



**ROOTS
FORMULATIONS**



Innovations in Nutrient Protection by Newer Technologies

Dr Manutosh Acharya

CTO at Roots Formulations

Challenges Related to Active Dietary Ingredients & Flavours



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Heat Sensitivity
during processing



Oxidation
and exposure to light



Moisture
related degradation



Taste
and odor challenges



Interactions
Within other formulation
ingredients



Poor solubility
and dispersibility



**Variable
Release**
And absorption pattern



Shelf Life
Loss of potency

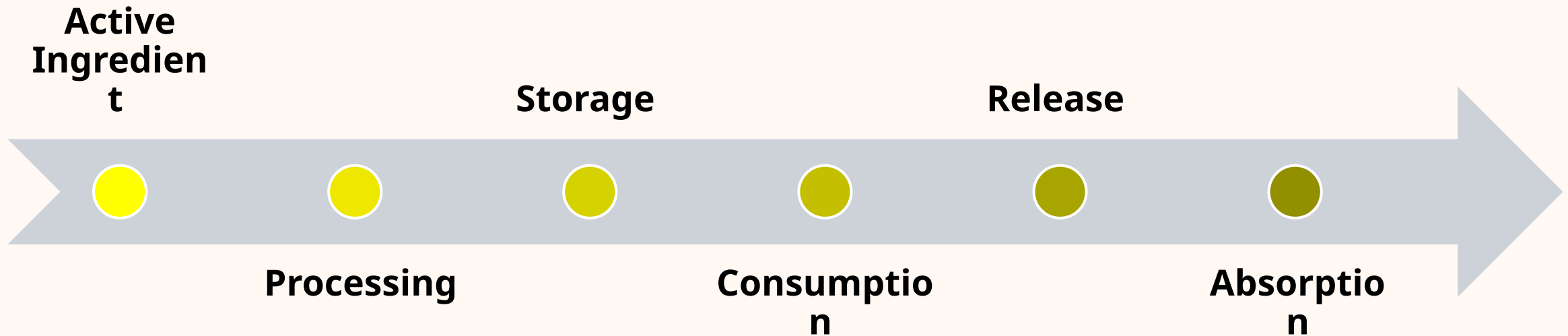
Active Ingredient Retention from Process to Bioavailability



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Nutritional & Flavour efficacy depends not just on how much active is added, but on how much remains effective



What Are We Trying to Protect?



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Carotenoids



Botanical Extracts



Vitamins



Flavours



Probiotics / Enzymes

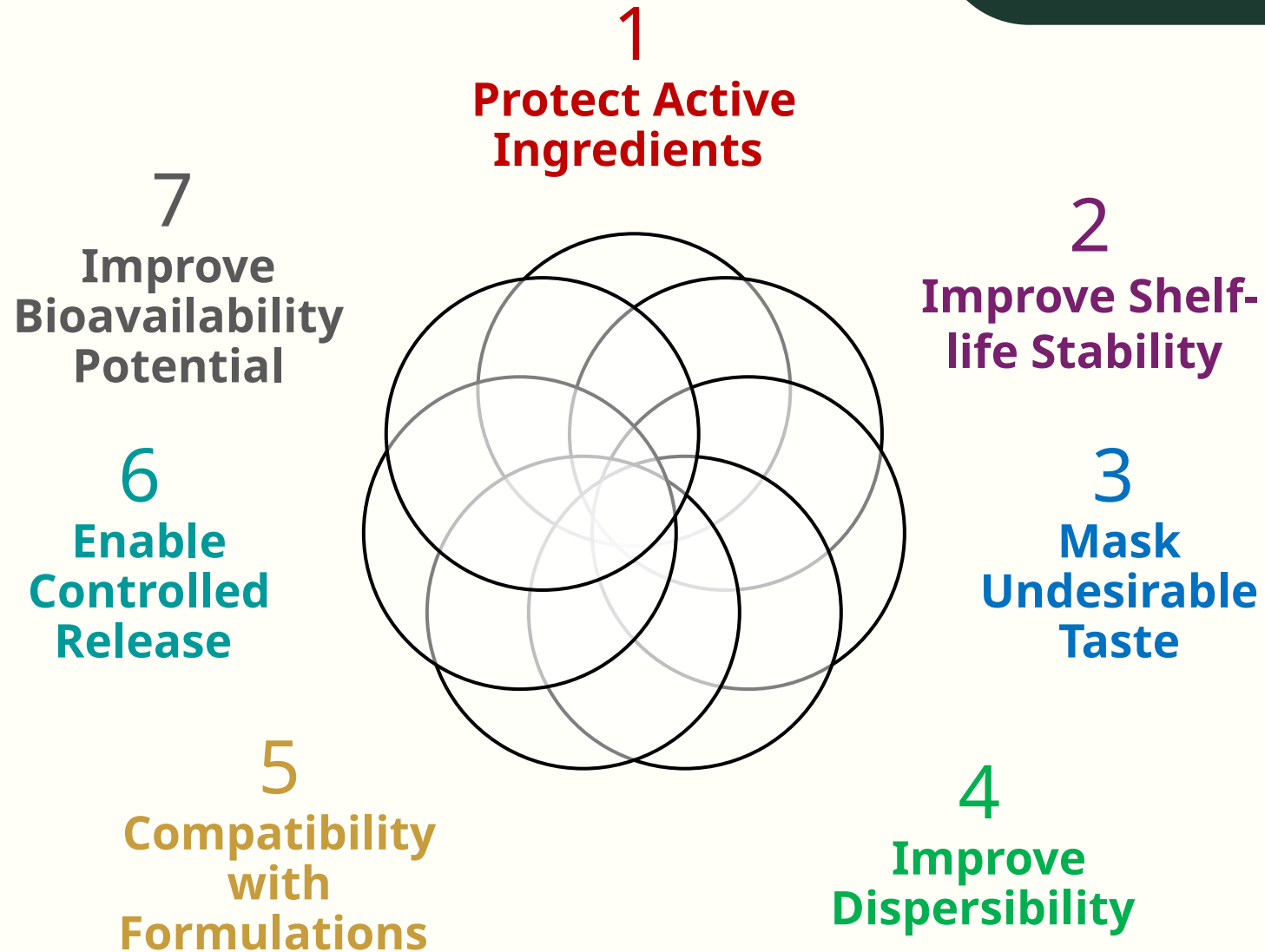


**Functional Oil &
Lipophilic
ingredients**

What We Want to Achieve?



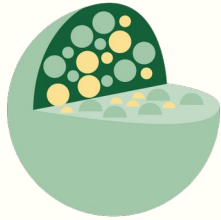
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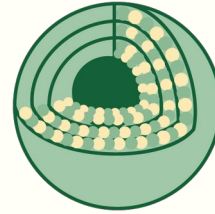
Technologies to convert active ingredients in modern formats



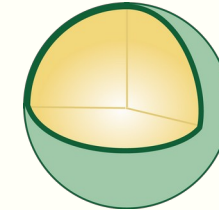
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**Macro
Encapsulation**



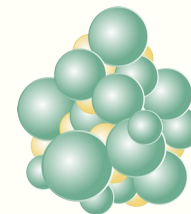
**Bottom Spray
Coating**



**Coating and
Powder Layering**



**Top Spray
Granulation**



**Agglomeration /
Wet Granulation**



**Extrusion and
Spheronization**

SPRYFORM™ Technology



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SPRYFORM™ is an **advanced encapsulation and delivery platform** developed to optimize ingredient functionality.

It supports multiple release mechanisms, ensuring the right performance for diverse formulation requirements. The system enhances stability, solubility, and absorption of active ingredients. With scalable manufacturing and process control, SPRYFORM™ ensures consistent, high-quality outcomes.

- ✓ SPRYFORM™ - S
- ✓ SPRYFORM™ - P
- ✓ SPRYFORM™ - R
- ✓ SPRYFORM™ - Y

**Patent Pending*

LutiSharp™

Encapsulated Free Lutein



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Health Benefits



Eye Health



Cognition &
Healthy
Aging

Animal Nutrition

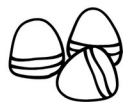


Poultry &
Animal Feed

Applications



Tablets &
Capsules



Gummies



Ready to
drink
Beverages



Stick packs



Health
Supplement
Powders

Micro-encapsulated **SPRYFORM™**
technologies

Improved Shelf Life & Performance

Made with Natural Ingredients

Water Dispersible / Soluble
Beadlets

Green Process of Ingredient
Product Manufacturing

Animal Pharmacokinetic Study*

developed and patented by SPRY FORMULATIONS.

CurcMov™

Higher Payload
Curcumin in CWS
form



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Health Benefits



Joint &
Muscle
Health

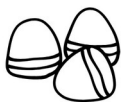


Sports
Nutrition

Applications



Tablets &
Capsules



Gummies



Ready to
drink
Beverages



Stick packs



Health
Supplement
Powders

Formulated using **SPRYFORM™**
technologies

High Payload of 40% total Curcuminoids

Made with Natural Ingredients

Water Dispersible / Soluble Beadlets

Green Process of Ingredient Product
Manufacturing

Animal Pharmacokinetic Study*

developed and patented by SPRY FORMULATIONS.

GinGIT™

Ginger in CWS
form



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Health Benefits

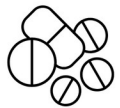


Gut Health

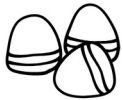


Inflammation & Pain

Applications



Tablets & Capsules



Gummies



Ready to drink
Beverages



Stick packs



Health
Supplement
Powders

Micro-encapsulated **SPRYFORM™**
technologies

Gingerols 5% & 10% payload

Made with Natural Ingredients

Water Dispersible / Soluble Beadlets

Green Process of Ingredient Product
Manufacturing

developed and patented by SPRY FORMULATIONS.

SPRYFORM™ FLAVOURS



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Oil Flavours made Water Soluble / Dispersible

Flavour Profiles



Beverages



Bakery

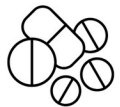


Confectionary

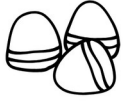


Dairy

Applications



Tablets &
Capsules



Gummies



Ready to
drink
Beverages



Stick packs



Health
Supplement
Powders

Micro-encapsulated **SPRYFORM™**
technologies

Active Flavour Oil Payload of 10% /
20%*

Made with Natural Ingredients which
does not interfere with flavour nodes

Water Dispersible / Soluble Beadlets

Green Process & Organic Solvent Free
Technology of Manufacturing

About SPRY Formulations



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Natural Nutraceutical Ingredient Technology Platform offering high-performance, application-ready ingredients.

We engineer delivery systems that enhance stability, control release, and improve absorption.



Contract Research and Formulation Support to solve complex development challenges.

Our solutions simplify formulation while ensuring consistent results from development to scale.

About Roots Formulations



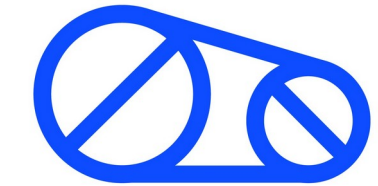
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**Toll
Manufacturing**
services in encapsulated
ingredient processing
for **nutraceutical and
food industries**



**State-of-the-art
facility** fully
compliant with all major
global regulations, **built
to cater global markets**



anish

Group company of **A
nish PharmaEquip**,
global pharma machinery
leader with **30+ years** of
expertise

Thank You.

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