

A GUT-CENTRED, MULTI-SEAWEED FRAMEWORK FOR MODERN CANINE NUTRITION

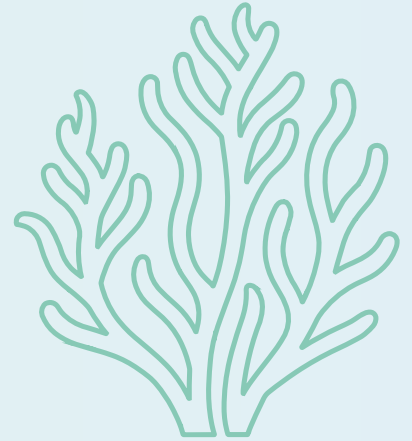
How fermentative green seaweeds, supported by complementary marine bioactives, can improve gut robustness, tolerance and whole-dog wellbeing



OVERVIEW

Modern canine nutrition increasingly recognises gut health as a central determinant of whole-dog wellbeing. **Digestive tolerance, stool quality, immune balance, skin and coat condition,** behavioural comfort, and overall vitality are now understood to be closely linked to gut ecology rather than isolated dietary inputs.

The full white paper presents a gut-centred, multi-seaweed framework for canine nutrition. It builds from the established value of green seaweeds as fermentative, gut-active ingredients, and explores how complementary brown and red seaweeds can be used to stabilise, extend, and strengthen this foundation across diets, life stages, and product formats.



WHY GUT HEALTH SITS UPSTREAM IN DOGS

Dogs are particularly sensitive to changes in diet composition, fermentable substrate supply, and environmental stress. Even in **healthy animals**, imbalances in gut fermentation commonly manifest as loose stools, flatulence, digestive discomfort, behavioural reactivity, or secondary skin issues.

For this reason, contemporary canine nutrition increasingly focuses on:

-  Supporting stable microbial fermentation
-  Maintaining epithelial and barrier integrity
-  Reducing unnecessary inflammatory and oxidative load

Rather than targeting individual downstream symptoms, intervening at the level of gut ecology provides a more robust and resilient nutritional strategy.



THE ROLE OF DIFFERENT SEaweEDS IN A GUT-CENTRED FRAMEWORK

Marine macroalgae are a diverse group of organisms with markedly different compositions and biological functions. Treating all seaweeds as equivalent obscures this functional diversity.

Green seaweeds play a central role in gut-centred canine nutrition. Their rhamnose-rich sulphated polysaccharides and highly fermentable fibre fractions resist upper-GI digestion and are selectively fermented in the colon. *This supports:*

-  Short-chain fatty acid (SCFA) production, including butyrate
-  Microbiome balance
-  Stool consistency and digestive comfort

For many canine formulations, **green seaweeds** can reasonably be considered the core functional driver within marine ingredient strategies.

Brown seaweeds, including *Ascophyllum nodosum*, contribute fucoidans, laminarins, alginates, and polyphenols. *These compounds support:*

-  Immune modulation
-  Epithelial and barrier integrity
-  Keratinised tissues, including skin and oral structures

Ascophyllum remains a well-validated and valuable tool, particularly for oral health, but is best understood as functionally specialised rather than comprehensive.

Red seaweeds provide sulphated galactans and gel-forming fibres that:

-  Bind water and stabilise digesta
-  Support stool firmness and gut hydration
-  Contribute antioxidant and anti-inflammatory activity

In a blended context, red seaweeds help stabilise the physical gut environment in which green-seaweed-driven fermentation occurs.

WHY A MULTI-SEAWEED APPROACH ADDS VALUE

Blending green, brown, and red seaweeds is not intended to correct deficiencies in green seaweed use. Instead, it allows green-seaweed-driven fermentation to be expressed more consistently and robustly by:

-  Broadening functional coverage across gut, immune, and barrier systems
-  Improving resilience across individual dogs, diets, and life stages
-  Managing iodine and trace-mineral exposure through species selection and dilution
-  Enabling higher, still-safe inclusion rates where functionality requires it

This specification-led, multi-seaweed approach shifts seaweed from a niche additive to a system-level nutritional platform.

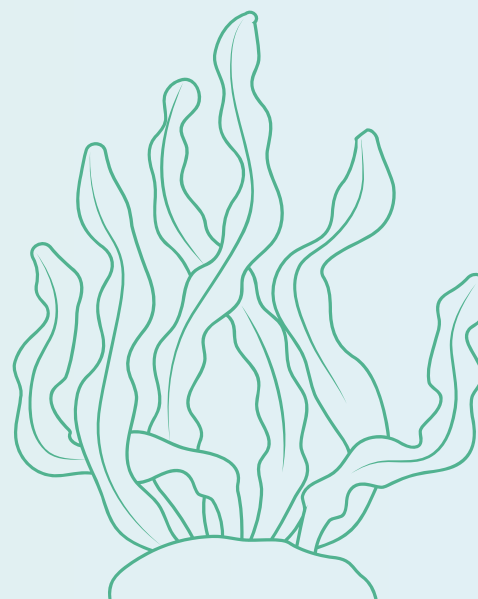


PREDICTED AREAS OF NUTRITIONAL SUPPORT

Based on independent canine feeding **studies and cross-species marine polysaccharide research**, a gut-centred, multi-seaweed strategy is predicted to support:

- 1. Digestive stability** and stool consistency
- 2. Improved tolerance** during dietary transitions
- 3. Skin and coat condition** via gut-immune-skin pathways
- 4. Behavioural comfort** linked to gut comfort and fermentation balance
- 5. Broader immune resilience** and metabolic robustness

These outcomes are presented as biologically plausible, directional effects arising from improved gut ecology, not as direct, guaranteed, or clinical claims.



PROCESSING AND FORMULATION BENEFITS

In addition to nutritional relevance, marine polysaccharides offer technological advantages for pet food manufacturers, including:

-  Moisture retention in wet and semi-moist foods
-  Improved texture and structural integrity
-  Reduced crumbling and fines
-  Potential to reduce reliance on isolated fibres or synthetic binders

These properties support cleaner labels, formulation simplicity, and more consistent consumer experience.



SAFETY, IODINE MANAGEMENT, AND LONG-TERM USE

Iodine and trace-mineral content are legitimate considerations when using seaweeds in pet food. Single-species brown seaweeds can impose low inclusion ceilings due to naturally higher iodine levels.

A blended approach distributes mineral exposure across a broader matrix, allowing predictable, specification-led formulation while expanding functional scope. This supports regulatory compliance, long-term feeding safety, and product consistency at scale.



POSITIONING THE FRAMEWORK

OceanFeed™ Pet is formulated as a green-seaweed-first system, in which fermentative and microbiome-active polysaccharides are supported by complementary brown and red seaweeds to improve robustness, flexibility, and system-level balance.

Rather than acting as a single-purpose additive, this approach positions marine macroalgae as a foundational gut-health and functionality platform, aligned with modern understanding of canine physiology and consumer expectations.



HOW TO INTERPRET THE EVIDENCE

The mechanisms described in this summary are **grounded in independent science and established biological principles**.

Exploratory microbiome observations are presented as hypothesis-generating and directional in nature. Outcomes will vary with diet composition, inclusion rate, animal variability, and feeding context.

This framework is intended to inform further validation and co-development, not to replace controlled in-home feeding trials.

For further detail, please request the full White Paper and/or Microbiome Trial Report.

