Delivering authentic naturals in powder flavors.

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WHAT IS OUR MISSION

To create exceptional taste experiences never before possible in powder.
Nature is the gold standard
Spray drying requires 400º HEAT
HEAT IS THE ENEMY
Natural Flavors are Sensitive to Heat

**NATURAL FLAVOR BLEND**
- Limonene, 83.6%
- Citral, 5.5%
- Cinnamaldehyde, 5.5%
- 2-Hexenal, 5.5%

**HIGH TEMPERATURE SPRAY DRIED POWDER**
- Limonene, 67.3%
- Citral, 3.9%
- 2-Hexenal, 3.2%
- Cinnamaldehyde, 3.0%
- Limonene Oxides, 2.7%

20% FLAVOR LOSS

Source: J Agric Food Chem 2009 57 2486-2492
Temperature Impacts on Natural Color

Innovation Gap

1872  Spray Drying  143 year Gap  2008  Zooming Patents  2019

Zooming® Technology Snapshot
**Powder: Heat is the Enemy**

**CoolZoom® Powder**
- Larger particles
- Fully dense
- Low Surface Oil (better stability)

**Spray Dry Powder**
- Smaller particles
- Hollow sphere
- High Surface Oil (leads to faster oxidation)

- **Evaporation stage**: Heat is applied to the droplets, causing the solvent to evaporate.
- **Diffusion stage**: The heat continues to diffuse through the material, leading to further evaporation and phase changes.
- **Heating stage**: The final stages of heating where the material reaches its final form.

- **Droplet temperature**
- **Solids %**
Our Powder vs The Other Guys

Spray Dry Powder
- Smaller particles
- Hollow sphere
- Large surface area

CoolZoom® Powder
- Larger particles
- Fully dense
- Greater protection
Zooming® Delivers Nature’s Fingerprint

% Composition

- a-Pinene
- b-Pinene
- Sabinene
- Myrcene
- Limonene
- g-Terpinene
- a-Terpinolene
- a-Bergamotene
- Geranial
- Nerol

Lemon Oil
Zooming® Delivers Nature’s Fingerprint

Lemon Oil
Lemon CoolZoom

% Composition

- a-Pinene
- b-Pinene
- Sabinene
- Myrcene
- Limonene
- g-Terpinene
- a-Terpinolene
- a-Bergamotene
- Geranial
- Nerol
Zooming® Delivers Oleoresins and Extracts

% Composition

Pepper Oleoresin
Zooming® Delivers Oleoresins and Extracts
Formulating Benefits of CoolZoom® powder flavor

- Great Taste & Aroma
- Retained Cost Savings
- Cool Process
- Incredible Solubility
- Enhanced Stability
Zooming® gives your brand the flavor nature intended.