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General Affairs Group, General Affairs and Human  
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Ube Material Industries, Ltd.

## Dialogue Report

### “It works exceptionally well when bacterial floc forms, so why doesn’t everyone know about it?”

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with

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What can we do to make our products known to more people? When we were thinking about that, the idea for dialogue articles in the company newsletter came to mind. A dialogue format could convey the attraction of our products and our customers as well! With this hope in mind, we went to participate in the dialogue that follows. The first dialogue took place in our home prefecture of Yamaguchi.

Ube Material Industries uses the knowledge gained from the production of magnesia clinker to produce and sell a variety of environmental products. Clear Water<sup>®</sup>, an environmental improvement agent launched in 1993, is a flagship product in this area. It is ideally suited for maintaining the fishing ground environment, which is essential for sustainable aquaculture. Amid growing calls for achieving the SDGs, this product made with magnesium derived from seawater is attracting more attention.

This time we visited the Inland Sea Farming Fisheries Center of the Yamaguchi Pref. Sea Farming Public Corporation, which has been using Clear Water<sup>®</sup> for more than 20 years. We asked them about their efforts and their impressions of the product.



Dialogue  
(Center: Mr. Tanimura, Left: Mr. Matsumoto)



The water tank prepared for this interview

—— First of all, please tell us about your business.

**Tanimura:** The Yamaguchi Pref. Sea Farming Public Corporation is a core organization for the promotion of fish farming in Yamaguchi Prefecture. We conduct various projects related to fish farming in cooperation with the prefectural government and the fish farming promotion councils of eight regions. Also, based on a designated management agreement with Yamaguchi Prefecture, we develop technologies, provide instruction and training, and conduct awareness raising campaigns related to fish farming. These activities include the production and distribution of eggs and fry (baby fish) such as tiger pufferfish, flounder, sweetfish, tiger prawns, swimming crabs, Japanese mitten crabs, and blood clams for stocking and aquaculture.

—— There were a lot of crabs lined up in the entrance hall.

**Tanimura:** Elementary school students who come to visit are very happy to see them. Fifth graders learn about fish farming, and this year 4,000 children came here on field trips. We tell them about the importance of fish farming through a facility tour and a lecture. Everyone seemed to listen intently.

—— What is your job, Mr. Matsumoto?

**Matsumoto:** It's my job to produce and release healthy fish. In that work, Clear Water® helps to produce healthy eggs and fry.

—— Are the tiger shrimp fry grown here shipped to fish farmers in the Aio area of Yamaguchi Prefecture?

**Tanimura:** That's right. They are also shipped to the Yamaguchi Prefectural Fisheries Cooperative Association and fish farmers inside and outside the prefecture for stocking and aquaculture. In fiscal 2020, we shipped 5.77 million fry at the 13 mm size for stocking and aquaculture combined and 850,000 fry at the 20 mm size. In addition to tiger prawns, we also ship the fry of the species I just mentioned, such as flounder, sweetfish, and swimming crabs, to the Yamaguchi Prefectural Fisheries Cooperative Association and other customers.

—— I guess the tiger prawns I ate here in Aio the other day were born here at this facility. That makes me feel suddenly much closer to you, Mr. Matsumoto. (Laughs)

**Matsumoto:** I'm in charge of sweetfish, so if you eat any sweetfish in Yamaguchi Prefecture, it might have been raised by me.

—— I almost feel like I shouldn't eat them.

**Matsumoto:** Oh, don't think that way. Actually, I want you to eat them. That's the purpose of my job.



Eggs and fry production tanks

—— How many people take care of the operations at the Inland Sea Farming Fisheries Center? Is it a 24/7 system?

**Tanimura:** There are seven full-time employees including myself and about five part-timers.

**Matsumoto:** It's not a 24/7 system. Basically, our work hours are from 8:30 to 17:15.

**Tanimura:** Fish feed from sunrise to sunset. Tiger prawns eat at night, too, so in the past we used to come in at night and give them fine particle compound feed. From about 20 days after hatching, they can eat compound feed with a large particle size, so we can use automatic feeders. Then, we don't need to work at night anymore. Now, if there is a power outage or abnormal temperature rise in the breeding water when no one is here, the security company will contact us.

—— Information about the Center says that you also grow rotifers or wheel animals as food for fry. Is that to protect against diseases that come from food?

**Matsumoto:** The first food that fish and crabs eat is rotifers, so we raise them to provide a stable supply of food.

**Tanimura:** We usually raise nearly 24 billion rotifers at a time, but sometimes we need even more than that at peak times. Since we need to ensure this stable supply, we raise them at our own facility under strict management.

—— Is it difficult to raise rotifers?

**Tanimura:** It's hard. However, unlike in the past, it has become easier to raise them stably by using concentrated freshwater chlorella.

—— Do the fry eat other things besides rotifers?

**Matsumoto:** The first food for fry is rotifers. When the fry grow and get a little bigger, we give them brine shrimp, and when they get big, we give them compound feed.

—— I hear that bacterial floc is likely to form when compound feed is given.

**Matsumoto:** It is easier for bacterial floc to appear when we give compound feed.

**Tanimura:** Feeding starts by using compound feed with a small particle size, and a lot of it goes to waste. That leftover feed is what causes bacterial floc to form.

—— What is bacterial floc?

**Tanimura:** That sticky stuff that makes long threads and sticks to things like boiler piping.



Scattering Clear Water®

**Matsumoto:** When floc sticks to fishes' gills, it makes it hard for them to breathe, and they end up dying from a lack of oxygen. Going back to rotifers, they are zooplankton, so they swim around. The fish see them swimming and eat them. However, since compound feed doesn't move, the fish don't recognize it as food at first and don't eat it. I think this is what happens: as they get used to it being there, some of the feed gets into their mouths and they think, "Hey, this stuff tastes pretty good." But before that, the leftover feed can make the water quality deteriorate, and that's where Clear Water® comes in.

—— Do you scatter Clear Water<sup>®</sup> after bacterial floc has formed?

**Matsumoto:** We scatter it if it looks like floc will form and when water quality deteriorates. For the sweetfish that I raise, the water in the tank becomes cloudy when the sea is rough, so I use Clear Water<sup>®</sup> at that time. We mainly use it when the water quality deteriorates.

—— It is said that Clear Water<sup>®</sup> has an immediate effect, but how long does it take to work after you scatter it?

**Matsumoto:** In the case of bacterial floc, if I add an amount, based on my experience, that I think will clear up the water, it is generally settled by the next day.

—— Around what month does the water tend to get dirty?

**Matsumoto:** In the case of sweetfish, it happens when the amount of compound feed increases from about mid-November. Also, when winter westerly winds turn the sea in this vicinity rough, cloudy water comes in, so at that time.



Dissolving Clear Water<sup>®</sup> put into a mesh bag

—— What led you to use Clear Water<sup>®</sup>?

**Matsumoto:** I used to produce flounder, and when I took over the job, my predecessor told me that he used Clear Water<sup>®</sup> when bacterial floc formed. Because it can be used for various fish besides flounder, we use it widely now. However, once when I went to a meeting where eggs and fry producers gather, no one knew about Clear Water<sup>®</sup>. I thought, “If you scatter this, bacterial floc will disappear immediately, so why isn’t everyone using it? It’s such a good product!”

—— Is it because they have a product from another company that has the same performance as Clear Water<sup>®</sup>?

**Matsumoto:** Other companies have products that clean water, but Clear Water<sup>®</sup> is very easy to use and it’s not so expensive, so I think it’s good. So, I’ve always wondered why you don’t advertise more.

—— Do you use Clear Water<sup>®</sup> and other companies’ products for different purposes?

**Matsumoto:** I use Clear Water<sup>®</sup> to change the water quality, to improve it. I use other companies’ products to adsorb dirt and sink it to the bottom.

—— Is the method of putting Clear Water<sup>®</sup> in a mesh bag and dissolving it with water something you came up with here?

**Matsumoto:** If you put it in a mesh bag and hang it under a seawater inlet, the Clear Water<sup>®</sup> dissolves well, improving the quick effect even more. I sometimes scatter it on the water, but when I want the effect right away, I hang it from the inlet.

—— Hearing that it removes bacterial floc by the next day, it sounds like Clear Water® has the potential to expand to many egg and fry centers and aquaculture companies.

**Matsumoto:** I really wonder why everyone doesn't use it. However, it's a little disappointing that it does not come immediately when we order it. Clear Water® isn't something that goes bad quickly even if you have extra stock, so I wish you would keep a certain amount of stock ready to ship as soon as an order comes in. In our business, when the water quality deteriorates, we have to take care of it right away. If Clear Water® doesn't come in for a while, the fish will die straight away. I think that your customers will be pleased if you make it so that Clear Water® comes fast, the same as medicine.

—— Thank you for your valuable feedback. We will exchange information more closely with customers and dealers and try to meet your expectations. We look forward to your continued patronage in the future.



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