

## Case Study

# Botanical Breakthroughs:

Unlocking Flavor Innovation for  
**Beverage Reformulation** &  
**Market Leadership**



## Client's Objective

The client sought to explore innovative botanical flavors in beverages, focusing on extracting the flavor of botanicals & infusing the essence directly into beverages for enhanced taste profiles. The key challenges they faced were related to flavor stability, intensity, and color retention.

## Our Strategic Approach

To help the client navigate this emerging trend, we adopted a multifaceted approach that included research, competitive analysis, and collaboration opportunities.

### Comprehensive Botanical Flavor & Ingredient Analysis:

- We identified the most innovative botanical ingredients from both R&D and commercially successful sectors through a comprehensive investigation.
- The analysis involved categorizing key botanicals with unique flavor profiles based on their suitability for different beverage segments, such as energy drinks, sports drinks, protein drinks, and sparkling water.

### Competitive Landscape & Industry Trends:

- We analyzed the competitive landscape, identifying key players successfully integrating botanical flavors into their products along with highlighting their strategies and market positioning.
- We provided a detailed understanding of how major beverage brands are currently leveraging botanical flavors and how they can differentiate their product offerings.











### Partner Identification & Extraction Technology:

- We identified a few best-fit partners for the client, focusing on novel extraction technologies that could effectively capture and preserve the full spectrum of botanical flavors.

# Snippet

## Executive Summary – Major Challenges & Solutions

Beverage manufacturing brand owners are leveraging various technologies provided by technology providers to address critical challenges related to flavor, color, stability, solubility, and aroma when utilizing botanical ingredients

Solutions	 <b>[Australia]</b> <b>Technology:</b> Spinning Cone Column <b>Solution:</b> It is used by food and beverage manufacturers to naturally extract the best flavors and aromas from a wide range of products including fruit and vegetables, <b>herbs</b> etc.	 <b>[US, UK]</b> <b>Technology:</b> Botanical extracts and essences can provide natural color, functionality, and full flavor profiles suitable for a range of taste preferences and align with the clean label megatrend.	 <b>[Indonesia]</b> <b>Technology:</b> Double Encapsulation <b>Solution:</b> Naturarte is created through the art of formulation, extraction and spray drying technology. The encapsulation technique prevents oxidation of delicate and volatile molecules which gives it a longer shelf life.	 <b>[US]</b> <b>Technology:</b> The solubility of many functional ingredients has previously limited their use within various foods and beverages, but they created water-soluble versions for easier application and development.	 <b>[Australia]</b> <b>Technology:</b> SCC100 Aroma Recovery Unit <b>Solution:</b> The SCC100 is used around the world for aroma recovery from botanical extracts.
	 <b>[England]</b> <b>Technology:</b> Chemical Fingerprinting <b>Solution:</b> Chemical fingerprinting is a useful tool for assessing the quality of raw materials used in the manufacture of extracts which deliver flavor in food & beverage.	 <b>[England]</b> <b>Technology:</b> Nano-filtration (from Beacon Wales) <b>Solution:</b> It is applied to remove color from botanical extracts while retaining bioactive in the preparation.	 <b>[US]</b> <b>Technology:</b> Spray Drying <b>Solution:</b> Provides custom formulations on an application basis that are unique to customers and their product requirements. Spray Drying offers: • Shelf stable product • Shelf life (1 year)	 <b>[US, UK]</b> <b>Technology:</b> Extracts and essences are water-based ingredients that retain, in a conc. form, the aroma fraction and other properties of the specific herb, spice, fruit, or vegetable it is directly obtained from. 100% natural & can easily be incorporated into beverage applications.	 <b>[England]</b> <b>Technology:</b> Ransom Naturals' botanical extracts are highly aromatic and tastes good in the food and beverages.
	Flavor	Color	Stability	Solubility	Aroma
	Challenges				

## Commercialized Solutions – An Overview

Companies in the APAC regions are using botanical ingredients for manufacturing juice and energy drinks, with India notably leading in the juice category, while the United States leads in protein drinks

Juice					Energy Drink				
Product	Botanical Source	Color	Customer Review		Product	Botanical Source	Color	Customer Review	
Tulsi (Basil) Immunity Drink	Basil	Green	Sweet & Having Medicinal Value		Men's Energy Drink	Ashwagandha, Shedheveli, Gokshura	Yellow	100% natural drink with 0 sugar <a href="#">[Link]</a>	India
Ashloe	Aloe vera, Ashwagandha Extract	Yellow	NA		Raisin Sakura Energy Drink	enXtra TM, Cherry Blossom	Pink	Just delicious <a href="#">[Link]</a>	Japan
Wheat Grass RTD Juice	Wheat Grass, Aloe Vera, Gloy, Tulsi, Ginger, Lemon	Green	Good for diabetes		Jinro Ginseng Energy Drink	Ginseng	NA	NA	Korea
Hardcore Green Juice	Kale, Spinach, Celery, Moringa, Parsley, Coriander, Basil, Fennel, Mint, Cucumber, Fenugreek, Amla, Turmeric, Ginger, Lemon, Beet Leaf	Green	Safe & Pure <a href="#">[Link]</a>		Cannabis Energy Drink	Hemp Seed Extract	Green	Coolest Energy Drink <a href="#">[Link]</a>	Austria
Fruit Juice, Aloe Vera	Basil seeds, Aloe Vera	Colorless	NA		Rune Guayusa Hibiscus Berry	Guayusa Leaves, Hibiscus	Red	NA	US
Hibiscus Juice	Hibiscus	Pink	NA		Green Tea and Herbs	Puncture vine, Scotch Cotton thistle, Ginkgo Biloba, Rooibos, Green Tea	NA	NA	UK
Moringa Superfood+	Moringa, Wheatgrass, Lime, Sugarcane Grass	Green	Love the whole concept of Bhoomi cane water! <a href="#">[Link]</a>		Blackberry Hibiscus Organic Chia Beverage	Hydrated Organic Chia Seeds, Hibiscus Extract	Purple	Delicious Juice <a href="#">[Link]</a>	US
Hazelnut Chocolate Plant Protein Elixir	Ashwagandha Extract, Maca Root Extract, Plant Protein, Pea, Sunflower & Hazelnut	Brown	Great tasting vegan drink! <a href="#">[Link]</a>						

# Impact

- **Actionable Insights for Beverage Reformulation:** The client gained a clear strategy for incorporating botanical flavors, with recommendations tailored to each beverage segment to meet consumer preferences and market demand.
- **Prioritized Key Botanicals:** The client identified high-impact botanicals for target beverage segments, ensuring they aligned with market trends and offered a competitive edge in flavor complexity and consumer appeal.
- **Collaborative Partnerships for Extraction Technology:** The client established partnerships with leading botanical extraction companies, securing access to advanced technologies that preserved flavor authenticity and supported scalable, sustainable operations.

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