Re test with new image in place. Dana, Let us know if this is approved. Thanks

Welcome to SeaScope!

Welcome to the new digital edition of SeaScope, with the same information-packed issues coveted by marine aquarists everywhere since 1983. Each newsletter will continue to bring you a variety of topical articles, including reviews, product information, practical ideas, important case studies and interesting points of view. It's all meant to keep you in the know and at the forefront of the marine hobby. We hope you enjoy the issue, and welcome your comments and input.

Super-Sized Aquariums

by Stan Owens, Division Vice President; Greg Valatka, Director of Operations; Melissa Wright, Quality Engineer, Chemical Products, all from United Pet Group

In October, we shared Part one of this article, which covered the science behind the creation of Instant Ocean Sea Salt, as well as insight into their manufacturing operation. We conclude with a look at how Instant Ocean works with some of the largest aquariums around.

Whether they reside in 50 or 500,000 gallon aquariums, marine life require quality product that offers them consistent, healthy conditions. The number one characteristic that those in charge of larger, public aquariums look for is consistency in product. They want to understand that the batch of Instant Ocean they receive today will be the same a year from now, or more, as the animals in their charge have very little tolerance for change, even with the most minor trace element.

In fact, Instant Ocean is the world’s most widely used aquarium salt not only at home but also trusted in 75 zoos, aquariums and marine adventure parks, such as: Sea World, Orlando; John G. Shedd Aquarium, Chicago; Wonders of Wildlife Museum, Springfield, IL; Columbus Zoo’s Discovery Reef, OH; Georgia Aquarium, Atlanta (The World’s Largest Aquarium); The Dallas World Aquarium, TX; Underwater Adventure in the Mall of America, Bloomington, MN; Shark Reef at Mandalay Bay, Las Vegas; and many others.

Today, fewer and fewer aquariums have the ability to pump water directly from the ocean, which must still be filtered before...
Outline
1. Introduction
2. Natural feeding strategies
3. Marine vs. freshwater nutrition
   a. Acceptability
   b. Water production
   c. Specific nutrient requirements
4. Types of Marine Food
   a. Marine Gel food
   b. Frozen food
   c. Live food
   d. Dry food

use. And, while some still mix their own onsite, others value the consistency of working with manufacturers like Instant Ocean, along with the fact they do not have to store the necessary ingredients and equipment on their own properties.

Surprisingly, changing the water at large aquariums is much the same process as found in the home, just on a super-sized scale. The John G. Shedd Aquarium in Chicago, for instance, has over 750,000 gallons of aquariums. They may perform a monthly water change of 25%, just as most home enthusiasts would do. The aquarium dwellers, including mammals, never leave their environs. Through an elaborate system of brass valves that pump in the new mix while removing the old, a water change can be accomplished in less than one hour. Seeing the operation onsite and at scale showcases a process that is both efficient and impressive.

For over 40 years, the goal of Instant Ocean has been to produce a synthetic sea salt that mimics natural seawater, while providing optimal environments for all marine life. From the start, Instant Ocean was developed and improved upon by devoted scientists and aquarists who have a true passion for the hobby. That remains standard practice at Instant Ocean today and can be seen through its overall product consistency, dedication to innovative manufacturing processes and understanding of aquariums both small and large.

A CONTINUING SERIES
Part 4d: Dry Food and Nutrition
Dr. Hubert Kuerzinger, Senior Scientist Nutrition, Tetra Global R&D Center Nutrition

Visit www.instantocean.com to read more about Marine Fish Nutrition.

Types of marine foods
There are a variety of different food types available for feeding marine fish, and it is important to make the right choices to ensure your fish get the balance of nutrition they need. We conclude our series with a discussion on dry food. You may catch up with previous sections on Marine Gel food, frozen food or live food online.

For freshwater fish, dry foods are widely available and generally well-accepted by the fish. For this reason, they form the main part of the diet, with frozen or live foods being offered as treats. The advantage of a high quality dry food is that, provided it is formulated and produced correctly, it will deliver a balanced diet containing everything needed by the fish. This removes the need for feeding lots of different food types, or for trying to supplement the diet (which is never a scientifically accurate process).

Dry foods are also convenient and, if well produced, will result in very little waste. The major drawback is that not all marine fish will eat them, although this situation is improving as more and more diets are reaching the market. As with freshwater fish, marine fishkeepers are increasingly being advised to feed a dry food as the main part of the diet, with frozen foods used to provide additional variety.

Through improvements in diets, coupled with better advice on which fish adapt best to dry foods, it is therefore becoming easier to provide a balanced diet to marine fish.

Because feeding marine fish is not always as straightforward as feeding freshwater species, it is important both to check on requirements before purchase, and to ask about what the fish has been fed while in captivity. If you want to keep things simple, choose species that are not overly fussy, and that are likely to take a dry diet.

To see the complete line of Instant Ocean nutritional products...
To see the complete line of Instant Ocean nutritional products, visit www.instantocean.com.