

# The ABCs of CBD

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<https://stillwater.life>



# About Stillwater

We are **a food company focused on cannabinoids,**  
not a cannabis/hemp company that's discovered food.

STILLWATER

R&D run by former **senior food scientist at Mars** with 20 years' experience leading new product development groups.

**Manufacturing** run by **long-time floor leaders** at Safeway's national milk production facility.

STILLWATER



## **Consumer Branded Goods**

Our B2C arm produces some of Colorado's leading THC- and CBD-infused edibles brands, including Ripple Dissolvables, Stillwater Gummy Supplements, and Stillwater Beverages.

<http://stillwaterbrands.life>



## **Commercial Ingredients**

Our B2B arm supplies clean-label, shelf-stable formulations of water-soluble cannabinoids to a select set of food and beverage manufacturers.

<http://stillwateringredients.life>

# Cannabis vs. Hemp

# It's a **legal** distinction, not a horticultural one.

## 1. **Cannabis**

*Cannabis sativa* cultivars grown for medicinal or recreational purposes with THC concentrations of **greater than 0.3%** by weight.

## 2. **Hemp**

*Cannabis sativa* cultivars grown for a variety of purposes — primarily fiber, seed, or extract oil — with THC concentrations of **less than 0.3%** by weight.

# *Cannabis sativa* vs. Cannabinoids

# Chemical constituents of *cannabis sativa*.

## 1. Cannabinoids

A diverse set of **bioactive compounds** produced by the cannabis plant that interact with receptors in the body's **endocannabinoid system (ECS)**.

## 2. Terpenes

A set of organic compounds produced by the cannabis plant (and many others). The terpenes produced by cannabis are **no different** from the terpenes produced by other plants for use as essential oils and aromas.



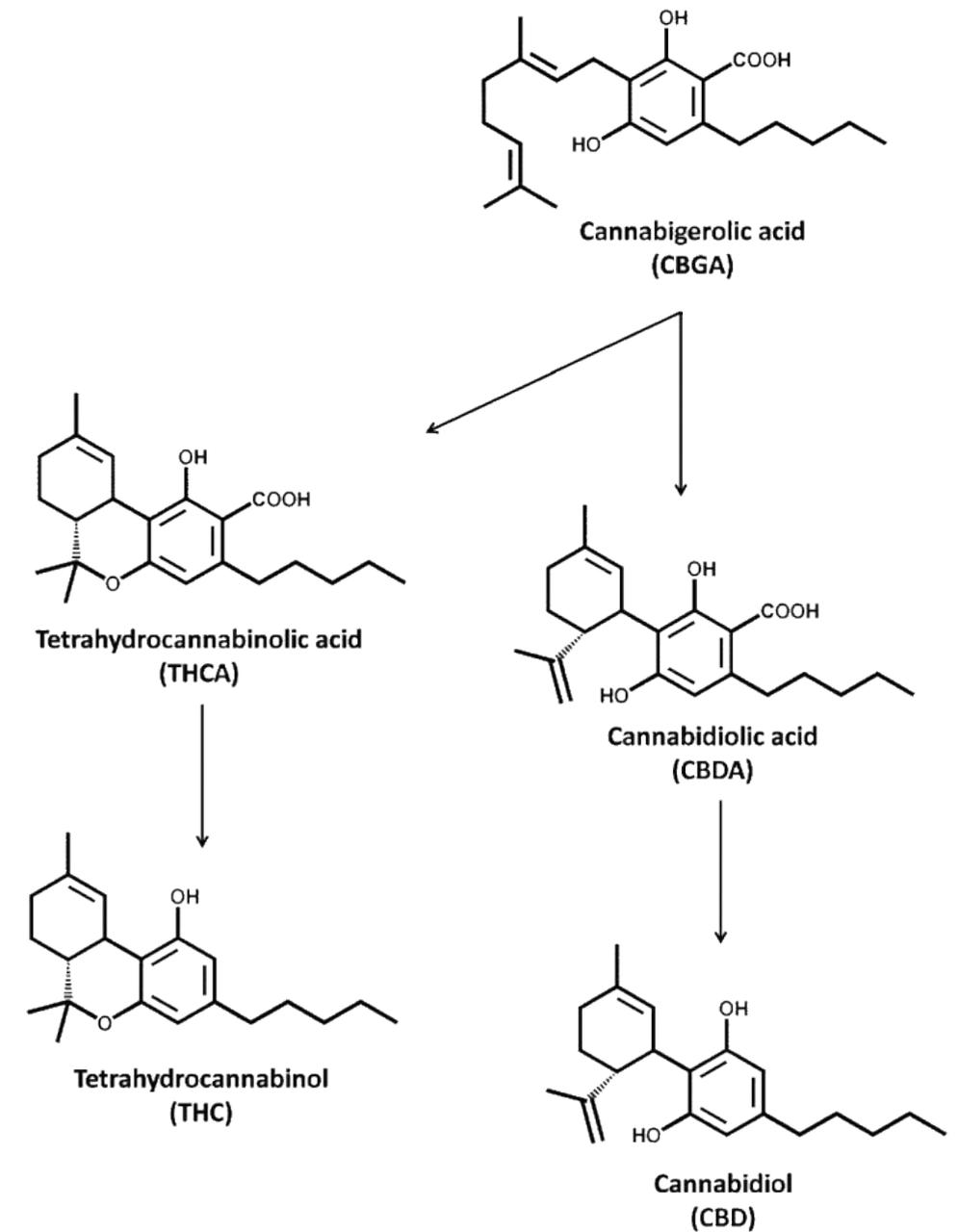
# Principal cannabinoids.

## Tetrahydrocannabinol (THC)

- The principal **psychoactive** constituent
- Derived primarily from “marijuana”
- Provides the famous “high”

## Cannabidiol (CBD)

- The principal **non-psychoactive** constituent
- Derived primarily from “hemp”
- Associated with general wellness



# Potential claim areas (CBD).\*

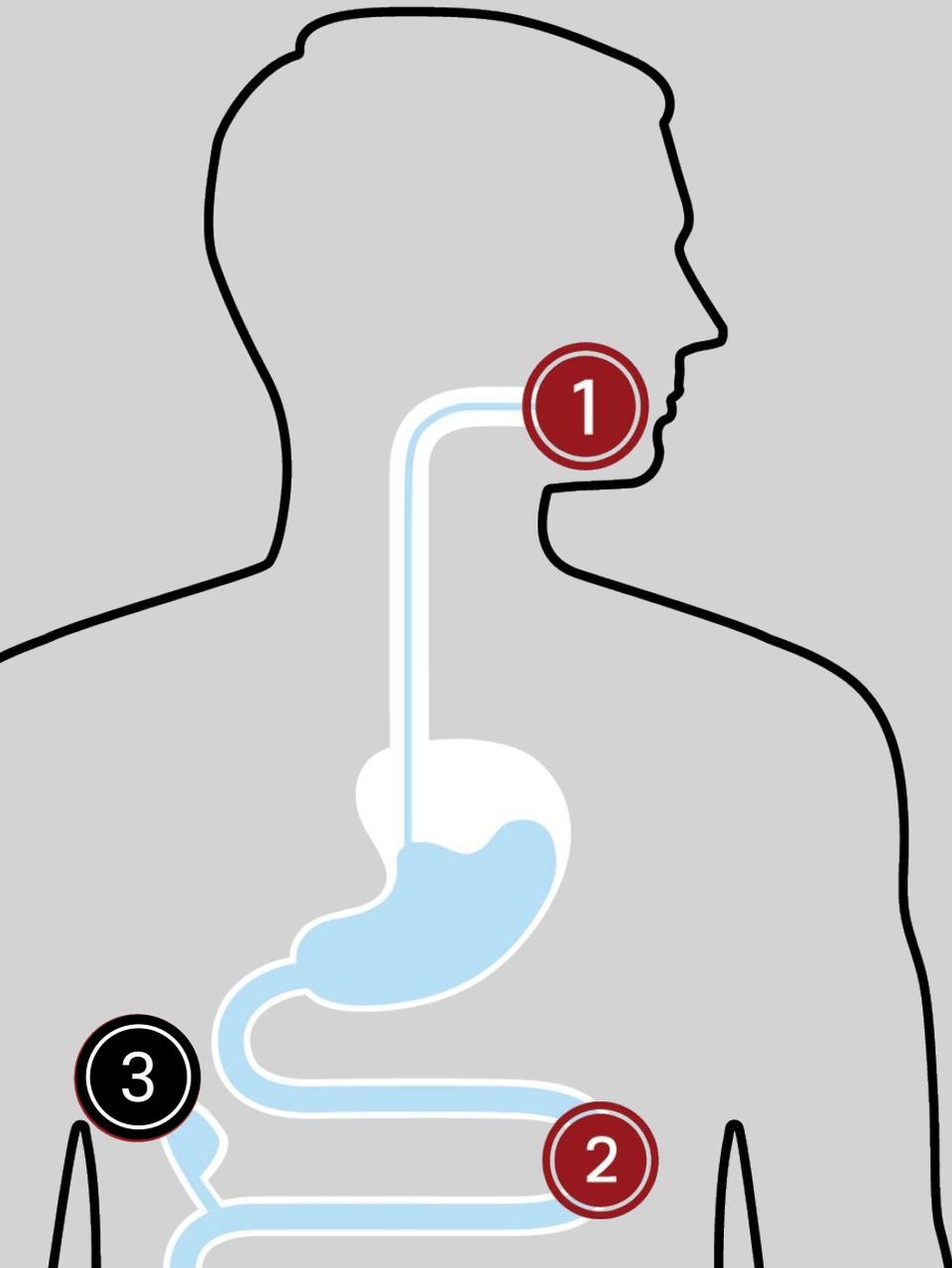
*\* For the love of God, don't take my word for it.  
Do your own diligence.*

- Stress and tension relief
- Mood enhancement
- Pain relief (muscles and joints)
- Athletic recovery (anti-inflammatory)
- Women's wellness (cramps and headaches)

Basically, **make ageing suck less.**

Why **water-soluble?**

# Pathways of cannabinoid absorption.



**1. Sublingual**  
10-minute onset (approx.)

**2. Intestinal**  
45-minute onset (approx.)

**3. Hepatic**  
90-minute onset (approx.)

water-soluble

water-insoluble

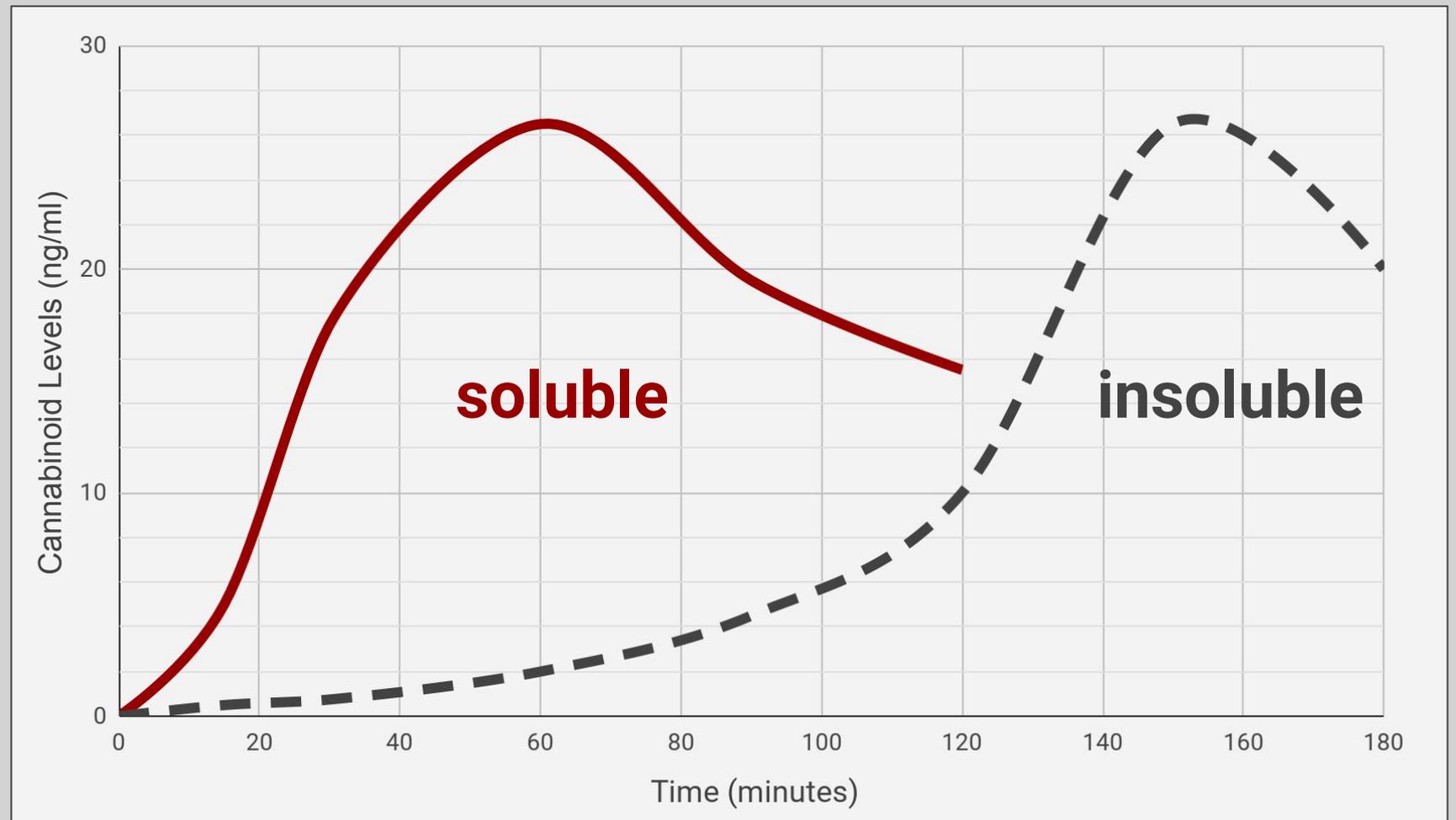
# Solubility allows for fast/consistent absorption, promotes consumer trust.

## Rapid onset

- *“This is working.”*
- *“I’m in control.”*

## Pre-hepatic absorption

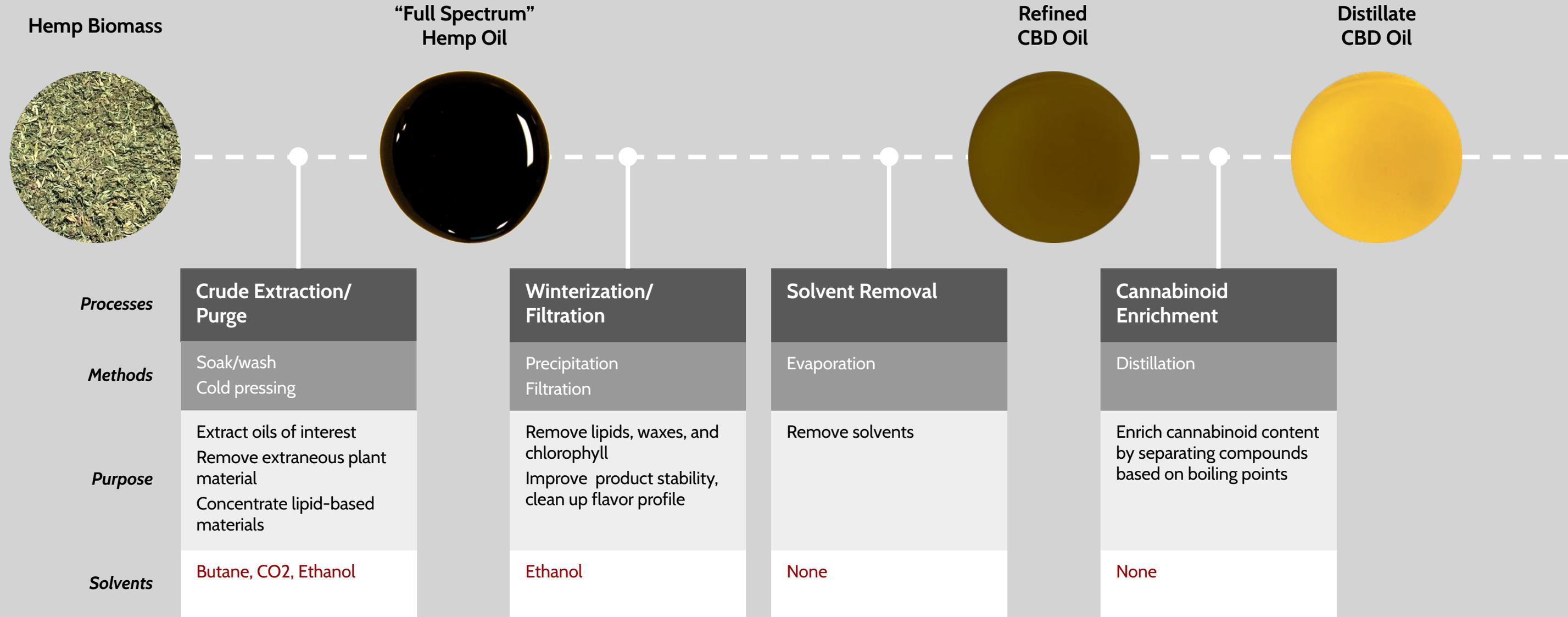
- *“This is consistent.”*
- *“I can trust this.”*



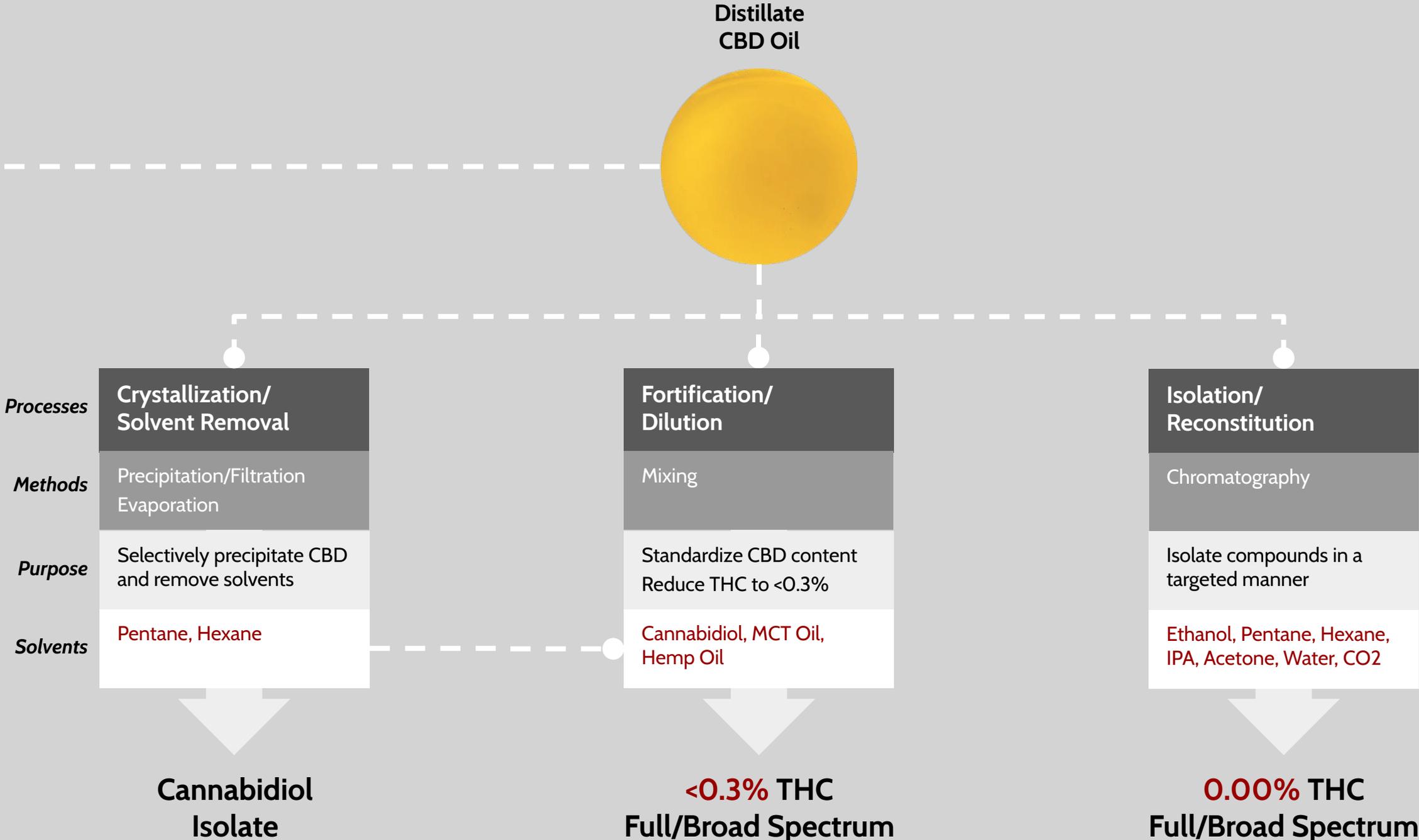
CBD refinement:

processes and products

# Intermediate processes.

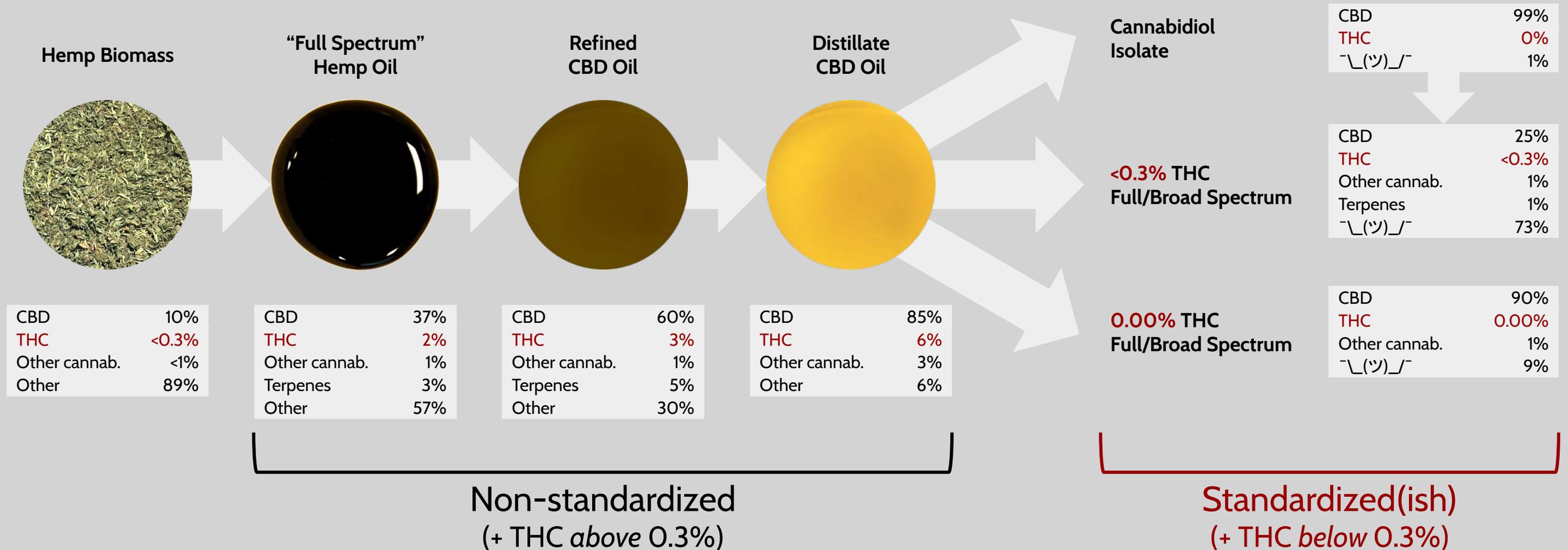


# Intermediate processes (cont'd).



# Intermediate products.\*

\* Contents are approximations.  
Composition will vary by manufacturer and batch.



**Risk** vectors

# It's about **more** than regulatory risk.

## Quality risk

- Ambiguous terms applied to variant materials (**no Standards of Identity**)
- Full/Broad Spectrum = **uncharacterized compositions**
- **Consistency** in all forms is a challenge

## Procurement risk

- The further you get from isolate, the more **unknowns** you must accept
- Existing **quality programs** and certifications often shallow
- When it comes to scaling, **far more promises than fulfillments**

## Business risk

- Cowen: **6.9% of consumers use CBD as a supplement** vs. 4.2% who use Juul
- Flip side: **FOMO** is a helluva drug
- Cost vs. claim: **what's the tradeoff?**

*“I need a standardized, THC-free full spectrum CBD oil.”*



*“I need a submarine made of cheese.”*

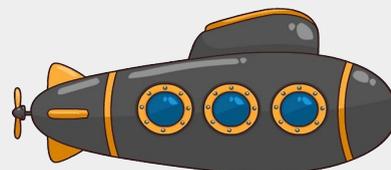
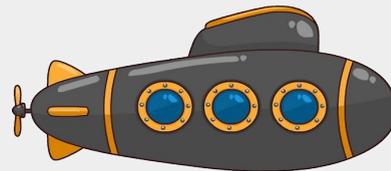
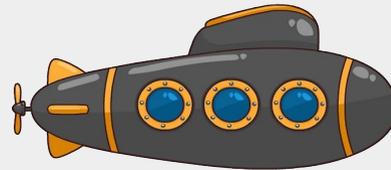
# Don't miss the forest for the **cheese**.

Quality risk

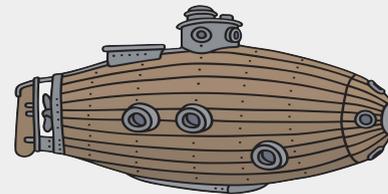
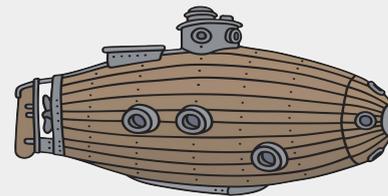
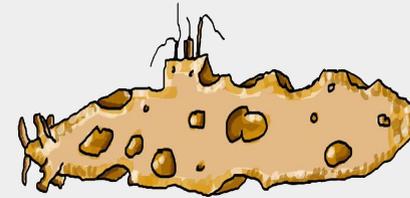
Procurement risk

Business risk

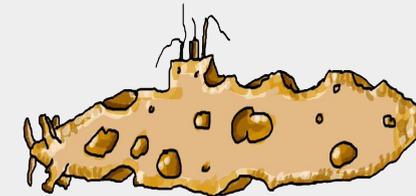
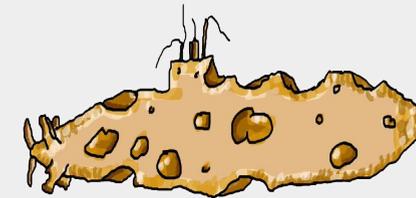
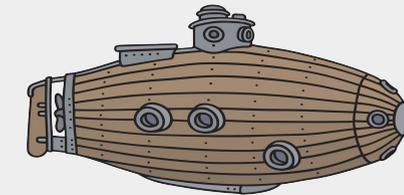
Cannabidiol  
Isolate



<0.3% THC  
Full/Broad Spectrum



0.00% THC  
Full/Broad Spectrum



# Further considerations.

## Labeling

- Prevailing terminology inappropriately conveys a sense of **authenticity and virginity**
  - *cf.* Extra Virgin Olive Oil
- Which labeling standards (if any) does the vendor follow?
  - **Over-liberal use of “natural flavors.”**

## Process

- Are production SOPs being adhered to? **How is consistency quantitated?**
- Are equipment maintenance, duty cycle, and cleaning SOPs being followed?

## Other

- Lots of PK and efficacy claims based on weak data. **Check the receipts.**
- Lots of claims based on  $\neg \setminus (\text{ツ}) \_ / \neg$ . **Check the damn receipts.**
- What's the supply chain look like? **Verify upstream links.**

Many players have grown comfortable working in an under-regulated environment.  
**Take no one at their word. Verify, then trust.**

Questions?

