



Potency on the Label

- Potency is most often referred to as Total THC
- Each number plays a part in the way the product works
- Potency describes the quantities of the main active ingredients of cannabis products

<u>Potency Profile</u>	<u>Terpene Profile</u>
Total THC: <u>79.00%</u>	Total Terpenes: 2.50%
Total CBD: 0.13%	Caryophyllene: 0.55%
Total THCA: 82.00%	Humulene: 0.17%
Total Cannabinoids: 92.00%	Linalool: 0.09%



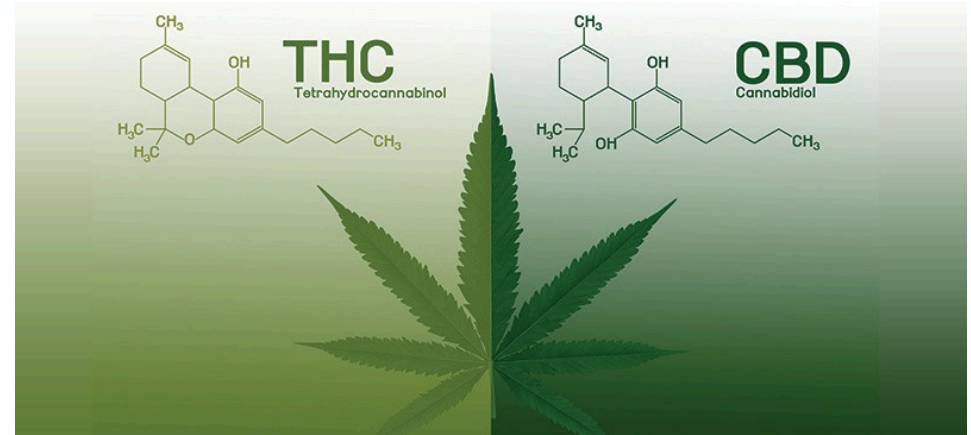
Potency (Cannabinoid Concentration)

- 4 Raw Components:

1. Δ^9 -THC-A
2. Δ^9 -THC
3. CBD-A
4. CBD

- 2 Computed Components:

1. Total THC = (Δ^9 -THC-A)*(0.877) + Δ^9 -THC
2. Total CBD = (CBD-A)*(0.877) + CBD





Plainly Speaking

- Cannabinoids are the molecules made specially by cannabis
- Potency is a combination of multiple different cannabinoids
- Potency gives consumers an idea of the strength and reaction of the product
- A lot of research is still needed to understand the true implications of the active ingredients in cannabis on humans



Testing for Potency

- Potency does NOT Pass or Fail
- Measuring quantities of cannabinoid concentrations
 - Most states require THC, THCA, CBD, and CBDA
 - AK, CO, MD, and NV require the above 4 + CBN
 - MD also requires all 5 above + CBG
- Use **High Performance Liquid Chromatography (HPLC)** to analyze samples





Testing for Potency – Challenges (Hot Topic)

- No Current Standard Method for Determination of Potency
 - Cannabis Science Task Force – Potency Work Group
- Agricultural products change over time, marijuana is no different
 - CR-102 of WAC 314-55-102 adds 1 year sunset on COA's
- Accuracy and Precision of Results
 - Sampling
 - Homogenization
 - Testing Methods





Comparison to Alcohol

Potency (Cannabinoid Concentration)

- Measured Concentrations
- Does NOT Pass or Fail
- **2 Active Ingredients** (THC and CBD)
- **Many modes of consumption**

Alcohol by Volume (ABV)

- Measured Concentration
- Does NOT Pass or Fail
- **1 Active Ingredient** (Ethanol)
- **1 Common mode of consumption**





How Potency Affects Us

- Concentrations allows customers and patients to make informed decisions about products being purchased
- Consumption route differences change metabolic pathways of humans
 - Smoking will give a different high compared to eating cannabis
 - Vaporizing displays different attributes compared to smoking
- THC and CBD modulate each others affects¹
 - e.g. 10 mg of THC will give a different affect than 10 mg THC w/ 10 mg CBD



Useable Marijuana

- "Useable marijuana" means dried marijuana flowers consistent with RCW [69.50.101](#)(ww). The term "useable marijuana" does not include either marijuana-infused products or marijuana concentrates.
- Useable Flower
- Other Plant Material
- Pre Rolled Joints





Useable Marijuana

- Typically smoked
- Useable flower averages ~20% Total THC
- ~55% of market volume





Marijuana Concentrates

- "Marijuana concentrates" means products consisting wholly or in part of the resin extracted from any part of the plant *Cannabis* and having a THC concentration greater than ten percent, consistent with RCW [69.50.101](#)(z).
- Hydrocarbon
- CO₂
- Food Grade
- Non Solvent
- Infused Cooking Oil / Fat





Marijuana Concentrates

- Typically smoked, vaporized, and ingested
- Range in Total THC: 10% - 99%
- ~35% of market volume





Marijuana Infused Products

- "Marijuana-infused products" means products that contain marijuana or marijuana extracts, are intended for human use, are derived from marijuana as defined in subsection (y) of this section, and have a THC concentration no greater than ten percent. The term "marijuana-infused products" does not include either useable marijuana or marijuana concentrates.



Marijuana Infused Products

- Edibles (Up to 10 mg/serving)
 - Cookies
 - Brownies
 - Candies
 - Mints
- Others
 - Tinctures
 - Capsules
 - Transdermal





Marijuana Infused Products - Edibles

- Edibles are eaten or drank
- No greater than 10 mg / serving
- ~10% of market volume





Marijuana Infused Products - Others

- Many other modes of ingestion for Others:
 - Dermal
 - Suppository
 - Inhalers
 - Sublingual

- No greater than 10% Total THC

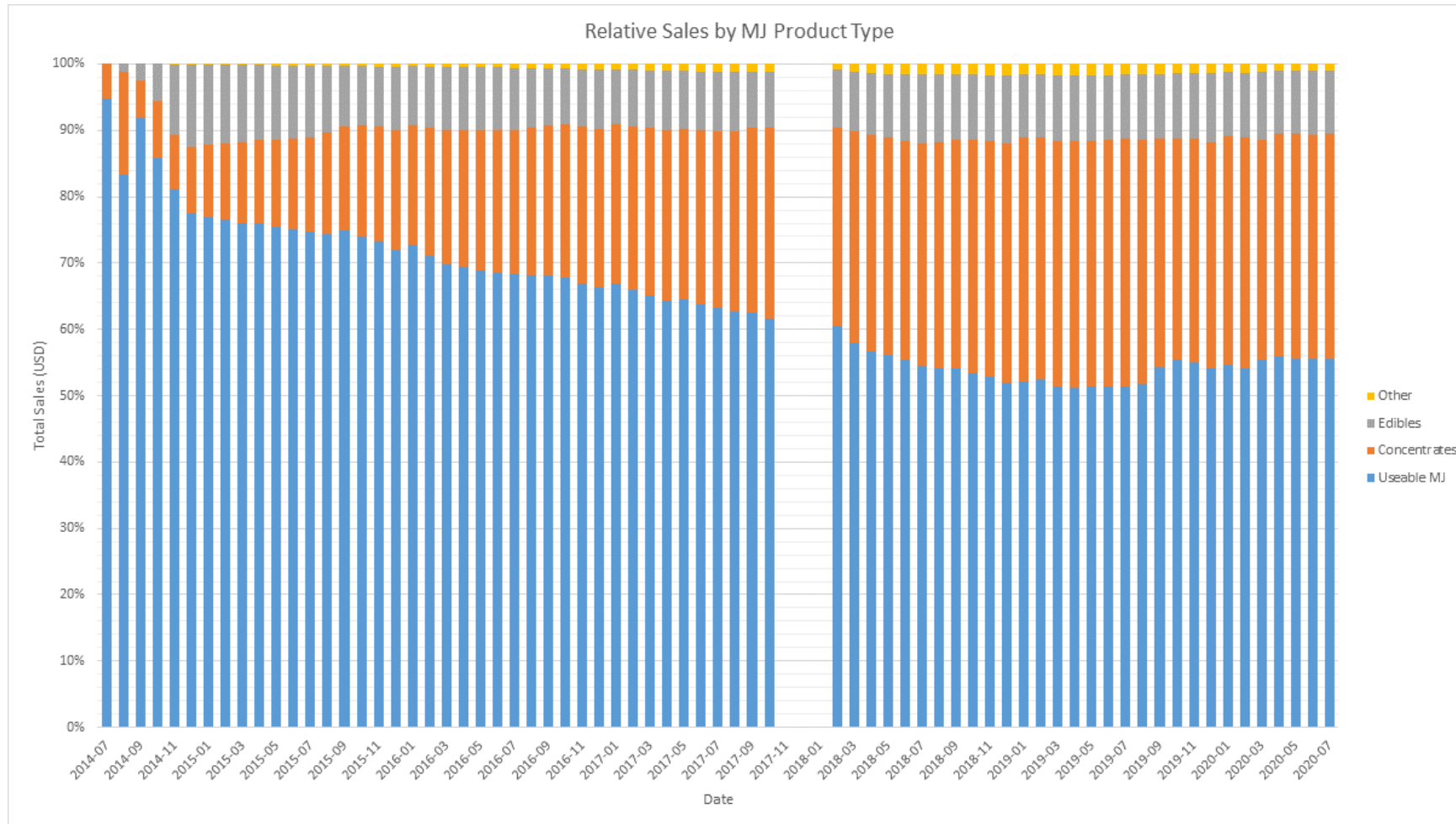
- ~1% of market volume





Market Share

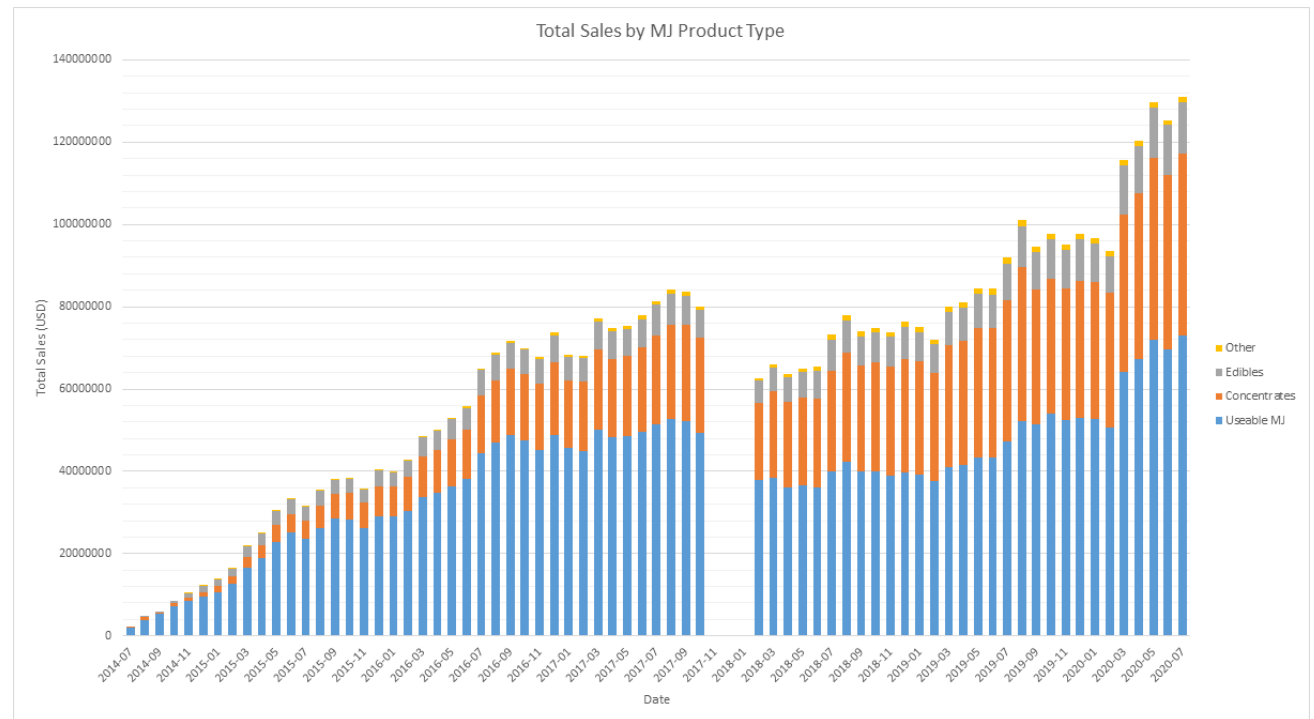
- Useable marijuana is decreasing
- Concentrates is increasing
- Leveled off at 55% and 35%, respectively
- Edibles maintain 10%





Sales Volume

- July 2020 up 42% Year Over Year to 2019
- COVID-19 has markedly increased sales





Questions?