





## WHAT ARE TERPENES:

Terpenes are a natural oil or organic compound that is produced in plants, including the hemp plant. If you've ever noticed the aroma of lavender, sage or even cannabis, you've already smelled terpenes hard at work. Those aromatic molecules are what gives plants, trees, and flowers a wide range of scents, such as floral, citrus and even earthy smells. As it turns out, those scents are more than just enjoyable scents; They are also good for your health!

#### **MEDICAL BENEFITS OF TERPENES:**

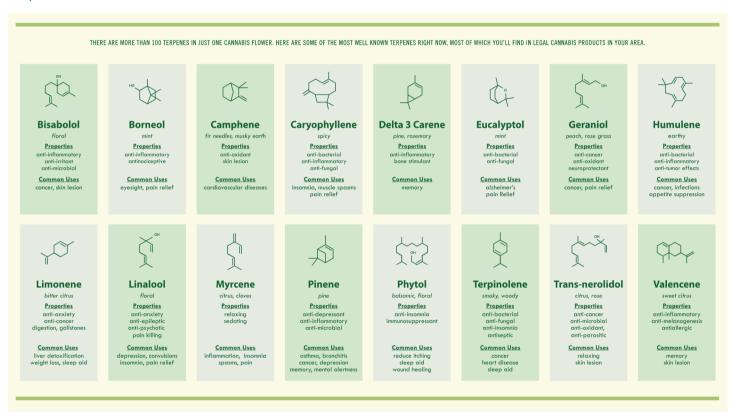
Terpenes have a wide range of health benefits, and each individual terpene has its own unique effects and benefits. Some terpenes promote stress relief and relaxation, while other terpenes promote focus and alertness. The cannabis plant is extremely rich in terpenes. The structure of these compounds is similar to cannabinoids, equally impressive is the number of terpenes found in cannabis – scientists can classify over one hundred different types. The ten most commonly found terpenes in cannabis are:

- Myrcene antioxidant properties and enhanced anti-inflammatory effects.
- Pinene may be used for pain, inflammation, or anxiety.
- Limonene increased anti-anxiety with mood elevating/properties.
- Humulene anti-inflammatory benefits.
- Linalool enhanced anti-anxiety with sedative properties, and pain-relieving effects.
- Eucalyptol studies have shown that eucalyptol can help with inflammation-causing pain, respiratory diseases, pancreatitis, and more. It also has antioxidant, antibacterial, anticancer, and antifungal properties. As for its mental benefits, eucalyptol can help enhance memory while boosting cognitive energy. There has also been research that shows eucalyptol as a promising treatment for those with Alzheimer's.
- Borneol A staple of Asian traditional medicine, borneol is an effective anti-inflammatory and pain reliever, primarily as a topical. Borneol has also proven effective as an anticoagulant for stroke patients and may increase the effectiveness of other drugs.
- Phytol may be used as a pain reducer and anti-inflammatory.
- Geraniol potential medical benefits attributed include: antioxidant, anti-tumor, neuroprotectant, anti-bacterial, anti-fungal, anti-viral, and anti-spasmodic.

• Caryophyllene - Unlike the other terpenes, caryophyllene has a unique quality similar to cannabinoid CBD conveyed in the central nervous system. Caryophyllene has the power to reduce pain and inflammation in the body, while also decreasing stress levels.

The effect and health benefit of any given terpene may change in the presence of other compounds, which is called the entourage effect. When we at Healthy Hemp Pet Company refer to the entourage effect it means all of the cannabinoids and terpenes working together in our full-spectrum, terpene-rich hemp oil. The idea is that multiple cannabinoids combined with multiple terpenes lead to better therapeutic benefits than the cannabinoids alone.

As more terpene isolates and terpene blends become available, there's no reason these benefits need to be reserved strictly for humans and not extended to animals. In fact, not only are terpenes safe for animals, but they may potentially benefit immensely from the healing properties of terpenes.



# **TERPENE RESEARCH:**

For years it was understood that terpene benefits were only from inhaling terpenes due to the olfactory system (more commonly known as the sense of smell). It was thought that terpenes were tied to the emotional centers of our brain, therefore having a positive mood effect. However, more recently it's been identified that terpenes also act directly on brain cells to modulate brain activity. The terpene caryophyllene has been shown to have pain-relieving, anti-inflammatory benefits, as well as an antioxidant boost. A study by the Chongqing Medical University in China has proven promising results in using this particular terpene to treat Alzheimer's disease. The progression in dependent on mitigating inflammation in the brain, and caryophyllene was either injected or administered orally in mice to reduce inflammation by activating cannabinoid, or CB2, receptors in the brain. The neurotherapeutic potential extends to other terpenes as well. In some lab models, high doses of linalool showed anti-seizure and anti-epileptic effects.

Myrcene is the most abundant terpene found in cannabis. Together with caryophyllene, it works to ward off pain and inflammation. In a study of 2,032 human patients with 21 illnesses that included migraine, arthritis and chronic pain, cannabis high in myrcene and caryophyllene were the most preferred to relieve pain and inflammation. While this study was conducted on humans, it's still one of importance to mention.

### **HEALTHY HEMP PET COMPANY TERPENES:**

We strongly believe in full disclosure and are happy to share our terpene data. You can find additional details on our Certificates of Analysis section of our website.

Please keep in mind that before treating a life-threatening medical condition with terpene-rich hemp oil products, you are advised to check in with your pet's veterinarian, especially they are already taking prescribed medication. If you have additional questions regarding terpenes, please don't hesitate to contact us for more info.

### **SOURCES:**

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