

Marijuana and the Entourage Effect:



Marijuana and marijuana products are not approved by the U.S. Food and Drug Administration to treat, cure, or prevent any disease.

The **entourage effect** is a theory that proposes various compounds found in marijuana work together to create distinctive and effective benefits.

The marijuana plant contains **delta-9 THC**, and it is a **cannabinoid** (a chemical compound) that is associated with producing the effect that causes consumers to feel "high". However, there are many cannabinoids found in marijuana; not just delta-9 THC.

Recently, there has been increased focus on the additional **cannabinoids** (chemical compounds) contained in the marijuana plant as well as the marijuana's **terpenes** (or essential oils) and how they may produce the effects and benefits that a consumer experiences when using marijuana and marijuana products.

The theory that the whole plant is greater than its parts is referred to as the "**entourage effect**." **This theory proposes that various compounds found in marijuana work together to create distinctive and effective benefits.**

How many cannabinoids are in marijuana?

- o Over **100 cannabinoids** have been identified.

What are some of the other cannabinoids found in marijuana?

|Common Cannabinoids-Not A Complete List|

CBA or Cannabidiolic Acid
CBC or Cannabichromene
CBD or Cannabidiol
CBG or Cannabigerol
CBN or Cannabinol
CBDV or Cannabidivarin
THC or Tetrahydrocannabinol
THCA or Tetrahydrocannabinolic Acid

In this document, we will provide a chart to breakdown the therapeutic effects reported by some consumers with respect to the various cannabinoids consumed.

Cannabinoids & Reported Therapeutic Effects:

| Digestive & Eating Disorders |

Antibacterial: CBD
Antimicrobial: CBD
Anti-nausea: CBD, THC
Antioxidant: CBN, THC
Appetite Stimulant: THC

| Neurological & Psychiatric Ailments |

Anti-anxiety: CBD
Antidepressant: CBD, THC
Antiepileptic: CBD
Antipsychotic: CBD
Antispasmodic: CBD, CBN, THC, THC-A
Neuroprotective: CBD

| Pain & Sleep Issues |

Anti-inflammatory: CBC, CBD, CBG, CBN, THC-A
Pain relief: CBC, CBD, CBN, THC
Sleep Aid: CBN
To Combat Sleep Apnea: THC

| Other Ailments & Issues |

Allograft Stimulant (to reduce organ transplant rejection): CBD
Antidiabetic: CBD
Immunosuppressive: CBD
Antipsychotic: CBD
Psoriasis Aid: CBD
To Impede Tumor Cell Growth: CBD

***This is not an inclusive list.**

What are terpenes?

When it comes to marijuana, cannabinoids are not the only compounds that can determine the effects of a particular strain of marijuana. **Terpenes** are naturally occurring compounds that are found in plants (and even some animals).

Terpenes are the essential oils that are responsible for the fragrance and flavor of that plant, including marijuana.

Approximately **200 terpenes have been found in marijuana**. However, terpenes are found in many non-marijuana products, like perfumes and cleaning products.

Terpenes in marijuana make certain strains smell and/or taste differently than other strains. In addition, they also work in conjunction with cannabinoids in marijuana to boost the therapeutic benefits of one another, thus enhancing the effects or benefits for the consumer.



Terpenes are the primary components of essential oils. They are responsible for the aromas in many consumer products, including strains of marijuana.

Common Terpenes Found in Marijuana & Reported Therapeutic Effects:

Terpene Name	Reported Therapeutic Effects:	Aromas & Flavors
Caryophyllene	Neuroprotective, anti-inflammatory	Cedar, oregano, black pepper
Limonene	Anti-anxiety, antidepressant, gastro-protective	Citrus, juniper, peppermint
Linalool	Sedative, anticonvulsant	Citrus, flowers
Pinene	Antibacterial, anti-inflammatory	Pine, rosemary
Nerolidol	Antifungal, sedative	Berries, flowers, pine
Humulene	Appetite suppressant, pain relief, anti-inflammatory,	Earth, wood
Myrcene	Antidepressant, sedative, muscle relaxant, pain relief	Cloves, musk, tropical fruit

Marijuana is much more than its delta-9 THC potency. It is recommended that consumers should focus on the cannabinoid and terpene profiles found in marijuana; not just its delta-9 THC potency.

If you are considering consuming a marijuana product, remember the “entourage effect**” and ask yourself these two (2) questions:**

1. What ailments/issues do I wish to treat, and what **cannabinoids and terpenes that can best assist with these ailments/issues?**

2. What are the desired effects that I wish to experience from a marijuana product?

Don't forget: When you visit a local Montana marijuana dispensary, you may always inquire with the staff.

Sources:

- o **Book:** [*Small Bites for the Modern Cannabis Kitchen*](#) (Hua, S. and Carroll, C., 2019)
- o **Website:** <https://bloommedicinals.com/cannabis-education/what-gets-you-high-thc-or-terpenes/>
- o **Website:** <https://finestlabs.com/cannabis-terpenes-entourage-effect/>
- o **Website:** <https://www.nccih.nih.gov/health/cannabis-marijuana-and-cannabinoids-what-you-need-to-know>