

RC001/RC001-OE

UPCYCLED PALM POLYPHENOLS FOR AQUEOUS AND OIL MATRICES

Clean-label antioxidant functionality, freshness protection, and formulation flexibility across water-based and lipid-rich food systems.

RC001 is an upcycled polyphenol ingredient platform for manufacturers seeking preservative functionality in both aqueous and oil-rich matrices. Made from palm oil production streams that often go to waste, using proprietary extraction methods, RC001 turns circular sourcing into practical formulation value and supports oxidative-stability positioning and flavor quality.

FORMATS FOR FLEXIBLE FORMULATION

- **RC001 aqueous** : Water-compatible palm polyphenol format for sauces, brines, beverages, marinades, glazes, and aqueous processing systems.
- **RC001-OE oil matrix** : Oil-compatible emulsion format for mayonnaise, dressings, seasoning oils, fried foods, snacks, and lipid-rich foods.

YOUR NEED	RimbaCore™ FUNCTION	BENEFIT
Rancidity / stale flavor prevention	RC001-OE oxidative-stability support	Freshness and shelf-life
Water-compatible polyphenol delivery	RC001 aqueous extract	Easier use in sauces, brines, and beverages
Cleaner preservative story	Food-derived, upcycled palm polyphenols	Differentiated ingredient platform
Oil and water matrix challenges	Aqueous + oil-emulsion formats	Broader formulation fit
Defensible ingredient technology	Proprietary extraction / delivery method	Sustainable innovation angle

Target Applications: Mayonnaise and dressings; seasoning oils; sauces and marinades; snack bars; fried foods; bakery; frozen pizza; beverage and aqueous systems



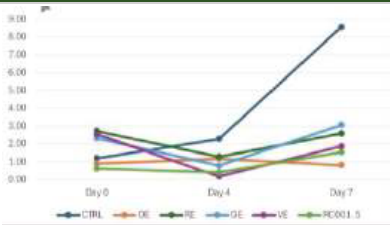
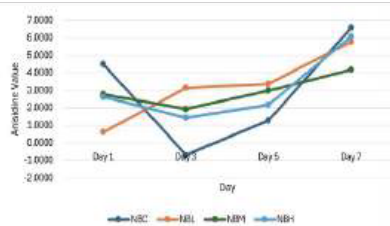
RC001 | APPLICATION OVERVIEW

Upcycled palm polyphenols for clean-label antioxidant and preservative functionality in both RC001 aqueous and RC001-OE oil matrix format

COA /QA Summary

	Target	Data Source	Key attributes
Source & technology	Upcycled palm production streams; proprietary, green extraction platform	Batch dossier	Circular sourcing and differentiated clean-label story
Presentation	RC001 aqueous liquid; RC001-OE oil-compatible emulsion	Visual ID and lot code	Use in sauces, brines, beverages, mayo, dressings and snacks
Appearance	Aqueous: amber-brown liquid; OE: tan/golden emulsion	Visual, odor, pH, solids	Easy deployment and formulation compatability
Profile	Polyphenol batch data	LC-MS	Antioxidant and preservation function
Safety	Microbiology and heavy metals	Pass	Sustainable, safe product

Application Data summary

Application	RC001 dose	Comparator set	Readout	Key results
Mayonnaise & dressings	RC001 aqueous 0.5% w/w	Untreated control (CTRL); rosemary(RE); green tea(GE); mixed tocopherols (VE); olive polyphenols (OE)		RC001 performed equally to currently used preservative extracts, indicating that RC001 may offer a cheaper and more sustainable oil matrix preservation solution
Nut bars / high-fat snack systems	RC001 aqueous 0.025-0.75% w/w	Untreated control (NBC) + RC001 0.25% (L), 0.5% (M) and 0.75% (H)		RC001 reduced visual and olfactory indicators of rancidity and showed a 22% improvement in tested rancidity marker (P-anisidine) versus untreated control in nut bar model.

Positioning Statement

Best current fit: high-fat composite foods where rancid oil creates stale flavor risk (nut bars, snack coatings, seasoning oils, dressings, mayonnaise-type emulsions).

Comparator data: Initial benchmark against rosemary, green tea, tocopherols/vitamin E, and olive polyphenols; position RC001 as an upcycled palm-polyphenol alternative or complement with aqueous + oil delivery formats.

RC002 | PALM + SPIRULINA PLANT-BASED MEAT SYSTEM

Clean label savory - Flavor - Color - Oil stability - Sustainability

RC002 is a proprietary clean-label palm + spirulina system for plant-based meat, designed to support savory performance, natural color contribution, oil-stability support, and circular ingredient innovation.

Made from **upcycled palm side-stream polyphenols** and **spirulina**, RC002 turns circular sourcing into practical formulation value for meat analogue systems, offering savory performance, umami, roasted, and meaty flavor depth in plant-based meat systems. Upcycled palm polyphenols support oxidative stability in fat-containing meat analogues, while spirulina-derived components provide natural visual differentiation.

YOUR NEED	RimbaCore™ FUNCTION	BENEFIT
Weak savory depth in plant-based meat	Palm + spirulina flavor modulation	More rounded umami / roasted / savory profile
Clean-label formulation pressure	Food-derived, recognizable inputs	Cleaner innovation platform
Oil oxidation in meat analogues	Palm polyphenol functionality	Freshness and quality support
Natural color	Spirulina-derived pigments and food components	Better appearance and differentiation
Differentiated, clean technology	Proprietary extraction	Defensible ingredient advantage
Sustainability pressure	Upcycled palm side streams	Circular sourcing story

Target Applications: Plant-based burgers, patties, sliders, sausages, meatballs, nuggets, dumpling fillings, taco mince, bolognese, chili, curry bases, and ready-meal meat analogue system



RC002 | APPLICATION OVERVIEW

Plant-based meat, clean label flavor, browning and organoleptic enhancement system produced from upcycled palm and Spirulina.

COA / QA Summary

	Target	Data Source	Key attributes
Source & technology	Upcycled palm production streams and spirulina; proprietary clean-label, green extraction platform	Batch dossier and raw material records	Circular sourcing, natural colour / flavor story and differentiated ingredient platform
Presentation	RC002 liquid concentrate or soft paste	Visual ID, lot code, solids and pH	Use in burger patties, plant meat bases, marinades, skewers, sauces and glazes
Appearance	Deep blue-green-brown	Visual, odour, pH, solids	Visual impact is a feature in cooked and highly seasoned applications
Profile	Pigment, odor, peptide and mineral fingerprint	LC-MS / ICP	Supports color, browning and savory depth
Safety	Microbiology, heavy metals, residual solvent / process checks and label review	Batch COA	Food-grade, clean-label deployment; final allergen and labelling checks by market

Application & Organoleptic Evidence Summary

Application	RC002 dose	Comparator set	Image	Key results
Burger / plant-based patty (soy ingredient)	0.5% w/w in patty base or coating	Untreated (C) versus spray-coated patty (E)		RC002 treated burger showed better browning and more savory depth. Reduced metallic aftertaste with RC002.
Plant-based meat satay skewers (mushroom and soy ingredient)	0.25% w/w in marinade	Standard satay marinade (C) versus standard satay marinade + RC002		RC002 had excellent marinade adhesion and resulted in a darker, more visually appealing skewer enhancing peanut, chilli, smoke, sugar and spice notes, with roasted aroma and meaty satay cues.

Positioning Statement

Best current fit: Cooked, high-spice or high-browning applications where color, aroma and savory depth are purchase drivers: plant-based burgers, skewers, marinades, glazes and street-food style formats.

RC003 | OIL-STABILITY & UPF SUPPLEMENTATION INGREDIENT

RC003 is an upcycled oil-stability and UPF supplementation ingredient for snack and baked goods manufacturers looking for clean-label, preservative functionality, freshness protection, and replacement of micronutrients lost during processing

Made from upcycled palm side streams, rice bran and food side streams, RC003 turns circular sourcing into practical formulation value

- **FRESHNESS QUALITY** : Supports oxidative stability in oil-rich matrices such as chips and snack bars – documented vegetable oil stability functionality
- **CLEANER PRESERVATIVE STORY** : Food-derived, upcycled functionality for innovation positioning
- **UPF SUPPLEMENTATION** : Helps replace micronutrients and trace components reduced during processing
- **PROCESS FIT** : Use as a coating, seasoning component, carrier, inclusion, or processing aid
- **HANDLING POTENTIAL** : Chip drop-test improvement suggests breakage prevention

YOUR NEED	RimbaCore™ FUNCTION	BENEFIT
Rancidity / stale flavor prevention	Oxidative-stability support	Freshness and shelf-life quality
Preservative reduction	Food-derived upcycled functionality	Cleaner innovation platform
UPF nutrient loss	Micronutrient / trace component replacement	Stronger supplementation story
Existing processes	Flexible formats	Easier adoption

Target applications : Potato snacks, corn and rice-based snacks, extruded and baked snacks, frozen pizza, long-life bread and bakery items



RC003 | APPLICATION OVERVIEW

Upcycled palm and industrial food production waste based clean-label preservative and fortification support system for salty and sweet snacks, long-life baked goods, frozen pizza, and processed foods.

COA / QA Summary

	Target	Data Source	Key attributes
Source & technology	Upcycled palm / food production streams; proprietary clean-label, green extraction platform	Batch dossier and raw material records	Circular sourcing, UPF nutrient-replacement and differentiated snack ingredient platform
Presentation	RC003 liquid concentrate, soft paste, or spray-dried powder	Visual ID, lot code, solids, pH and moisture	Topical use in chips, extruded snacks, crackers, breading and seasoning systems, direct incorporation in pizza dough and baked goods
Appearance	Amber-brown plant extract	Visual, odor, pH, solids	Designed for low-dose administration – coating and incorporation with no change to production process
Profile	Polyphenol, organic acid, mineral and film-forming fingerprint	LC-MS / ICP / solids	Supports oxidative resilience and nutrient-replacement/food fortification positioning
Safety	Microbiology, heavy metals, residual solvent / process checks and label review	Batch COA	Food-grade, clean-label deployment; final allergen and labelling checks by market

Application & Physical Evidence Summary

Application	RC003 dose	Comparator set	Image	Key results
Potato chips	Topical coating; low-dose spray coating	Untreated control versus RC003-coated experiment group		RC003-treated chips showed better physical robustness in drop testing, with less breakage and crumbling observed versus control. Preliminary data showed evidence of oil preservation functionality. Awaiting metabolomics data for UPF fortification potential.

Positioning Statement

Best current fit: Topical salty snack coatings where breakage reduction, coating adhesion, oxidative resilience and UPF nutrient-replacement (healthy snacking) are purchase drivers. Applications in potato chips, stacked chips, extruded snacks, crackers, pizzas and long-life baked goods.

RC004 | CLIMATE HYDRATION COMPLEX

Seaweed + Spirulina + Palm Bioactives

FUNCTIONAL HYDRATION FOR HEAT-STRESS RESILIENCE

RC004 is a next-generation functional hydration ingredient designed for a hotter world.

Built from marine minerals, spirulina phytonutrients, and upcycled palm polyphenols, RC004 supports hydration, electrolyte balance, antioxidant defense, and recovery during heat

RC004 is designed as a baseline ingredient for sports rehydration, outdoor workers, hot-climate consumers, elderly care facilities, and heatwave preparedness programs.

Heat stress is not simply thirst. It combines fluid loss, electrolyte depletion, vascular strain, oxidative stress, fatigue, reduced performance, and increased vulnerability in older adults. RC004 brings together three complementary bioactive streams: Upcycled palm polyphenols for antioxidant and heat-resilience, seaweed extract for marine minerals and micronutrients for hydration and Spirulina extract for phytonutrients and recovery support.

SEGMENT	RC004 FORMAT
Sports hydration	Blue-green electrolyte recovery drink with marine + spirulina story
Outdoor workers	Heat-stress hydration sachets for daily use
Elder care	Palatable hydration support during heatwaves
Hospitals / clinics	Non-medical hydration support beverage
Travel	Hot-climate travel hydration sachet
Military / emergency response	Lightweight hydration and heat-stress support format
Convenience retail	Climate hydration RTD or powder stick



RC004 | APPLICATION OVERVIEW

Hydration and heat-stress support system produced from seaweed, Spirulina and upcycled palm extract for sports, outdoor work, and elderly care hydration formats.

COA / QA Summary

	target	Data Source	Key attributes
Source & technology	Seaweed, Spirulina and upcycled palm production streams; proprietary clean-label, green extraction platform	Batch dossier and raw material records	Circular sourcing, marine and algae nutrient story and differentiated hydration ingredient platform
Presentation	RC004 liquid concentrate or dry beverage premix	Visual ID, lot code, solids, pH and dispersibility	Use in sports drinks, hydration sachets, RTD shots and institutional beverage bases
Appearance	Blue-green concentrate; pale blue beverage on dilution	Visual, odour, pH, solids, turbidity and sedimentation	Colour is a feature in functional hydration and heat-stress support positioning
Profile	Polyphenol, pigment, osmolyte and mineral fingerprint	LC-MS / ICP / UV-Vis; osmolality and pH	Supports technical differentiation in electrolyte-compatible hydration systems
Safety	Microbiology, heavy metals, algal raw material controls, residual solvent / process checks and label review	Batch COA	Food-grade, clean-label deployment; final claims and warnings confirmed by market

Application & Formulation Evidence Summary

Application	RC004 dose	Formulation	Image	Key observations
Sports hydration beverage / sachet	Prototype range: 0.5% w/w equiv.	Electrolyte base + RC004; light acid / sweetener; RTD or powder		RC004 is positioned as a seaweed / Spirulina / palm hydration system for electrolyte drinks, sport recovery, outdoor work and older adult hydration formats. Next tests: osmolality, pH, colour, turbidity, taste, sedimentation and heat / light stability.

Positioning Statement

Best current fit: Electrolyte beverage powders, RTD hydration shots and institutional hydration formats where heat-stress support, clean-label mineral / phytonutrient sourcing and visual differentiation are purchase drivers: sport recovery, outdoor workers and older-adult hydration programs.