

KELP-MART: THE BOUNTY OF A KELP FOREST

The biodiversity found in kelp forests is part of one of the most dynamic and productive ecosystems found anywhere in the biosphere.

The diversity of organisms that make kelp forests their home is impressive (Figure 1). These plant-like giants of the sea can grow as much as 30 cm each day. They prefer cold, nutrient-rich waters that form the base of one of the most biologically productive and dynamic ecosystems on Earth and extend into both the Arctic and Antarctic circles. Foraging sea otters, frolicking in the tangles of long stipes of B.C. coastal kelp forests, are offered a diverse buffet of sea urchins, clams, and crabs. Found in shallow, open coastal waters worldwide, kelp forests provide not only a plentiful bounty for the ocean but also a staggering array of products useful to humans.

Brown seaweeds, such as those of kelp forests, produce substances called alginates. Alginates are classified as complex carbohydrates and possess a unique molecular structure that forms heat-stable, non-melting compounds. These compounds are ideal as food stabilizers and thickening agents to prolong the shelf life and increase the mass and volume of food products. Imagine runny ice cream or watery ranch salad dressing. Without alginates, you would probably not experience mealtimes in the same way. In fact, you probably consume alginates daily because their use is so widespread in our food products.

Often labelled as sodium alginates, these food additives can be found in ice cream, soups, creamy liquids such as salad dressings, yogurt, relishes and sauces, and both frozen and dehydrated foods. Products of algae can also be found in cosmetics, antacid preparations, and paper and textile products.

So, the next time you make a trip to the grocery store, remember the extensive contribution of the kelp forests. Not only are they the producers in intricate ocean food webs, but they are also the source of key ingredients that give many of our manufactured food products the texture and appearance we expect and demand as discerning consumers.



Figure 1 Otters are not the only creatures that take advantage of the kelp forests!