clay Balls promote healthy root growth and reduce the risk of overwatering by allowing excess water to drain away

Clay Balls can be heavy and expensive compared to soil. They require periodic flushing to prevent salt build up and may need replacing or cleaning between grows to maintain optimal performance.

ROCKWOOL HYDRO SYSTEMS

Rockwool is a preferred grow medium for cannabis due to its excellent water retention and aeration, which promote healthy root development. It's sterile and inert, preventing pest and pathogen issues and maintaining stable nutrient and pH levels. Rockwool is also reusable and sustainable, offering environmental benefits. Its consistency and uniformity ensure predictable growing conditions, making it an ideal choice for reliable cannabis cultivation.

REVERSE OSMOSIS



Reverse osmosis water, hailed as the “new elixir” for cannabis cultivation, has emerged as a game-changer in the quest for purity, consistency, and unparalleled quality. Harnessing the power of advanced filtration technology, reverse osmosis (RO) systems meticulously purify water by removing impurities, contaminants, and dissolved solids at the molecular level, leaving behind a pristine and mineral-free solution.

In the realm of cannabis cultivation, RO water has swiftly risen to prominence, revolutionizing the way growers nurture their prized plants. By providing a clean and neutral foundation, RO water serves as the ideal canvas for precise nutrient management, allowing growers to tailor their feeding regimens with unparalleled accuracy. This precise control not only optimizes plant health and vitality but also minimizes the risk of nutrient imbalances, ensuring consistent and predictable growth from seed to harvest.

Moreover, the purity of RO water offers additional benefits beyond nutrient management. With its absence of minerals and impurities, **RO water minimizes the risk of clogged irrigation systems, scale buildup on equipment, and nutrient lockout in the growing medium,**

providing a hassle-free and low-maintenance solution for cultivators. Additionally, the lack of contaminants in **RO water reduces the likelihood of introducing pathogens or pollutants into the growing environment, promoting a clean and healthy ecosystem for cannabis cultivation.**

Furthermore, **the exceptional purity of RO water lends itself to enhanced flavor and aroma profiles** in cannabis plants, allowing the full spectrum of terpenes and cannabinoids to shine without interference from mineral residues or contaminants. Whether cultivating for medicinal or recreational purposes, **the use of RO water ensures that each bud is imbued with the pure essence of the plant, delivering an unparalleled sensory experience for discerning consumers.**

In the ever-evolving landscape of cannabis cultivation, RO water stands as a testament to innovation and progress, offering growers a transformative tool to elevate their craft to new heights of excellence. With its ability to unlock the full potential of the cannabis plant while promoting sustainability and purity, RO water has rightfully earned its place as the “it” solution for cultivators seeking the ultimate in quality, consistency, and excellence.

CLIMATE CONTROL



Climate control is paramount when cultivating cannabis, as the plant’s growth, health, and overall yield are profoundly influenced by environmental factors such as temperature, humidity, light, and airflow. Achieving optimal climate conditions ensures that cannabis plants thrive throughout all stages of growth, from seedling to harvest, maximizing their potential for robust development and high-quality yields.

Temperature: Cannabis plants thrive within a specific temperature range, typically between **70°F to 85°F (21°C to 29°C) during the vegetative stage and slightly cooler temperatures of 65°F to 80°F (18°C to 27°C)** during flowering. Maintaining stable temperatures within these ranges promotes efficient photosynthesis, enzymatic activity, nutrient uptake, and metabolic processes essential for healthy growth and development.

Humidity: Proper humidity levels are crucial for cannabis cultivation, with different requirements during various stages of growth.

During the vegetative stage, relative humidity should ideally range between 40% to 60%, while lower humidity levels of 40% to 50% are preferred during flowering to prevent issues such as mold, mildew, and bud rot.

Controlling humidity levels helps minimize the risk of pests and diseases while optimizing plant transpiration and nutrient absorption.

Light: Light is the primary source of energy for cannabis plants, driving photosynthesis and influencing growth patterns, flowering, and cannabinoid production. Providing the appropriate intensity, duration, and spectrum of light is essential for maximizing plant health and yield. In indoor cultivation, high-quality grow lights, such as LEDs or high-pressure sodium (HPS) lamps, are used to mimic natural sunlight and provide consistent illumination throughout the plant's life cycle.

Airflow: Adequate airflow within the growing environment is essential for promoting healthy air exchange, preventing heat buildup, and minimizing the risk of pests and diseases. Proper ventilation helps maintain optimal temperature and humidity levels, prevents stagnant air pockets, and strengthens plant stems and branches through gentle movement. Fans, exhaust systems, and intake vents are commonly used to ensure sufficient air circulation and exchange.

CO2 Enrichment: Supplemental CO2 enrichment can enhance photosynthetic rates and boost plant growth and productivity, especially in indoor or sealed environments where CO2 levels may be limited. By increasing CO2 concentrations to levels above ambient atmospheric levels (usually between 800 to 1200 ppm), growers can optimize plant growth, accelerate flowering, and increase yields when combined with optimal climate control and lighting.

Meticulous climate control is essential for successful cannabis cultivation, as it directly impacts plant physiology, metabolism, and overall performance. By providing stable temperatures, appropriate humidity levels, optimal lighting conditions, adequate airflow, and, when necessary, supplemental CO2 enrichment, growers can create an environment conducive to vigorous growth, robust flowering, and the production of high-quality cannabis flowers rich in cannabinoids and terpenes.

PPM and EC

PPM stands for parts per millionth and refers to the concentration of nutrients in a nutrient solution.

This measurement is used to gauge the strength of the nutrient solution, indicating how many parts of a particular substance are present per million parts of water.

The correct concentration of nutrients in the solution is crucial for ensuring optimal growth and development of the plants throughout its entire growth process.

To measure the concentration of nutrients in the solution, growers use a ppm meter, also known as an:

EC meter. This device measures the electrical conductivity of the nutrient solution, which correlates with the concentration of dissolved salts, including nutrients.

By monitoring and adjusting ppm levels of the nutrient solution, growers can ensure their plants receive appropriate amounts of nutrients for healthy growth and optimal yields.

It ensures that plants receive the correct nutrient concentrations, adapts to different growth stages, and maintains overall plant health.

By regularly monitoring and adjusting these parameters, growers can optimize plant growth, prevent nutrient-related issues, and achieve higher yields and quality in their cannabis crops.

Also, prevent over-fertilisation that will lead to nutrient toxicity and plant stress, or under fertilisation, which will lead to nutrient deficiencies and stunted growth.

Managing PPM and EC is vital for successful cannabis cultivation.



Lighting

Lighting is a fundamental aspect of cannabis cultivation, directly affecting plant growth, development, and yield.

One key metric in assessing the adequacy of lighting for a grow room is lumens, which measure the total amount of visible light emitted by a source. Properly calculating the required lumens ensures that cannabis plants receive sufficient light to thrive, optimizing photosynthesis and overall health. This article outlines a step-by-step approach to determining the appropriate lumen output for a cannabis grow room.

Lumens quantify the brightness of a light source as perceived by the human eye. For cannabis cultivation, the goal is to provide enough lumens to support the photosynthetic needs of the plants, ensuring robust growth during both the vegetative and flowering stages.

Steps to Calculate the Required Lumens

1. Determine the Grow Room Size:

- Measure the length and width of the grow room to calculate the area in square feet (sq. ft.).
- Example: For a grow room that is 10 feet long and 10 feet wide, the area is 10ft x 10ft = 100 sq ft

2. Establish the Desired Light Intensity:

- Cannabis plants typically require different light intensities at various growth stages, measured in lumens per square foot (lm/sq. ft.).
- Vegetative Stage: Approximately 2,500 to 5,000 lm/sq. ft.
- Flowering Stage: Approximately 5,000 to 10,000 lm/sq. ft.

3. Calculate the Total Required Lumens:

- Multiply the area of the grow room by the desired lumen intensity for the specific growth stage.

Vegetative Stage Calculation:

- For the lower end:
 $100 \text{ sq. ft} \times 2,500 \text{ lm/sq. ft}$
- For the higher end:
 $100 \text{ sq. ft} \times 5,000 \text{ lm/sq. ft}$

Flowering Stage Calculation:

- For the lower end:
 $100 \text{ sq. ft} \times 5,000 \text{ lm/sq. ft}$
- For the higher end:
 $100 \text{ sq. ft} \times 10,000 \text{ lm/sq. ft}$

4. Select the Appropriate Lighting:

- Choose grow lights that collectively meet the total lumen requirement. Common types of grow lights include LED, High-Intensity Discharge (HID), and Compact Fluorescent Lights (CFL).
- Example: If an LED grow light provides 30,000 lumens, for the vegetative stage requiring 250,000 lumens, you would need approximately

250,000 lumens divided by 30,000 Lumens per light = 8.33 lights.
Which means at least 9 such LED lights.

5. Adjust for Efficiency and Coverage:

- Factor in the light coverage and efficiency. Lights should be evenly distributed to avoid hotspots and ensure uniform light distribution.
- Some LED lights have reflectors or lenses that enhance light spread and efficiency, potentially reducing the number of lights needed.
- Light Distance: Maintain appropriate distances between the lights and the plant canopy to prevent light burn and ensure optimal light penetration.



pH

pH, or "potential of Hydrogen," is a measure of the acidity or alkalinity of a solution on a scale from 0 to 14, with 7 being neutral. Solutions with a pH below 7 are acidic, while those above 7 are alkaline. PH plays a critical role in cannabis cultivation because it directly affects nutrient availability, plant health, and overall growth.

Here's why monitoring and maintaining the correct pH are essential when growing cannabis:

1. Nutrient Uptake: The pH of the growing medium directly impacts the availability of essential nutrients to cannabis plants. Different nutrients have varying levels of solubility at different pH levels. For instance, in soil, many nutrients are most available to plants when the pH is slightly acidic (around 6.0 to 6.5). If the pH drifts too high or too low, certain nutrients may become less available for uptake, leading to deficiencies even if they are present in the soil or nutrient solution.

2. Optimal Growth: Cannabis plants thrive within a specific pH range, typically between 5.5 and 6.5 in soil and 5.5 to 6.0 in hydroponic systems.

Within this range, plants can efficiently absorb nutrients, maintain proper metabolic functions, and achieve optimal growth rates. Deviations from this range can result in stunted growth, nutrient imbalances, and other physiological disorders that compromise plant health and productivity.

3. Prevention of Toxicity: In addition to nutrient deficiencies, improper pH levels can also lead to nutrient toxicities. When the pH is too low (acidic) or too high (alkaline), certain nutrients may become excessively available, leading to toxicity symptoms such as leaf burn, nutrient lockout, or reduced root function. Monitoring pH allows growers to prevent these issues by maintaining a balanced nutrient solution or soil environment.

4. Microbial Activity: pH influences the activity of beneficial microorganisms in the soil or root zone. Many beneficial microbes, such as mycorrhizal fungi and nitrogen-fixing bacteria, thrive in slightly acidic conditions. Maintaining the correct pH range promotes a healthy soil microbiome, which can enhance nutrient cycling, disease resistance, and overall plant vigor.

5. Environmental Stability: Fluctuations in pH can occur due to various factors, including changes in watering frequency, nutrient application, and microbial activity. Monitoring pH levels regularly helps growers identify and address fluctuations promptly, maintaining environmental stability and minimizing stress on cannabis plants.

Monitoring and maintaining the correct pH are crucial aspects of successful cannabis cultivation. By ensuring that the growing medium or nutrient solution remains within the optimal pH range, growers can maximize nutrient availability, promote healthy growth, prevent nutrient imbalances or toxicities, support beneficial microbial activity, and optimize overall plant health and productivity.



Cannabis cultivation is a science as much as it is an art, demanding precise control over various environmental factors to achieve optimal growth and yield. One critical but often overlooked aspect is the temperature of the nutrient solution used in hydroponic and soil-based systems. The temperature of the nutrient solution plays a crucial role in nutrient absorption, root health, and overall plant vitality. Understanding the ideal temperature range and the issues associated with temperatures that are too high or too low is essential for any serious cannabis grower.

For cannabis plants, the ideal temperature for nutrient solutions typically ranges between 65°F to 70°F (18°C to 21°C). This range ensures optimal nutrient uptake and promotes a healthy root environment. Maintaining this temperature helps create a balance where nutrients are readily available and can be absorbed efficiently by the plant roots.

Problems with High Temperatures
When the temperature of the nutrient solution exceeds the optimal range, several issues can arise that negatively impact plant health and growth:

1. Reduced Oxygen Levels: Higher temperatures reduce the dissolved

oxygen levels in the water. Oxygen is vital for root respiration and nutrient uptake. Low oxygen levels can lead to root suffocation, decreased nutrient absorption, and slower growth rates.

2. Increased Risk of Pathogens: Warm nutrient solutions create a favorable environment for pathogens like Pythium (root rot) and other harmful microorganisms. These pathogens can devastate the root system, leading to poor plant health and even death if not controlled.

3. Nutrient Imbalance: High temperatures can alter the chemical composition of the nutrient solution, leading to imbalances. Some nutrients may precipitate out of the solution or become less available, causing deficiencies or toxicities.

Problems with Low Temperatures:

Conversely, nutrient solutions that are too cold also pose significant challenges:

1. Slowed Metabolism and Growth: Cold temperatures can slow down the plant's metabolic processes, leading to reduced growth rates. Cannabis plants rely on an optimal temperature range to maintain efficient cellular functions and enzymatic activities.

2. Nutrient Lockout: At lower temperatures the viscosity of the nutrient solution increases, which can hinder the movement and uptake of essential nutrients. This can result in nutrient lockout, where the plant roots are unable to absorb the nutrients they need, leading to deficiencies.

3. Root Shock: Sudden exposure to cold nutrient solutions can shock the root system, causing stress to the plants. This stress can manifest in various ways, including wilting, discoloration, and overall reduced vigor.

By maintaining the nutrient solution within the optimal range of 65°F to 70°F, growers can ensure their plants receive the best possible care.

Understanding and managing the impacts of temperature extremes can help prevent common issues such as reduced oxygen levels, pathogen proliferation, slowed metabolism, and nutrient lockout. With careful attention to nutrient temperature, you will achieve healthier plants and higher yields.



Carbon dioxide (CO₂) plays a vital role in the life cycle of plants, serving as a fundamental building block for photosynthesis, the process by which plants convert light energy into chemical energy to fuel growth and development. As plants evolved over millions of years, the level of CO₂ in the atmosphere fluctuated, influencing adaptation and diversification. **During the early stages of plant evolution, approximately 400 to 500 million years ago, the Earth's atmosphere contained significantly higher levels of CO₂ (1500 - 3000ppm), compared to present-day levels (365 - 421ppm).** This elevated CO₂ concentration provided a rich and abundant source of carbon for photosynthesis, driving the proliferation and diversification of plant life across terrestrial landscapes. In this CO₂-rich environment, plants thrived, evolving in shapes, sizes, and adaptations to exploit available resources and maximize photosynthetic efficiency.

As plants continued to evolve and diversify, atmospheric CO₂ levels fluctuated due to geological processes, climatic shifts, and the emergence of photosynthetic organisms, such as cyanobacteria and algae.

These fluctuations shaped the trajectory of plant evolution, influencing factors such as growth rates, water use efficiency, and reproductive strategies.

Today, while CO₂ levels have fluctuated over geological time scales, they remain relatively stable within the range of 200 to 400 parts per millionth (ppm) in the Earth's atmosphere. Despite this lower concentration compared to earlier periods in Earth's history, CO₂ remains essential for plant growth and vitality. During photosynthesis, plants absorb CO₂ from the atmosphere through tiny pores called stomata, using it to synthesize carbohydrates and other organic compounds essential for growth, energy storage, and reproduction.

In modern agriculture and horticulture, CO₂ supplementation is often employed to enhance plant growth and productivity, especially in indoor or controlled environments where atmospheric CO₂ levels may be limited. By increasing CO₂ concentrations to levels above ambient atmospheric levels (usually between 800 to 1200 ppm), growers can accelerate photosynthesis, boost biomass production, and improve crop yield and quality.

CO₂ is a critical factor in the evolution and success of plant life on Earth. From the early stages of plant evolution to modern agriculture, CO₂ has shaped the development and adaptation of plant species, influencing their growth, physiology, and ecological interactions.

WHITE WABBIT TIP: Avoid bottled Co₂ if possible. Create Atmospheric Co₂ by burning Propane. Use a water cooled Co₂ generator for indoor grows, as the heat generated will be too much to handle.

Consistant, stable CO₂ enrichment can only be achieved in a closed loop grow system. Extraction systems close-off the extraction and allow plants to bathe for a set time frame each hour. However, stable, constant enrichment during the entire light period is the ultimate achievement.



WABBIT CO₂ TIPS

CO₂ WARNING: DO NOT SPEND LENGTHY AMOUNTS OF TIME IN AREAS OF 1500 PPM CARBON DIOXIDE CONCENTRATION. IT WILL REPLACE THE OXYGEN IN YOUR BLOOD AND GIVE YOU PANIC ATTACKS, AS YOUR BODY REACTS TO LACK OF OXYGEN. IF YOU CONTINUES, YOU WILL SUFFOCATE AND DIE.

YOU WILL THINK YOU ARE LOSING YOUR MIND. IT WILL LEAVE YOU WITH A HEIGHTENED PANIC RESPONSE AND IT WILL TAKE YOU ROUGHLY TEN YEARS TO GET OVER IT.

SMALL AMOUNTS OF TIME ARE FINE BUT FOR ANY SERIOUS WORK, YOU MUST TURN OFF THE ENRICHMENT AND EITHER; LET THE PLANTS DEplete THE CO₂ LEVELS BEFORE ENTERING. CLEAR THE CO₂ BY MEANS OF EXTRACTION, OR, WEAR BREATHING APPARATUS.

INSECT PROBLEM?

SET YOUR CO₂ LEVEL TO 3000 PPM FOR 2 HOURS

PROBLEM SOLVED!

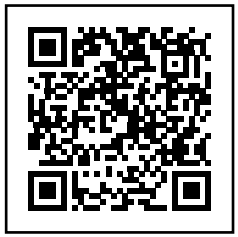


PROFESSIONAL GROW ROOM PARAMETERS



WABBIT GROW
TIP

ACCESS
THE
FULL
WHITE
PAPERS.
SCAN
THE QR
CODE



Hydro	PPM	EC	PH	Humidity	Room temp'	Root Temp'	Nutrient Temperature	Co2 PPM
mothers	350-400	0.7 - 0.8	5.8 - 6.3	50%	DAY: 70 f NIGHT: 61 f	68 F	18 - 21 c (65 - 70 f)	800 ppm
Cuttings	350-400	0.7 - 0.8	5.8 - 6.3	90 - 98%	D: 68 - 75 f N: 68 - 75 f	68 F	18 - 21 c (65 - 70 f)	1000 - 1300 ppm
Seedlings	400-500	1.0 - 1.2	5.8 - 6.3	65 - 70%	D: 68 - 75 f N: 68 - 75 f	68 F	18 - 21 c (65 - 70 f)	1000 ppm
Transition	550 - 650	1.3 - 1.5	5.8 - 6.3	60%	D: 68 - 75 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1300 ppm
Veg Stage 1	650 - 750	1.6 - 1.7	5.8 - 6.3	60%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Veg Stage 2	750 - 800	1.7 - 1.8	5.8 - 6.3	60%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Veg Stage 3+	850 - 900	1.8 - 1.9	5.8 - 6.3	60%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Flower Stage 1	900 - 950	1.9 - 2.0	5.8 - 6.3	50%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Flower Stage 2	950 - 1050	2 - 2.2	5.8 - 6.3	50%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Flower Stage 3	1050 - 1100	2.2 - 2.3	5.8 - 6.3	50%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Flower Stage 4+	1100 - 1150	2.2 - 2.3	5.8 - 6.3	50%	D 70 f N: 60 f	65 F	18 - 21 c (65 - 70 f)	1500 ppm
Flushing	0 - 400	0 - 0.8	5.8 - 6.3	50%	D 70 f N: 60 f	65 F	18 - 21 c (65 - 70 f)	1500 ppm

Soil	PPM	EC	PH	Humidity	Room temp'	Root Temp'	Nutrient Temperature	Co2 PPM
mothers	350-400	0.7 - 0.8	5.8 - 6.3	50%	DAY: 70 f NIGHT: 61 f	68 F	18 - 21 c (65 - 70 f)	800 ppm
Cuttings	400 - 500	0.8 - 1.0	5.8 - 6.3	90 - 98%	D: 68 - 75 f N: 68 - 75 f	68 F	18 - 21 c (65 - 70 f)	1000 - 1300 ppm
Seedlings	500 - 600	1.0 - 1.2	5.8 - 6.3	65 - 70%	D: 68 - 75 f N: 68 - 75 f	68 F	18 - 21 c (65 - 70 f)	1000 ppm
Transition	600 - 750	1.3 - 1.5	5.8 - 6.3	60%	D: 68 - 75 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1300 ppm
Veg Stage 1	800 - 850	1.6 - 1.7	5.8 - 6.3	60%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Veg Stage 2	850 - 900	1.7 - 1.8	5.8 - 6.3	60%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Veg Stage 3+	900 - 950	1.8 - 1.9	5.8 - 6.3	60%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Flower Stage 1	950 - 1000	1.9 - 2.0	5.8 - 6.3	50%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Flower Stage 2	1000 - 1050	2.0 - 2.1	5.8 - 6.3	50%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Flower Stage 3	1050 - 1100	2.1 - 2.2	5.8 - 6.3	50%	D 75 - 85 f N: 66 - 72 f	68 F	18 - 21 c (65 - 70 f)	1500 ppm
Flower Stage 4	1100 - 1150	2.2 - 2.3	5.8 - 6.3	50%	D 70 f N: 60 f	65 F	18 - 21 c (65 - 70 f)	1500 ppm
Flushing	0 - 400	0 - 0.8	5.8 - 6.3	50%	D 70 f N: 60 f	65 F	18 - 21 c (65 - 70 f)	1500 ppm

THE WHITE PAPERS PART 2

PLANT NUTRITION BREAKDOWN THE BIG THREE

NITROGEN, PHOSPHORUS, POTASSIUM

N GROW ELEMENT

Nitrogen is an essential nutrient for cannabis plants, playing a crucial role in various physiological processes that contribute to healthy growth and development. Some of the key benefits of nitrogen to a cannabis plant include:

Promotes Leaf Growth:

Nitrogen is a primary component of chlorophyll, the pigment responsible for the green coloration of leaves. Chlorophyll is essential for photosynthesis, the process by which plants convert light energy into chemical energy to fuel growth. Adequate nitrogen levels stimulate leaf production, resulting in lush, green foliage.

Enhances Protein Synthesis:

Nitrogen is a fundamental building block of proteins, which are vital for the structure and function of plant cells. Proteins

play key roles in enzyme activity, hormone regulation, and nutrient transport within the plant. By supplying nitrogen, cannabis plants can efficiently synthesize proteins necessary for growth, repair, and defense against environmental stressors.

Facilitates Root Development:

While nitrogen primarily promotes above-ground growth, it also indirectly influences root development. Healthy foliage produced through adequate nitrogen uptake allows the plant to capture more sunlight, which in turn fuels photosynthesis and supports root growth. Well-developed roots enable the plant to access water and nutrients from the soil, promoting overall vigor and resilience.

Improves Yield and Quality:

Nitrogen is a key determinant of cannabis yield and quality. Proper nitrogen levels during vegetative growth contribute to robust plant structure and increased biomass accumulation.

This lays the foundation for abundant flower production during the flowering stage. Additionally, nitrogen influences the synthesis of secondary metabolites such as cannabinoids and terpenes, which contribute to the potency and aroma of the harvested buds.

Enhances Resistance to Stress:

Nitrogen plays a vital role in regulating osmotic pressure and water balance within plant cells. Adequate nitrogen levels help cannabis plants withstand environmental stressors such as drought, heat, and pest infestations by maintaining turgor pressure and cellular integrity. This can lead to improved resilience and faster recovery from adverse conditions.

Regulates Metabolism:

Nitrogen is involved in various metabolic processes within the cannabis plant, including photosynthesis, respiration, and nitrogen assimilation.

As a component of enzymes and coenzymes, nitrogen plays a crucial role in catalyzing biochemical reactions necessary for energy production and nutrient utilization. By ensuring optimal nitrogen levels, growers can support efficient metabolic activity, leading to improved plant performance and overall health.

Supports Flowering and Fruit Set: While nitrogen is predominantly associated with vegetative growth, it also influences flowering and fruiting in cannabis plants. During the transition from vegetative growth to flowering, cannabis plants require a gradual reduction in nitrogen levels to signal the onset of reproductive development. By adjusting nitrogen availability, growers can encourage the transition to flowering while maintaining balanced nutrient uptake to support flower formation and fruit set.

Aids in Nutrient Uptake: Nitrogen interacts synergistically with other essential nutrients, such as phosphorus, potassium, and micronutrients, to facilitate nutrient uptake and utilization by cannabis plants. Proper nitrogen levels help maintain optimal root health and activity, ensuring efficient nutrient absorption from the soil or nutrient solution. By promoting nutrient uptake, nitrogen contributes to overall nutrient efficiency and plant performance, resulting in healthier, more productive cannabis crops.

Contributes to Soil Fertility: In addition to benefiting cannabis plants directly, nitrogen plays a vital role in soil fertility and ecosystem health.

Nitrogen cycling processes, such as nitrogen fixation, nitrification, and denitrification, contribute to the availability and cycling of nitrogen within the soil. By incorporating nitrogen-fixing cover crops or organic amendments rich in nitrogen, growers can enhance soil fertility, promote microbial activity, and improve overall soil structure and health, leading to sustainable and resilient cannabis cultivation practices.

Regulates pH Balance: Nitrogen availability can influence the pH balance of the growing medium. Certain nitrogen-containing fertilizers, such as ammonium-based fertilizers, can lower the pH of the soil or nutrient solution, making it more acidic. Conversely, nitrate-based fertilizers tend to have a neutral or slightly alkaline effect on pH. By maintaining appropriate nitrogen levels and selecting nitrogen sources that align with the desired pH range for cannabis cultivation (typically around 6.0 to 6.5 for soil), growers can optimize nutrient uptake and minimize the risk of nutrient deficiencies or toxicities associated with pH imbalances.

Facilitates Adaptation to Environmental Conditions: Nitrogen availability can influence the cannabis plant's response to environmental factors such as light intensity, temperature, and humidity. Adequate nitrogen levels support the plant's ability to adapt to changing environmental conditions by regulating stomatal conductance, transpiration rates, and water use efficiency. This can help mitigate the effects of environmental stressors and optimize plant performance under varying growing conditions, resulting in healthier, more resilient cannabis crops.

Supports Sustainable Agriculture Practices: Nitrogen management is essential for promoting sustainable agriculture practices in cannabis cultivation. Excessive nitrogen use can lead to environmental pollution, including nitrogen runoff, eutrophication of water bodies, and air pollution from nitrogen emissions. By adopting precision nutrient management strategies, such as controlled-release fertilizers, organic amendments, and integrated nutrient management approaches, growers can optimize nitrogen use efficiency, minimize environmental impacts, and promote sustainable production practices that safeguard natural resources and ecosystems for future generations.

In summary, nitrogen is indispensable for cannabis cultivation, supporting fundamental physiological processes, promoting vigorous growth, maximizing yield and quality, enhancing stress tolerance, and contributing to soil fertility and ecosystem sustainability. By understanding the multifaceted roles of nitrogen and implementing appropriate nutrient management strategies, growers can optimize cannabis production while minimizing environmental impacts and ensuring long-term sustainability.

PLANT NUTRITION BREAKDOWN

THE BIG THREE

NITROGEN, PHOSPHORUS, POTASSIUM

P ENERGY ELEMENT

Phosphorus

is an essential nutrient for cannabis plants, playing a vital role in various physiological processes that contribute to healthy growth and development. Some of the key benefits of phosphorus to a cannabis plant include:

Promotes Root Growth:

Phosphorus is essential for root development and overall root health in cannabis plants. It plays a crucial role in root elongation, branching, and establishment, allowing the plant to effectively explore and absorb water and nutrients from the soil. Adequate phosphorus levels encourage robust root growth, which enhances nutrient uptake, water efficiency, and overall plant vigor.

Facilitates Energy Transfer:

Phosphorus is a key component of adenosine triphosphate (ATP), the primary energy currency in plant cells. ATP molecules store and transfer energy within the plant, powering various metabolic processes such as photosynthesis,

respiration, and nutrient transport. By supplying phosphorus, cannabis plants can maintain optimal energy levels, supporting active growth, flowering, and fruiting throughout their lifecycle.

Stimulates Flowering and Fruit Set:

Phosphorus plays a critical role in the reproductive development of cannabis plants, particularly during the flowering stage. It promotes the formation of flower buds, pollen, and seeds, contributing to increased flower production, bud development, and overall yield. Adequate phosphorus availability during flowering ensures optimal reproductive success and the production of high-quality, resinous buds rich in cannabinoids and terpenes.

Enhances Nutrient Uptake:

Phosphorus interacts synergistically with other essential nutrients, such as nitrogen, potassium, and micronutrients, to facilitate nutrient uptake and utilization by cannabis plants. It plays a key role in the synthesis of nucleic acids, phospholipids, and other cellular components involved in nutrient transport and metabolism. By promoting nutrient uptake efficiency, phosphorus helps maintain balanced nutrient levels within

the plant, supporting optimal growth and development.

Improves Disease Resistance:

Phosphorus contributes to the cannabis plant's ability to resist diseases and environmental stressors by strengthening cell walls and promoting overall plant health. It plays a role in the production of secondary metabolites, such as phytoalexins and defense-related enzymes, which help combat pathogens and protect against disease. Additionally, phosphorus supports the production of antioxidants, which help mitigate oxidative stress and enhance the plant's resilience to environmental challenges.

Enhances Photosynthetic Efficiency:

Phosphorus is involved in the regulation of photosynthesis, the process by which plants convert light energy into chemical energy to fuel growth and metabolism. It plays a role in the activation of enzymes involved in carbon fixation, sugar synthesis, and chlorophyll production, all of which are essential for efficient photosynthetic activity. By ensuring adequate phosphorus levels, cannabis plants can maximize their photosynthetic efficiency, leading to increased biomass accumulation and

overall productivity.

Promotes Early Growth and Development: *Phosphorus is particularly important during the early stages of cannabis growth, as it supports rapid root development, seedling vigor, and establishment. Adequate phosphorus levels encourage strong, healthy seedling growth, enabling young plants to establish robust root systems and access essential nutrients and water from the soil. This early boost in growth sets the stage for vigorous vegetative growth and optimal plant performance throughout the rest of the growing cycle.*

Enhances Flowering and Bud Formation: *Phosphorus is crucial for promoting flowering and bud formation in cannabis plants. During the flowering stage, phosphorus stimulates the production of essential hormones and enzymes involved in flower initiation, development, and maturation. It also plays a role in the synthesis and transport of carbohydrates and sugars, which are essential for bud growth, resin production, and overall flower quality. By supplying phosphorus during flowering,*

growers can ensure robust flower development, increased resin production, and potent cannabinoid concentrations in the harvested buds.

9. Improves Water and Nutrient Use Efficiency:

Phosphorus plays a key role in regulating water and nutrient uptake and utilization by cannabis plants. It enhances the plant's ability to absorb and transport water and essential nutrients from the soil, promoting efficient nutrient uptake and utilization throughout the growing cycle. By optimizing phosphorus levels, growers can improve water use efficiency, reduce nutrient waste, and minimize environmental impacts associated with excessive fertilizer use, leading to more sustainable and resource-efficient cannabis cultivation practices.

Phosphorus is essential for maintaining overall plant health, vitality, and resilience to environmental stressors. It contributes to the structural integrity of cell membranes, cell walls, and organelles, helping to protect against physical damage and environmental stress. Phosphorus also plays a

role in the regulation of plant metabolism, growth hormone synthesis, and signaling pathways involved in stress response and adaptation. By ensuring adequate phosphorus levels, growers can promote robust plant growth, improve stress tolerance, and enhance the overall health and vitality of cannabis plants, leading to higher yields and quality harvests.

Phosphorus is a critical nutrient for cannabis cultivation, supporting essential physiological processes, promoting early growth and development, enhancing flowering and bud formation, improving water and nutrient use efficiency, and supporting overall plant health and vitality throughout the growing cycle. By understanding the importance of phosphorus and implementing proper nutrient management practices, growers can optimize plant performance, maximize yield and quality, and achieve success in cannabis cultivation.



PLANT NUTRITION BREAKDOWN

THE BIG THREE

NITROGEN, PHOSPHORUS, POTASSIUM

K HEALTH ELEMENT

Potassium

plays a crucial role in the cultivation of cannabis plants, offering a range of benefits that contribute to their overall health and productivity. Here's a detailed breakdown:

Nutrient Uptake: Potassium is essential for the uptake of other nutrients, including nitrogen and phosphorus. It helps regulate the opening and closing of stomata, which are tiny pores on the surface of leaves responsible for gas exchange and the absorption of water and nutrients.

Water Regulation: Potassium helps regulate water uptake and distribution within the plant. This is critical for maintaining proper hydration levels, especially in times of drought or excessive heat. Adequate potassium levels can help cannabis plants withstand periods of water stress.

Photosynthesis: Potassium is involved in the process of photosynthesis, where plants convert light energy into chemical energy.

It helps activate enzymes responsible for this process and contributes to the synthesis of carbohydrates, which serve as the building blocks for plant growth.

Stress Resistance: Potassium plays a key role in enhancing the plant's resistance to various environmental stresses, including drought, temperature extremes, and disease. It helps strengthen cell walls, making plants more resilient to damage and pathogens.

Flower and Fruit

Development: Potassium is particularly important during the flowering and fruiting stages of cannabis growth. It promotes the development of robust flowers and fruits by supporting cell division and enlargement. Potassium deficiency during this stage can lead to smaller yields and lower-quality buds.

Quality and Flavor:

Adequate potassium levels contribute to the overall quality and flavor of cannabis buds. Potassium deficiency can result in diminished terpene production, which affects the aroma and taste of the final product. By ensuring optimal potassium levels, growers can enhance the potency and

sensory characteristics of their harvest.

PH Regulation: Potassium ions can help regulate the pH of the growing medium, ensuring that it remains within the optimal range for nutrient uptake. This is important for preventing nutrient deficiencies or toxicities that can occur when pH levels are too high or too low.

Resin Production: Potassium is directly involved in the synthesis of resin in cannabis plants. Resin contains cannabinoids, terpenes, and other compounds that contribute to the therapeutic and psychoactive effects of cannabis. By ensuring sufficient potassium levels, growers can enhance resin production, leading to higher potency and greater medicinal value in the final product.

Disease Resistance:

Potassium helps bolster the plant's immune system, making it more resistant to fungal, bacterial, and viral infections. Potassium-deficient plants are more susceptible to pathogens and may require additional treatments to mitigate the risk of disease outbreaks. By providing adequate potassium, growers can promote plant

health and reduce the need for chemical interventions.

Yield Maximization:

Optimal potassium levels are essential for maximizing yields in cannabis cultivation. Potassium deficiency can stunt plant growth and development, leading to smaller harvests and reduced profitability. By prioritizing potassium supplementation, growers can achieve larger, more bountiful yields, increasing the overall efficiency and success of their operations.

Environmental:

Sustainability: Potassium plays a role in promoting environmental sustainability in cannabis cultivation. By supporting healthy plant growth and resilience to stress, potassium helps reduce the need for excessive fertilizers, pesticides, and water.

Overall Plant Health:

Ultimately, potassium is indispensable for maintaining the overall health and vitality of cannabis plants. It acts as a foundational nutrient, influencing countless physiological processes that are essential for growth, development, and reproduction. By prioritizing potassium management, growers can cultivate robust, resilient plants that produce high-quality, high-yield harvests, contributing to the success and sustainability of the cannabis industry.

Improved Nutrient Use

Efficiency: Potassium aids in the efficient use of other essential nutrients by facilitating their uptake and translocation within the plant. When potassium levels are optimal, cannabis plants can better absorb

and utilize nutrients such as calcium, magnesium, and sulfur. This synergy among nutrients ensures that plants have access to all the elements necessary for healthy growth and development, leading to improved overall nutrient use efficiency.

Regulation of Enzyme

Activity: Potassium plays a critical role in activating various enzymes involved in metabolic processes essential for plant growth. Enzymes catalyze biochemical reactions within the plant, including those related to carbohydrate metabolism, protein synthesis, and hormone regulation. By regulating enzyme activity, potassium helps optimize metabolic pathways, ensuring that energy and resources are allocated efficiently to support plant growth and productivity.

Adaptation to

Environmental Stress:

Cannabis plants cultivated outdoors are subjected to fluctuating environmental conditions such as temperature extremes, drought, and salinity. Potassium helps plants adapt to these stressors by regulating osmotic balance, maintaining turgor pressure, and activating stress-responsive genes. Additionally, potassium enhances the efficiency of water and nutrient uptake under adverse conditions, enabling cannabis plants to thrive even in challenging environments.

Enhanced Root

Development: Adequate potassium levels promote robust root development in cannabis plants, which is essential for nutrient and water uptake, anchorage, and structural support. Potassium regulates cell elongation and division in root tissues,

leading to the proliferation of healthy, fibrous root systems. Well-developed roots improve nutrient absorption and enhance overall plant vigor, resulting in healthier, more resilient cannabis plants with increased yield potential.

Regulation of Plant

Hormones: Potassium interacts with plant hormones such as auxins, cytokinins, and gibberellins, which play key roles in regulating various aspects of plant growth and development. By modulating hormone signaling pathways, potassium influences processes such as cell division, elongation, differentiation, and flowering. This hormonal regulation ensures proper coordination of physiological responses, leading to balanced growth and optimal yield in cannabis plants.

Potassium is indispensable for the cultivation of cannabis plants due to its multifaceted roles in nutrient uptake, water regulation, photosynthesis, stress resistance, flowering, resin production, disease resistance, yield maximization, environmental sustainability, nutrient use efficiency, enzyme regulation, stress adaptation, root development, and hormone regulation. By recognising the importance of potassium and implementing effective management, growers can optimize plant health, productivity, and quality.

PLANT NUTRITION BREAKDOWN

THE POWERHOUSE

SUPER KELP

KELP

NUTRITIONAL POWERHOUSE

- Kelp, a kind of seaweed, is a powerhouse of nutrients for cannabis plants. It is rich in essential minerals like potassium, nitrogen, and phosphorous, which are vital for healthy plant growth. additionally, kelp contains growth hormones and vitamins that stimulate root development, enhance nutrient uptake, and increase plant resilience to stressors like pests and diseases. Incorporating kelp into a cannabis cultivation regime can boost yields, improve plant vigor, and sustainable option, aligning with eco-friendly practices.

- Kelp contains over 62 beneficial trace elements and micronutrients from the sea, including; copper (Cu), iron, (Fe), manganese (Mn), & zinc (Zn), These elements activate enzymes, and, if just one enzyme is turned on, one single molecule can perform 1000 chemical reactions per second in the plant.

- Seaweed extracts also have a positive effect on brix. Seaweed extracts include mannitol, a natural sugar that chelates micronutrients (a micronutrient is one of seven essential secondary nutrients that plants require to maintain productive growth. Micronutrients include chlorine (Cl), molybdenum (Mo), copper (Cu), iron (Fe), manganese (Mn), zinc (Zn), and boron (B). Plants require all of these nutrients in small amounts, however, they are less essential than macronutrients, or primary nutrients, nitrogen (N), phosphorus (P), and potassium (K), and makes them more available to the plant).

- Seaweed extracts are loaded with natural plant growth hormones that stimulate cell division. When used at the root zone, seaweed extracts stimulate cell division of root cells, resulting in more lateral root growth and greater root mass. Improved root growth creates more surface area for the uptake of water and minerals. Seaweed extracts are synergistic with other organic bio-stimulants, so using a combination of additives is better than using any single additive alone.

Seaweed And Plants

The many benefits of seaweed extracts have been known to growers for thousands of years, but only in modern times have their active ingredients been identified. Seaweed extracts are rich in natural plant growth hormones and beneficial trace elements, and they are a component of most bio- stimulant products found on the market today. The best seaweed extracts come from the brown seaweed **Ascophyllum nodosum**, harvested from mineral-rich waters such as those found near Norway and Nova Scotia. **Ascophyllum nodosum** grows in the tidal zone and is subject to extremes in temperature, flooding, drought, salt stress, and high levels of solar radiation and ultraviolet light. The seaweed extracts from these regions are very high in Auxins, Cytokinins, Gibberellins and plant protection agents.

What Are Auxins, Cytokinins, and Gibberellins?

Seaweed extracts have high levels of natural plant growth hormones, especially auxins, cytokinins and gibberellins.

Hormones are very small signal molecules that help steer the growth and development of the plant. Hormones are usually produced in one part of the plant and transferred to another part of the plant to initiate physiological changes. For example, auxins are produced in the leaves of plants, then transferred to the roots and growing tips. Cytokinins, on the other hand, are produced in the roots and transferred to the leaves and growing tips. The balances between hormone levels determine their affects on plant development.

AUXINS : ROOTS

Auxins: are best known for their positive effect on rooting, and synthetic auxins are usually found in rooting powders and cloning gels. Only a small amount of auxins are needed to initiate root growth. Too much auxin, especially when applied to growing roots, can actually have the opposite affect and restrict root growth! Seaweed extracts contain small amounts of natural auxins and indoles that help stimulate rooting, which, when combined with cytokinins, result in the production of greater root mass. Greater root mass provides better uptake of water and minerals and a healthier, more stress-resistant plant.

CYTOKININS : FOLIAGE

Cytokinins: At molecular level cytokinins play a huge role in sending biological signals to the plant, which determine the growth and development of cell division. Produced in the roots, seeds and fruits, travelling upwards towards the xylem, to promote lateral growth and to slow

down the symptoms of ageing and keeps the plant's leaves green for longer time. As well as performing mitosis, the development of chloroplast, root cell tissue, the structure of branching and leaf formation. The way the cytokinin works is by binding itself to a protein receptor within the cell membrane, which will then be attached to a phosphate group in the cytosol. The protein will then activate once moved into the nucleus, where it binds to the genes of the plant which will dictate what direction of growth will commence. They stimulate rapid cell division and the production of new cell walls. Cytokinins work in conjunction with other plant hormones.

If, for example, cytokinins are applied during root formation, the cytokinins will stimulate the division of more root cells. If cytokinins are applied during the vegetative growth stage, the plants will grow faster with stronger cell walls. And if cytokinins are applied just prior to fruiting and flowering, more lateral buds will develop for better overall fruit and flower production.

The cytokinins in seaweed extracts also have a beneficial effect on mother plants, especially when used as a foliar spray. When applied to plant tissues, cytokinins draw nutrients into the tissue, while stimulating more lateral plant growth. More lateral buds mean stockier plants with more candidates for healthy clones.

GIBBERILLINS : SEEDS

Gibberellins are what determine stem elongation as well as flower and fruit development.

Sometimes used as a way of nursing old stubborn seeds, gibberellins can stimulate dormant seeds by producing an enzyme that will supply the seed with some nutrient energy, (seaweed extracts are sometimes used to soak seeds before planting) The gibberellins stimulate the dormant seeds to produce enzymes that break down the stored starches into energy molecules needed for respiration. This energy is then transferred into the roots then upwards to the growing tips. As with everything too much of these three hormones can in fact inhibit plant development. Providing too much auxin can restrict and stunt root growth, too much gibberellin can in fact reduce germination rates in seeds and excess amounts of cytokinin can burn plant leaf tissue.

NOTE: When using seaweed extracts, it is very important to follow the dosage and application directions carefully. Seaweed extracts can be applied as a foliar spray or as an additive to the nutrient formula, but foliar application seems to be the most efficient. Just remember not to use it as a foliar spray on flowers. Also, be careful not to use too much! Hormones are very powerful, even in small amounts, and using too much will have the opposite effect on the plants. Too much auxin restricts root growth, too much gibberellin reduces germination rates, and too much cytokinin can burn leaves.

Moderation is the key!



420 FLICKS WORTH A WATCH

Cannabis may seem more popular now than ever, but a lot of people still don't know much about the plant. Old school propaganda films like *Reefer Madness* are now comically absurd to most viewers—But the War on Drugs is still a very real and on-going struggle. And disinformation still fuels many stigmas and myths about the cannabis plant and those who use it. But some of the best weed documentaries around are starting to refute some of these longheld beliefs.

As more states in the U.S. and countries around the world shift towards legalization (24 states so far), it's time for non-believers to recognize that marijuana is a more complex topic than once thought. Lots of people are starting to make a name for themselves in the legalizing space, like NYC's Grand Marshal of Cannabis, Shiest Bubz or these 20 women making a name for themselves in weed.

Things have come a long way from Cheech and Chong, and cannabis lovers from all walks of life are now open to learning more about the science and spirituality behind the plant. Dispensaries like Gotham demonstrate the growing conflation between cannabis and other aspects of lifestyle and wellness. A few savvy filmmakers have been working to combat the lingering stigma

for years. The result is a treasure trove of informative documentaries about weed and the culture of those who love it, including Netflix bangers, underground classics, and a few gems that even your weed man hasn't seen yet. Whether you want to learn how to make pot brownies, or how legal cannabis can help solve social inequities, here are the best weed documentaries to watch in 2024. While this article chronicles more serious business, if you're just looking for a movie to watch while high, we've got you there too.

1. 'Grass Is Greener' (2019)

STREAM NOW ON NETFLIX

Hosted by Fab Five Freddy, this documentary features one of the most engaging timelines of cannabis history you will ever find. *Grass Is Greener* includes legendary artists and advocates who stood up for the plant long before it was one of America's top cash crops.

Join stars like Snoop Dogg and B-Real for real stories from the pre-legal era, and get analysis from experts like Columbia University's Dr. Carl Hart about where the medical and recreational markets are heading. With *Grass Is Greener*, Director Fred Brathwaite set the bar for modern weed docs, squeezing over 100 years of twists and turns into an engaging journey through time. That's why this is the perfect doc for the skeptics, the canna-curious, and connoisseurs to all get on the same page.

2. VICE's 'The Future of Weed: High Country' (2013) & 'Weediquette' (2017)

STREAM ON VICETV

It's hard to identify a media company that has done more work to unpack the evolving world of cannabis than VICE. From early on, their myriad productions have captured all aspects of the world as it transitions from the taboo to the mainstream.

For a perspective on how far legalization has come in a very short time, tune in to these phenomenal VICE pieces from 2013 and 2017. With post-2020 hindsight, these docs capture the fast shift in public access and attitudes towards cannabis. *High Country* visits farmers in newly legal Colorado, while *Weediquette* documents pot pioneers around the world.

3. 'Grass' (1999)

STREAM ON APPLE TV

This throwback classic was simply ahead of its time. Narrated by Woody Harrelson, *Grass* dropped when just a handful of states had medical cannabis programs, and none had recreational programs. The decade-by-decade look at weed history is a reality check for anyone who was exposed to *Reefer Madness*, D.A.R.E. programs, and other propaganda about the cannabis plant.

4. 'Super High Me' (2007)

Super High Me is not available on major streaming platforms, so you'll have to search for a DVD or link.

You know how the 2004 documentary *Supersize Me* stigmatized American fast food almost overnight? Doug Benson took a similar approach with *Super High Me*. His goal: to normalize cannabis use—no matter how excessive: and end the lazy stoner, gateway drug nonsense that still lingers. Since *Super High Me* premiered, Americans of all ages and backgrounds have shown increasing public support for legalization. Looks like Benson knew what he was doing.

5. 'The Culture High' (2014)

STREAM ON TUBI

This is for the real stoner historians. Two years before California allowed all adults to use cannabis, pot stars like Joe Rogan, Snoop Dogg, and Wiz Khalifa teamed up to dig into the underground lives of cannabis growers, sellers, and activists with *The Culture High*. Stream this to gain a deeper appreciation for the artistry and industry that goes into making elite-level exotic.

6. 'Dimebags to Dispensaries: Street-Dealers to Multi-Million Dollar Weed Startups' (2016)

STREAM ON VICE

One of the most important storylines in the legalization of cannabis is how legacy people involved in weed before legalization can find a lane (and compensation) in the new legal world. Legal cannabis sales are projected to reach \$30 billion by 2025. That's why countless entrepreneurs and corporate sharks are jumping headfirst into the brand new market.

Whether they come from the corner or the corner office, *Dimebags to Dispensaries* seeks to profile some of the most notorious and innovative trailblazers at the cutting edge of one of the world's most exciting industries.

7. 'Bong Appétit' (2019)

STREAM ON VICE

Pairing food with cannabis is a rite of passage for many users. On *Bong Appétit*, viewers get to vibe out with celebs while learning about cannabis and cooking. The diverse array of celebs and culinary experiences make this show an easy binge, with guests like George Clinton and B Real, you might learn a thing or two about cannabis history while you enjoy the show.

8. 'Breaking Habits' (2019)

STREAM ON PRIME VIDEO

Picture this: A Wisconsin woman leaves a successful CEO role to join a sisterhood of nuns. The nuns then invest in a CBD farm and become local legends. While law enforcement mocks the idea of a drug being medicine, the sisters argue that "conventional wisdom is that cannabis is bad, (and) conventional wisdom was that women had smaller brains than men." *Breaking Habits* gives a powerful lesson on how to call out hypocrisy while creating positivity in a way that even non-smokers will love.

9. 'Weed the People' (2018)

STREAM ON YOUTUBE

The struggle to legalize cannabis often focuses on the commercial potential of the plant. But medical advocates first got the plant legalized, and continue to be at the forefront of research and development. *Weed the People* puts the focus on medical patients who use cannabis to live normal lives. The documentary also touches on the looming threats of big pharma and Wall Street wolves planning to devour the burgeoning industry, along with those who built it.

10. 'Rolling Papers' (2015)

STREAM ON PRIME VIDEO

In 2012, Colorado became the first state to legalize recreational cannabis. A major local newspaper hired a dedicated marijuana editor and started a website called *The Cannabist* to document all angles of the budding culture of legal weed. The editor, Ricardo Baca, covered the music for years, "so I knew he was familiar with marijuana," quipped a coworker during the doc. *Rolling Papers* shines a light on how medical cannabis is used to treat sick kids, corporate scams to short customers out of THC in their products, and much more.

11. 'The Profit: Marijuana Millions' (2017)

STREAM ON YOUTUBE

For a straight-laced angle on marijuana legalization, look no further than CNBC's *The Profit: Marijuana Millions*. This special two-part series shows Marcus Lemonis traveling to California to meet the thousands of entrepreneurs chasing the green rush. From established botanists and business people, to scrappy start-ups.

12. 'The Legend of 420' (2017)

STREAM ON YOUTUBE

Every weed documentary serves as a bit of a time capsule of the moment in which it was produced, and 2017 was a major year for the plant. *The Legend of 420* is a more lighthearted film that chronicles the changing perceptions around cannabis during the nascent years of its legalization, anchored by appearances from Tommy Chong, Jason Mraz and more. Director Peter Spierer also directed 1997's *Rhyme and Reason*, which *Rolling Stone* rated one of the best music documentaries of all time.

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