PureSea® Pet is an innovative seaweed ingredient, standardised to natural iodine and sustainably sourced from the pristine Scottish Outer Hebrides. PureSea® Pet is processed using proprietary technologies, with every batch DNA Authenticated for quality and provenance.

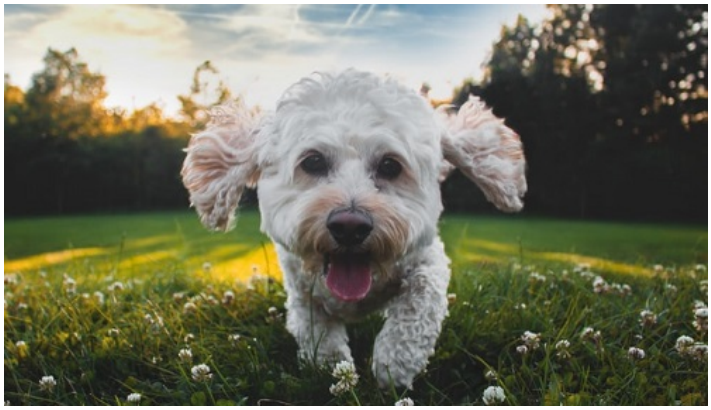
PRODUCT PROFILE SHEET

Seaweed has long been used for various aspects of animal health and nutrition. The natural multi-minerals of seaweed benefit general wellness, with specific attributes of improving gut health, oral health and coat quality.

Mirroring human health trends, there is a growing incidence of obesity and related health conditions in pets. The epidemic of obesity and Type 2 diabetes in humans is being reflected in pets, for similar reasons of reduced activity levels and poor diet.

In the UK, there is an estimated 1.7 million cat and dog owners who have overweight pets which may lead to Type 2 diabetes, and more broadly there is an awareness of these issues growing across society as a whole.

These challenges can be addressed by offering pet supplements, pet foods and/or treats with natural and research-driven ingredients, which also provide attractive flavours for pets. Through world-leading research, PureSea® Pets can address the growing epidemic of obesity and diabetes in pets, through the natural management of blood sugar release.



Product Advantages

- ✔ 100% natural and sustainable wholefood
- ✔ Standardised iodine for pet health benefits
- ✔ Researched for obesity and Type 2 diabetes
- ✔ Easy inclusion in any pet food application
- ✔ Provenance: sourced from the pristine and remote Scottish Outer Hebrides
- ✔ Full transparent traceability & proprietary production
- ✔ Animal free: plant-based innovative solution

Research

Seaweed is recommended for dry and raw pet foods, treats and food supplements due to it being a source of iodine. Iodine is an essential nutrient for normal functioning of the thyroid for cats and dogs, with insufficient intake leading to hypothyroidism (an underactive thyroid). Thyroid hormones have an influence on various organs; therefore, hypothyroidism can result in multiple negative health outcomes for pets[1].

Decreased Metabolic Rate

Side effects: low energy/lethargy, weight gain, cold intolerance

The iodine-containing amino acids produced by the thyroid gland are T3 and T4. Since these hormones increase the oxygen consumption and metabolic rate of most tissues in the body, iodine deficiency can result in a decreased metabolic rate. Clinical symptoms associated with decreased metabolic rate include lethargy, weakness, mental dullness, unwillingness to exercise, cold intolerance and weight gain[2]. Overweight dogs further increase their risks of adverse health outcomes, including a reduced lifespan[3].

Dermatological Abnormalities

Side effects: poor coat/hair loss

Adverse dermatological symptoms are also reported in dogs suffering from an underactive thyroid, this is unsurprising, given that the iodine-containing hormones play an important role in the maintenance of skin health. Dogs with inadequate iodine intake may suffer from hair loss, or their coat may appear dull or faded in colour. Furthermore, hypothyroidism may also predispose dogs to dry, scaly skin as well as recurrent bacterial skin infections[1].

PureSea® for Oral Health

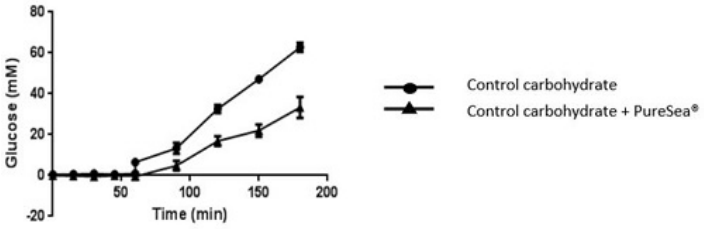
In addition to the health benefits associated with iodine content, seaweed – particularly the *Ascophyllum nodosum* species used for PureSea® – has been found to be beneficial for the oral health of dogs[4,5]. One study concluded that the seaweed used

by PureSea® resulted in significant improvement in multiple dental health indicators, including the prevention of plaque[4]. Following that, a more recent study concurred that the seaweed may turn off the pathways that enhance plaque and calculus development[5].

PureSea® for Weight Management

According to the Pet Food Manufacturers Association obesity report, 51% of dogs, 44% of cats and 29% of small mammals are overweight or obese[6]. Just like humans, being overweight puts animals at risk of multiple other negative health outcomes, including diabetes and cancer[6].

Independent research by Newcastle University Medical School demonstrated that PureSea® inhibits the enzymes responsible for the breakdown of carbohydrates, resulting in a slower release of sugars to the blood.



This can reduce the glycaemic response of foods, helping to maintain energy levels and increase satiety – providing benefits for both weight loss and diabetes management.[7]

Further Benefits

There are numerous other benefits of supplementing with seaweed. Multiple high-quality clinical trials support the use of seaweed for antiviral, antibacterial and antimutagenic purposes in humans, but with mechanisms that could be related to pet health[8].

Manufacturing Process

Sourced in pristine Scottish waters, the sustainable wild harvesting is undertaken by carefully selecting the best sites and cutting the seaweed using specialist vessels and techniques. The seaweed is then dried and further processed in dedicated food grade facilities, using PureSea®'s proprietary techniques.

Product Safety

A study published in the British Journal of Nutrition[9], using the PureSea® seaweed species, along with the batch testing and trend knowledge of iodine levels, demonstrate the effectiveness, bioavailability and safety of PureSea® as a natural source of iodine in the diet.

Every batch is tested for iodine, with a defined range for consistency in finished products, safety parameters such as heavy metals, microbial activity, and with full transparent traceability including unique DNA Authentication.

To the best of our knowledge, scientific research done using Ascophyllum nodosum species, had no negative affect in animal use.

Product Range

Ingredient	Iodine Content	Grade	Mesh Size
PureSea	650-980 mg/kg Iodine	Fine Granules	NLT 95% thru 400 micron

Product Applications

PureSea® Pet can be used in dry mixes, wet foods and sauces, and extruded applications.

About

SEAWEED & CO.

Seaweed & Co. is the company behind PureSea®, and are experts on the production and supply of gold-standard seaweed ingredients. Founded by Dr Craig Rose, with a panel of experts including marine scientists, nutritionists and academics from a variety of disciplines, Seaweed & Co.'s research and accreditation assures confidence in the product and high quality, consistent and sustainable supply.

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