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The Relationship
Between Leaf Surface
**TEMPERATURE AND
LIGHTING SPECTRUM**
White Light isn't the Right Light

Sustainably Mitigating
**THE ENVIRONMENTAL
IMPACT OF CANNABIS**
Cultivation
The Promise of a
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and Cultural Control

Demystifying
CLONING
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and Vibrancy

CANNABIS BIODIVERSITY
THE STAKES ARE HIGH





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Cannabis on Collision Course with Science

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Lab Baths

the Good, the
Bad, the Ugly

Filter Presses for Hemp Oil Extraction

Squeeze Out
Every Last Drop

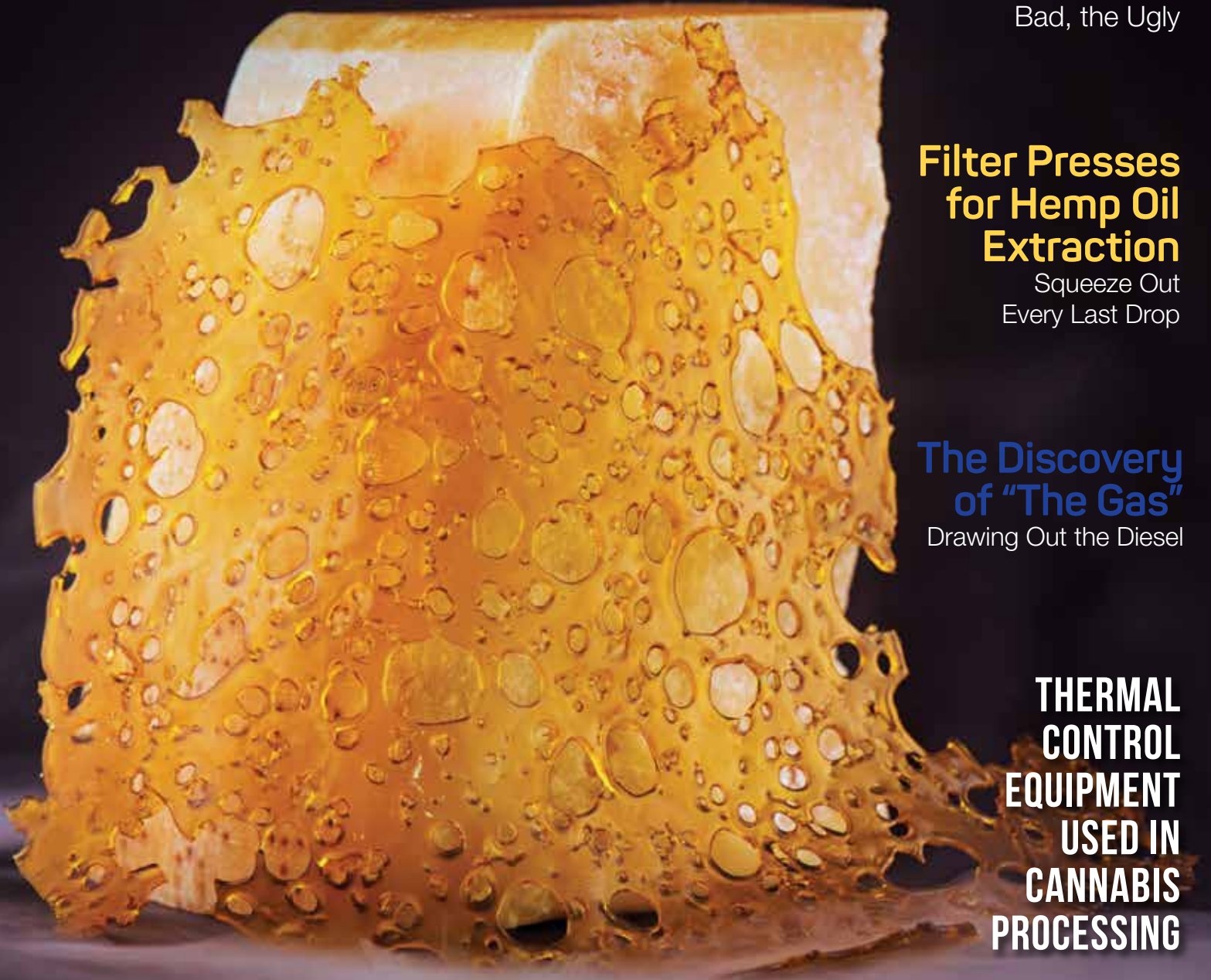
The Discovery of "The Gas"

Drawing Out the Diesel

**THERMAL
CONTROL
EQUIPMENT
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Size Really Does Matter

Optimizing Particle Size for Extraction



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Extraction Magazine

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The Discovery of “The Gas” is Revolutionizing the Terpene and Cannabis Industries

By Kevin Koby, ABSTRAX

There’s a reason that the cannabis plant has intrigued humanity for centuries with its powerful effects and unforgettable aroma. Cultivators and chemists alike have a long-held obsession with innovating and recreating cultivars that have remarkable depth and mind-blowing complexity.

Our research seeks to get to the root, of the root, of which molecules make one plant smell dank and skunky, another smell earthy with hints of pine, and yet another smell sweet and fruity. Yes, the cultivating world has grown by leaps and bounds over the past decade, but there’s been an admitted lack of understanding as to what exactly is responsible for the uniqueness of each cannabis plant.

The Secret to Finding the Gas

At ABSTRAX, we’ve heavily invested in research and development for the past two years, including a proprietary three-dimensional gas chromatography system with mass spectrometry and various other detectors. It can literally measure the aromas of cannabis to determine which terpenes are present and quantify the concentration of each. And in that process, we’ve discovered exactly which compounds give cannabis its gassy scent.

The official hunt for “The Gas” was spurred by our strategic partnership with Josh Del Rosso from Josh D Farms. Josh is the iconic cultivator responsible for popularizing OG varieties and developing some of the best original genetics

in the industry. Collaboratively, we sought out the elusive, quintessential aroma associated with cannabis.

The research was executed at our Type 7 licensed research and manufacturing lab where award-winning product developers and PhD chemists use state-of-the-art extraction and the most advanced cultivar analysis technology to study over 400 botanical aroma compounds via three-dimensional analysis. Each compound within every plant was studied and carefully quantified.

We then developed the “Gas Factor” metric to quantify how gassy a cultivar is. Cannabis experts rated flowers based on gassiness, searched for trends in data, and developed a mathematical model to relate results to consumers. We created a numerical metric from 0-100 to rate how gassy a flower is based on its olfactory chemistry.

Seven Reasons This Discovery is Monumental

Discovering “The Gas” is a huge find for the following reasons:

- ▲ 1) The new cultivar-specific terpene profiles have captured the essence of popular cannabis, especially the OG varieties.
- ▲ 2) It provides the ability to compare the “Gas Factor” of different cultivars to increase desirable traits, which makes it easier for cultivators to create higher quality and



consistent cannabis varieties.

- ▲ **3)** Consumers and manufacturers can now enjoy a non-cannabis-derived botanical terpene blend that tastes, smells, and feels very similar to cannabis terpenes, without tetrahydrocannabinol (THC).
- ▲ **4)** We can now offer advanced cultivar-specific formulations made entirely from natural, botanically derived ingredients that are also native to cannabis.
- ▲ **5)** The price per unit of a non-cannabis terpene product is a fraction of what a cannabis-derived product costs. And it can provide a more realistic, gassy aroma that may not be prevalent in cannabis-derived terpenes due to extraction capabilities, input quality, or degradation.
- ▲ **6)** The botanically derived terpene formulations can be reproduced with unwavering consistency and purity.
- ▲ **7)** These terpenes are legal in every state and country throughout the world, opening the door for an extremely important application for terpenes in the cannabis industry and beyond.

With knowledge and a defined toolset, we can now empower cultivators to develop cultivar-specific blends that are extremely consistent. An introduction and explanation on how we made these discoveries can be found in the recently published blog post “A Quick Guide to Cannabis Metrics.” [1] For those in love with exotic cultivars that exhibit that wonderfully obscure fruity aroma that so many people love, we can recreate Sherbinski’s Acai Berry Gelato—with its

unique berry aroma and sweet earthy backnote—as well as many others. And this can be done with zero THC or cannabis to boot.

The Future

With the cannabis market expected to grow to \$42.7 billion by 2024 [2], terpenes are expected to play a massive role. This is even truer in the face of last year’s vape scare, which has resulted in higher industry standards and a call for natural ingredients. What’s more, the terpene industry is a rapidly growing segment of the global flavor and fragrance market, which is expected to grow to \$35 billion by 2024. [3] This market segment includes the cannabis, cannabidiol (CBD), skincare, cosmetics, health and wellness, and food and beverage industries.

And finally, we’re excited about what this all means for the most well loved cannabis varieties like Sherbinski’s, Josh D, and Jack Herer. We’re working with them to create the “Native Series” and “The Growers Collection,” which allows for us to reconstruct cultivar aromas using botanically derived terpenes instead of cannabis so their products can be enjoyed in every state and nearly any country on earth.

We expect the art and science surrounding the application of terpenes to revolutionize the cannabis world as we know it, while opening a plethora of new and exciting opportunities within other growing industries. We believe we’ve just



scratched the surface, as there's so much more exploration to be done!

About ABSTRAX

ABSTRAX is a leader in the research, development, and production of botanically derived and cannabis-inspired terpenes that create unforgettable sensorial experiences. Headquartered in California, the company has partnered with leading cannabis cultivators to study their plants' chemical profiles and create advanced terpene formulations. As a result of these efforts, ABSTRAX offers the largest catalogue of botanically derived terpene blends and isolates native to cannabis. These ingredients, also known as functional flavors and aromas, are used in vapes, concentrates, edibles, beer, essential oils, fragrances, cosmetics, topicals, tinctures, alcohol, food and beverage, personal care, and more. Additionally, ABSTRAX has developed a robust quality management system, including gas chromatography analysis and molecular distillation of natural ingredients, to

References

- ▲ [1] Abstrax Tech, "Quantifying Terpenes: An Introduction into Botanical Flower Metrics," www.abstraxtech.com. Accessed 19 April 2020.
- ▲ [2] "Global Cannabis Market to Hit \$42.7 Billion by 2024, According to Updated Report from Arcview Group, BDS Analytics." Business Wire, 30 Jan. 2020.
- ▲ [3] "Flavor and Fragrance Market Report: Trends, Forecast and Competitive Analysis." ReportLinker, May 2019.

investigate and ensure that ingredients used in its products and products within its industry, are safe for consumption. For more information, visit AbstraxTech.com.