Whole Plant Edibles: Harnessing The Power of Cannabis

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Introduction:

The synergistic effects of phytocannabinoids and phytoterpenes, commonly known as the "entourage effect," promise novel therapeutic applications. These effects are of increasing interest in medical and academic research, as well as in adult-use products. As such, and to avoid the health conflicts inherent in inhalation, there is a need for a scalable, efficient, and efficacious methods of producing ingestible products that preserve the phytocannabinoid and phytoterpene fingerprint present in cannabis inflorescence. Azuca is developing a product and process called Whole Plant Activator® which encapsulates that inflorescence's fingerprint, rendering the whole plant into a doseable ingredient for downstream ingestible applications.

Methods:

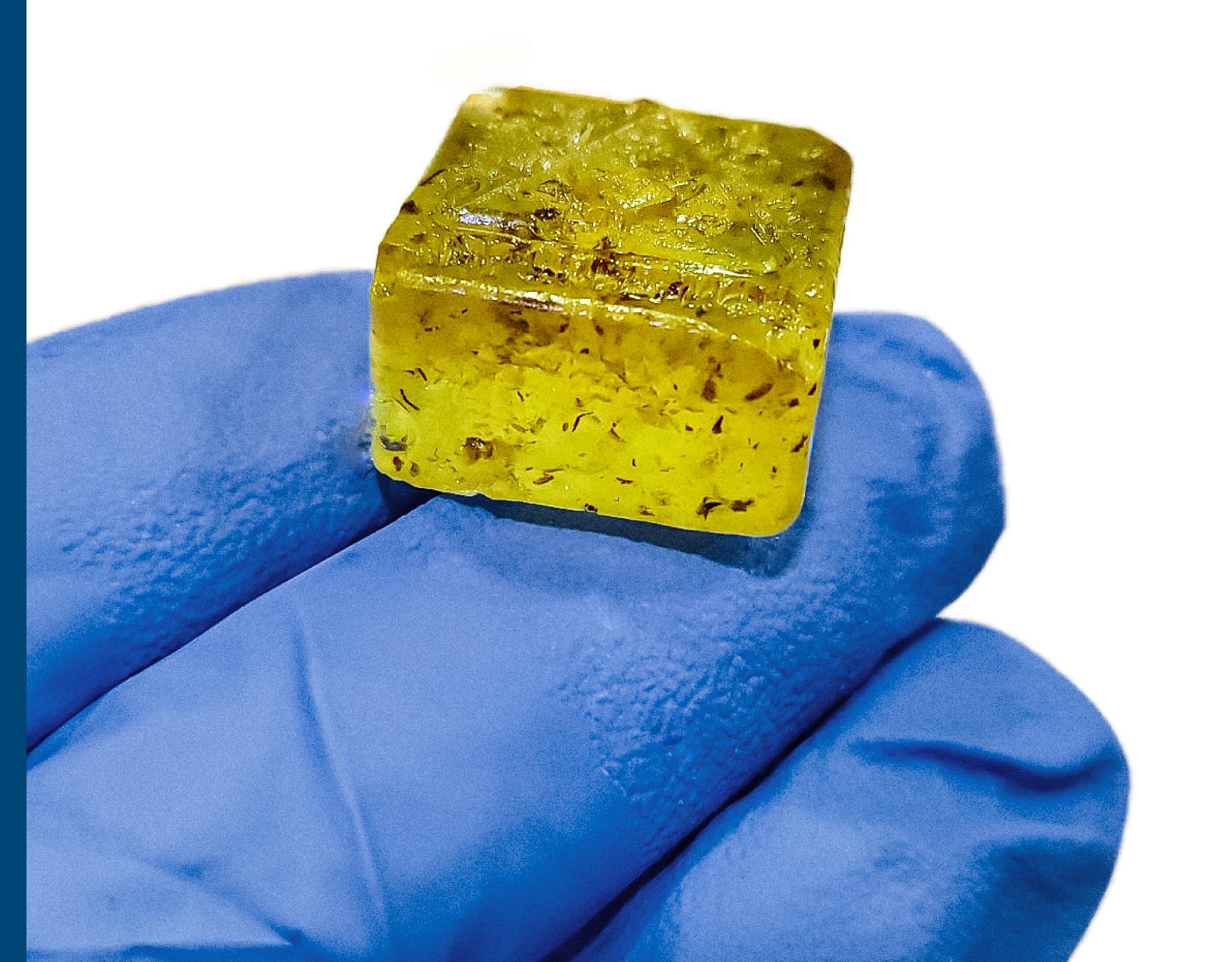
- •Cured, whole plant cannabis was prepared and processed using Azuca's proprietary Whole-Plant Activator®.
- •The entire infusion process takes 1 hour and utilizes a small table-top mixer with a 14inx20in manufacturing footprint.
- •Samples of materials were analyzed for cannabinoid (HPLC) and terpene content (GC).

Results:

- •Samples retained primary cannabinoids and terpenes during processing. Results remain consistent with biomass included or filtered from the infusion.
- •Terpenes preserved are abundant enough to create an appealing natural flavor in final products.
- •Self-reported, sensory feedback indicates a fast-acting effect.
- •No intermediate extraction process was required; no ethanol or hydrocarbons, the only solvent used in this process is water.



Whole-Flavor Whole-Spectrum Whole-Plant Edibles





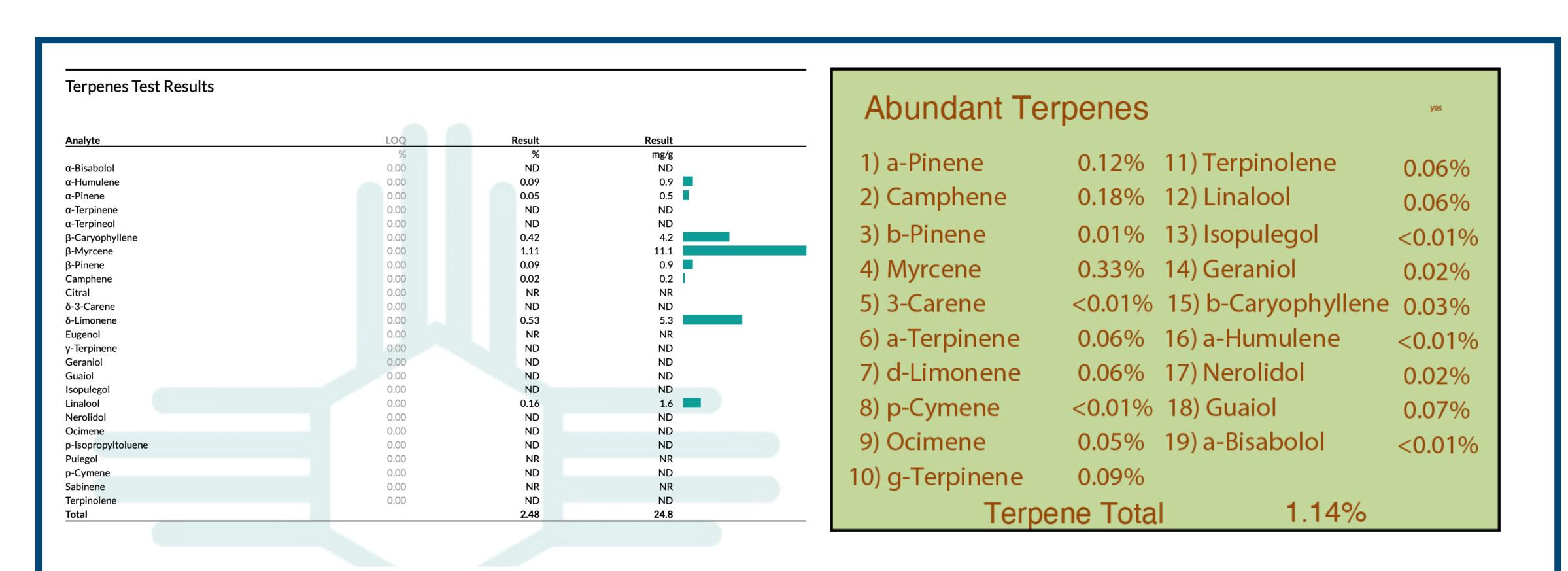




Decarboxylated Flower			Dilution Corrected, Whole Plant Infusion - Dried		
Analyte	%		Analyte	%	· · · · · · · · · · · · · · · · · · ·
THCa		0.25	THCa		0.3857
d9-THC		22.02	d9-THC		19.5692
CBD		1.37	CBD		0.6496
CBN		<0.01	CBN		0.3045
CBG		0.89	CBG		0.7714

Material produced with Whole-Plant Activator® shows retention of dominant phytocannabinoids and phytoterpenes throughout process.

Decarboxylated Flower		Whole Plant Infusion - Dried		Filtered Whole Plant Infusion - Dried	
Analyte	%	Analyte	%	Analyte	%
Myrcene	15.64	Myrcene	24.96	Myrcene	24.54
a-Pinene	25.33	a-Pinene	38.59	a-Pinene	36.57
Limonene	19.68	Limonene	11.82	Limonene	10.96
b-Pinene	11.05	b-Pinene	12.19	b-Pinene	13.42
Linalool	3.15	Linalool	0	Linalool	0
Carene	1.01	Carene	2.57	Carene	2.65
Citronellol	3.32	Citronellol	5.82	Citronellol	9.86
Cymene	4.66	Cymene	0	Cymene	0
a-Terpinene	0.26	a-Terpinene	0	a-Terpinene	0
Humulene	1.27	Humulene	0	Humulene	0
Nerolidol	1.46	Nerolidol	0	Nerolidol	0
Geraniol	0	Geraniol	0	Geraniol	0
d-Menthol	0	d-Menthol	0.98	d-Menthol	1.17
Isopulegol	0.35	Isopulegol	0	Isopulegol	0
b-Caryophyllene	12.81	b-Caryophyllene	3.06	b-Caryophyllene	0.85
Ocimene	0	Ocimene	0	Ocimene	0
Dihydrocarveol		Dihydrocarveol	0	Dihydrocarveol	0
Pulegol	0	Pulegol	0	Pulegol	0
Camphene	0	Camphene	0	Camphene	0
Borneol	0	Borneol	0	Borneol	0
Bisabolol	0	Bisabolol	0	Bisabolol	0
Terpinolene	0	Terpinolene	0	Terpinolene	0
2-Piperidone	0	2-Piperidone	0	2-Piperidone	0
Euginol	0	Euginol	0	Euginol	0
a-Terpineol	0	a-Terpineol	0	a-Terpineol	0
d-Carvone	0	d-Carvone	0	d-Carvone	0



Terpene analysis in the final gummy show they are abundant enough to provide flavor for the gummy. However, there remain challenges with consistency among testing labs.

